A303 Amesbury to Berwick Down

Applicant's provision of technical reports supporting the Environmental Information Review

Ground Investigation - Phase 7aii Factual Report

Document reference: Redetermination 2.14

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

February 2022

GEOTECHNICS
geotechnical and geoenvironmental specialists

Ground Investigation

A303 Amesbury to Berwick Down - Phase 7a (ii)

Factual Report

for
Highways England

Engineer : AECOM

Project Number PC197626

November 2019

Issuing Office

Head Office
The Geotechnical Centre
203 Torrington Avenue
Tile Hill
Coventry
CV4 9UT
Tel: 02476 694664
mail@geotechnics.co.uk

North West Office
The Geotechnical Centre
Unit 1, Borders Industrial Park
River Lane, Saltney
Chester
CH4 8RJ
Tel: 01244 671117
mail@chester.geotechnics.co.uk

South West Office
The Geotechnical Centre
7 Pinbrook Units
Venny Bridge
Exeter
EX4 8JQ
Tel: 01392 463110
mail@exeter.geotechnics.co.uk

North East Office
The Geotechnical Centre
Unit 1, Bypass Park Estate
Sherburn-in-Elmet
Leeds
LS25 6EP
Tel: 01977 525030
mail@yorkshire.geotechnics.co.uk

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1.0 INTRODUCTION

A geotechnical and geoenvironmental investigation was undertaken by Geotechnics Limited for a proposed upgrade of the A303 to a dual carriageway between Amesbury and Berwick Down, Wiltshire. The investigation was carried out to the instructions of the Engineer, AECOM, who acted as the Investigation Supervisor on behalf of the Client, Highways England. 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 Brief for the project is included in Appendix 1. The investigation comprised rotary and dynamic sample boreholes, trial pits, in situ and laboratory testing and factual reporting.

3.0 PRESENTATION

The report is presented in electronic PDF format. 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 obtained is presented in Appendices 2 to 12. 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.

The data obtained during the investigation is presented in electronic format separately, in accordance with "The Electronic Transfer of Geotechnical Data from Ground Investigations" published by the AGS (the AGS Format).

4.0 THE SITE

4.1 Location

The site is located in the vicinity of a 6km section of the A303 between Stonehenge and Berwick Down, Wiltshire. The approximate Ordnance Survey National Grid Reference for the eastern end (Stonehenge end) of the site is SU 109 415 and the western end (Berwick Down end) SU 058 407. An extract from the relevant 1:50,000 Scale O.S. Map (Sheet No.184) is included as Appendix 2.

4.2 Description

The site is generally linear and aligned in an approximate east to west direction (bearing 080/260°), on either side of the A303, within agricultural fields. The topography is gently undulating within the eastern section from Stonehenge to approximately 1km east of Winterbourne Stoke, typically between 105m to 110m AO. In the western section, the A303 crosses perpendicular to a valley at Winterbourne Stoke, through which the River Till flows in a southerly direction. The slopes dip steeply down from about 105m and 120m AOD to 75m AOD. The ground conditions during the fieldwork were typically firm and dry.

4.3 Site Geology

The 1:50,000 scale map published by the British Geological Survey, Sheet 298 dated 2005, shows the site to be underlain by the Seaford Chalk Formation of Upper Cretaceous period. Where present, the superficial strata overlying the solid geology is shown to include Alluvium and Head Deposits of Quaternary age, associated with numerous re-entrants and the River Till crossing the site.

4.4 Hydrogeology

The Department for Environment, Food and Rural Affairs (Defra) website, http://magic.defra.gov.uk/MagicMap.aspx, accessed on the 23rd July 2019, shows the Seaford chalk to be a Principal aquifer. The superficial Alluvium deposits are classified as Secondary A aquifers while the Head deposits are Secondary (undifferentiated) aquifers.

5.0 PROCEDURE

5.1 Commissioning

The work was awarded following submission of a tender for work designed by the Investigation Supervisor for ground investigation of the site in accordance with the Client's requirements (see Appendix 1).

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, BS EN ISO 14688-1:2018 and BS EN ISO 14689:2018. The Chalk has been described in accordance with CIRIA Report C574, 2002 with the flints encountered described in accordance with "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing). The Intact Dry Density was determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002. The Rotary Borehole, Dynamic Sample Borehole and Trial Pit Records are included in Appendices 3 to 5 and their approximate positions are shown on the Exploratory Hole Location Plans in Appendix 6.

The exploratory holes locations were specified by the Investigation Supervisor. The co-ordinates and levels shown on the Exploratory Hole Records were measured using a Leica Smart Rover GPS survey device and relate to Ordnance Survey data. The depths quoted on the exploratory hole records are in metres below ground level (bgl).

At each exploratory hole location, with the exception of the trial pits, an inspection pit was excavated using hand tools to a maximum depth of 1.20m bgl 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).

Due to the archaeological significance of the area, Wessex Archaeology excavated part or all of the inspection pit that they considered appropriate as detailed on the individual records.

5.3 Rotary Boreholes

Twenty six (26 No.) 120mm diameter boreholes were sunk utilising rotary coring techniques to depths varying between 15.00m and 50.70m bgl. Where necessary 150mm diameter casing was installed, as detailed on the individual borehole records, to aid the drilling process. The work was carried out between the 19th August and 19th September 2019.
The drilling equipment on this particular contract utilised air-mist as the flushing medium. The rock cores, 100mm in diameter, were extruded horizontally in transparent liners and placed into suitable core boxes. Photographs of the individual core boxes are included in Appendix 3.

Where rotary coring was not possible due to the strata encountered, the hole was progressed utilising open hole drilling techniques as detailed on the individual drilling records. The strata descriptions on the Borehole Records in the open hole sections of the boreholes, or where no recovery was possible, are the Drilling Foreman's estimate based on sediment and chipping returns in the flushing medium. The rate of penetration is also used as an indicator of the type of material being drilled, particularly where there is a loss of flush returns.

Standard Penetration Tests (SPTs) were undertaken in three boreholes (R71803, R71811 and R71815) 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. 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.

On completion, each borehole was backfilled with a combination of arisings, grout and bentonite as detailed on the individual records.

5.4 Dynamic Sample Boreholes

Five (5 No.) Dynamic Sample Boreholes (numbered WS71501 to WS71505) were undertaken at the site to depths varying between 5.20m and 6.00m bgl. The work was carried out on the 16th and 17th September 2019.

The Dynamic Samples were taken using the super-heavy Dynamic Probe apparatus which drives lined steel tubes into the ground in 1m lengths. Samples are retrieved in 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. With the exception of WS71503 the holes were not cased and progress depended on the nature of the strata penetrated. WS71503 was cased to 2.00m to facilitate a falling head permeability test (see Section 5.6).

No groundwater was observed during sampling. On completion, each borehole was backfilled with a combination of arisings and grout as detailed on the individual records.

5.5 Trial Pits

Twenty (20 No.) Trial Pits were excavated to depths varying between 2.50m and 3.50m bgl using either a 13 or 15 tonne tracked excavator between the 3rd and 18th September 2019. This work was supervised on site by a geotechnical engineer.

The profiles of strata or other features were recorded as excavation proceeded and measurements taken from ground level. Representative samples, including Environmental samples (ES), were taken for laboratory examination and analysis at the depths indicated on the Trial Pit Records. 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.

5.6 In Situ Permeability Tests

Four (4 No.) in situ Packer Permeability Tests were undertaken in Borehole R71811 in accordance with *BS EN ISO 22282-3:2012* using a single packer configuration during a pause in the drilling operations over the following depth ranges:-

Test No.	Test Section (m bgl)
1	4.00 to 7.00
2	4.25 to 7.00
3	10.00 to 13.00
4	16.00 to 19.00

Tests 1 and 2 were aborted as a seal could not be obtained using the packers in the test sections. The details of each of the tests are presented in Appendix 7.

Twenty (20 No.) in situ Falling Head Permeability tests were undertaken during a pause in the drilling operations in accordance with *BS EN ISO 22282-2:2012* within the exploratory holes and test sections listed below:-

Exploratory Hole	Test Section (m bgl)
R71208 (3 tests)	3.50-4.00
R71211 (3 tests)	1.30-3.00
R71213 (3 tests)	5.00-6.50
R71803 (3 tests)	7.70-9.20
R71807 (3 tests)	7.00-9.10
R71815 (3 tests)	8.00-8.93
R71819 (1 test)	33.70-45.70
WS71503 (1 test)	2.00-4.00

The test locations were specified by the Investigation Supervisor. The test data is presented in Appendix 7.

5.7 Geophysical Testing

Geophysical testing, comprising caliper logging followed by an optical televiewer survey, was carried out by European Geophysical Services Ltd in Borehole R71202. On completion the borehole was flushed with clean water and left to settle for minimum of 48 hours to allow for fine sediment settlement before the geophysical testing commenced. The work was carried out on the 16th September 2019. The European Geophysical Services Ltd report on the geophysical logging is presented in Appendix 8 and includes testing on two boreholes (R71901 and R71903) undertaken during a previous phase of investigation (see Geotechnics report A303 Amesbury to Berwick Down - Phase 7a (i), PC197510, September 2019).

5.8 PID Meter Readings

Photo-ionisation detection (PID) tests were undertaken by testing the headspace of each of the ES soil samples taken. The tests were carried out using a suitably calibrated MiniRAE 2000 PID Meter fitted with a 10.6eV UV lamp. The results of the PID tests are presented on the individual exploratory hole records with the readings reported as Volatile Organic Compounds (VOCs) recorded in parts per million.

5.9 Plate Load Tests

Four (4 No.) Plate Load Tests were carried out by Hixtra Ltd within Trial Pits STP71101, STP71102, STP70801 and STP70802 (see Section 5.5) at 0.50m bgl. The incremental loading tests were carried out in accordance with *BS 1377-9:1990, Test 4.1* using a 300mm diameter plate. The reaction for the test was provided by a 13 or 15 Tonne excavator. The test loads were specified by the Investigation Supervisor and the results are presented in Appendix 9.

5.10 Soakaway Tests

Soakaway tests were carried out in following Trial Pits:

Trial Pit	Number of Tests	Depth (m)
STP71402	1	3.50
STP71404	1	3.50
STP71603	1	3.50
STP72701	3	2.70
STP72702	2	2.60
STP72703	3	2.50
STP72704	1	2.60
STP72705	3	2.45

The tests were undertaken in accordance with the method given in *BRE Digest 365 "Soakaway Design", 2016*. The Digest requires the test to be repeated three times at each location. However, due to the slow soakage of the water from some of the test pits it was only possible to carry out either a one or two tests in the time allowed for the tests. The results of the tests are presented in Appendix 10.

6.0 LABORATORY TESTING

6.1 Geotechnical

The laboratory testing schedule was specified by the Investigation Supervisor in order to relate to the proposed development. Most of 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 11. 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

135 No. Water Content Determination

BS EN ISO 17892-3:2015

5.1 3 No Particle Density by Fluid Pycnometer

BS EN ISO 17892-4:2016

5.2 24 No. Particle Size Distribution Determination – Sieving Method

5.4 24 No. Particle Size Distribution Determination – Pipette Method

BS EN ISO 17892-12:2018

8 No. Liquid Limit and Plastic Limit

BS 1377:1990

Test No.		Test Description
Part 2		
3.3	187 No.	Saturation Moisture Content of Chalk
Part 4		
3.3	6 No.	Dry Density/Moisture Content relationship determination. Compaction Test - British Standard (2.5 kg Hammer)
5.5	7 No.	Moisture Condition Value Calibration Tests
6	54 No.	Chalk Crushing Value Determination

ISRM Testing Methods

74 No. Point Load Determination

The following testing was carried out at the laboratories of GEOLABS Limited (UKAS Accredited Laboratory, Number 1982).

BS 1377:1990

Test No.		Test Description
Part 2		
3.3	2 No.	Saturation Moisture Content of Chalk
Part 4		
6	5 No.	Chalk Crushing Value Determination

BS EN ISO 17892-4:2016

5.2 1 No. Particle Size Distribution Determination – Sieving Method

ISRM Testing Methods

67 No. Unconfined Compressive Strength Determination

8 No. Unconfined Compressive Strength Determination with Young's Modulus and Poisson's Ratio

23 No. Slake Durability Index Determination

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

2 No. Asbestos screens

BRE Special Digest 1 Suite

34 No. Suites comprising Soluble Sulphate and pH

The results of the geotechnical testing are presented in Appendix 11.

6.2 Contamination

Selected samples of soil and groundwater were tested at the laboratories of Derwentside Environmental Testing Services for a number of determinands in order to check on potential site contamination. In addition, a number of leachate samples were also prepared from selected soil samples in accordance with the leachate methodology in BS EN 12457-1.

The sample and determinands were specified by the Investigation Supervisor and are detailed on the results sheets in Appendix 12 together with the test result, test method, accreditation and detection limit.

Signed for and on behalf of Geotechnics Limited.

Prepared by:

Clive Lange
BSc
Senior Engineer

Reviewed by:

Trevor N Hardie
BSc,MSc,DIC,CEng,MICE.
Chief Geotechnical Engineer

APPENDIX I

The Brief

1.5 Scope of investigation

1.5.1 A brief outline of the proposed ground investigation works is summarised below and is covered in more detail within Schedule 2 for Phase 7A.i & Phase 7A.ii and Phase 7B. A detailed outline of the investigation areas can be found within the following drawings:

Phase 7a Drawings HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0200 to HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0207 and HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0209; and,

Phase 7b Drawings HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0300 to HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0307.

- Archaeology and Ecology surveys will be conducted before and during and works, which will be managed by the Investigating Supervisor;
- Boreholes advanced using window sampling, cable percussive and rotary coring techniques;
- Shallow hand and machine excavated trial pits;
- Deep shored machine excavated trial pits;
- In situ geotechnical testing including high-pressure dilatometer testing and downhole wireline logging;
- In situ hydrogeological testing including large diameter pump testing, Packer testing, variable and constant rate permeability tests and soakaway testing in accordance with BRE 365;
- Soil, rock and groundwater sampling for geotechnical and geoenvironmental laboratory testing purposes;
- Construction of groundwater monitoring wells, including the supply, installation, maintenance and handover of automated logging systems;
- Logging of soils and rock in accordance with BS5930:2015 and CIRIA C574 as appropriate; and
- Laboratory geotechnical testing and chemical analysis.

1.5.2 The sections below set out the proposed scope of investigation within Phases 7A.i & 7A.ii, and Phase 7B, for specific areas. General requirements for the ground investigation are set out within Schedules 1 to 4 and more detail is provided within Schedule 5 and Annexes A to G.

1.5.3 **Groundwater Level Monitoring**

1.5.3.1 The hydrogeological investigation includes several boreholes installed as groundwater monitoring boreholes.

1.5.3.2 2No. monitoring boreholes (R71901 & R71903) are required near the tunnel alignment, but at locations that will not be affected by the proposed tunnel boring. This is to collect long-term data to provide baseline water levels and assess the impact of the tunnel on the surrounding area.

1.5.4 Groundwater level monitoring boreholes should be constructed as described in Section 4.5.

1.5.5 Types of exploratory hole, sampling and in situ testing

1.5.5.1 Cable Percussion boreholes

- Cable percussion boreholes shall generally be in accordance with Section 5 and Schedule 1.
- SPTs shall be carried out in accordance with Clause 1.15.1.1.

1.5.5.2 Rotary boreholes

- Rotary cored boreholes shall generally be in accordance with Section 5 and Schedule 1.
- Cored holes shall include discontinuity logging.
- Where core recovery is not required, rotary open-hole drilling techniques may be used in strict agreement with the Investigation Supervisor.

1.5.5.3 Trial pits

- Trial pits shall generally be in accordance with Section 5 and Schedule 1.
- Excavations to be protected against unauthorised entry.
- No personnel to enter trial pit excavations; except in the case of the deep trial pits indicated in 1.11.10.2.

1.5.5.4 Permeability testing

- Falling head permeability tests shall be in accordance with Annex E1.
- Packer tests shall be in accordance with Annex E3 or E4.

1.5.5.5 Downhole geophysical testing

- Downhole geophysical logging shall be undertaken in accordance with Annex D5.

1.5.6 Groundwater monitoring

1.5.6.1 Standpipes shall be installed in the boreholes identified in Schedule 2 in accordance with the requirements for monitoring wells given in Annex E5 in order to monitor groundwater levels following the ground investigation fieldwork (long-term monitoring).

1.5.6.2 Monitoring wells associated with the aquifer pump tests shall be monitored using automated water level logging instrumentation in order to provide a continuous record of aquifer (and other strata) response during the tests.

1.5.6.3 Specified standpipes/monitoring wells shall be monitored over a longer term using automated level logging instrumentation linked to a telemetry system in accordance with Annex E5. The Ground Investigation Contractor shall be responsible for contracting In situ Ltd for the supply, commissioning and operation of the monitoring system for the duration of the ground investigation contract and then handover the complete system to Highways England on completion of the contract.

1.5.7 Pumping tests

1.5.7.1 Pumping tests were conducted during a previous phase of investigation (Phase 6) in 2018. Further pumping tests will be carried out during Phase 7B within an existing pumping well (W617). Existing groundwater monitoring wells installed during Phase 6 will be used to monitor the water levels throughout the pump test.

1.5.7.2 A further pumping test, which would include the formation of a further large diameter pumping well and additional surrounding groundwater monitoring wells may also be needed during the Phase 7 works. These works are still to be confirmed.

1.5.7.3 The pumping test will be carried out as outlined in Annex E5.

1.5.8 **Water quality**

1.5.8.1 Water samples shall be collected during aquifer pumping tests and from standpipes/monitoring wells. The samples shall be tested at a UKAS accredited laboratory in accordance with Section 1.20 and Annex F.

1.5.9 Laboratory testing

1.5.9.1 Laboratory testing is expected to comprise index tests, strength tests, and chemical tests.

Geotechnical Soil Laboratory Testing

1.5.9.1.1 Classification:

- Natural moisture content
- Bulk and dry densities
- Atterberg limits
- Particle size distributions.

1.5.9.1.2 Strength:

- Unconsolidated-undrained triaxial compression with single-stage loading no porewater measurement
- Consolidated-drained triaxial compression with measurement of volume change
- Direct shear box.

1.5.9.1.3 Compressibility:

- One-dimensional consolidation.

Geotechnical Rock Laboratory Testing

1.5.9.1.4 Classification:

- Natural and saturated moisture contents
- Bulk, intact dry and particle densities
- Particle size distributions (structureless chalk only).

1.5.9.1.5 Strength:

- Uniaxial compressive strength
- Point load
- Direct shear box (on natural discontinuity and saw-cut surfaces)
- Consolidated-drained triaxial compression with measurement of volume change
- Indirect tensile strength by Brazilian test.

1.5.9.1.6 Compressibility:

- Uniaxial compressive strength with measurement of deformability and Poisson's ratio.

Chemical Testing

- BRE SD1 (pH, water soluble sulphate, total sulphate content, total sulphur)
- Organic matter
- Total phosphorus content

- Extractable phosphorus content.

Earthworks Classification

- 10% fines value
- Optimum moisture content
- Laboratory California Bearing Ratio on remoulded samples (at each compaction sequence, soaked and unsoaked)
- Chalk crushing value
- Slake durability
- Cerchar abrasivity value
- Frost susceptibility
- Moisture condition value.

1.5.10 Conformation of borehole and trial pit locations

1.5.10.1 The locations of exploratory holes for Phases 7A and Phase 7B are shown on Drawings:

- HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0200 to HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0207 and HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0209; and
- HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0300 to HE551506-AMW-HGT-SW_ML_M00_Z-DR-CE-0307.

The locations will generally be confirmed two weeks prior to commencement of the works.

Table 2-2 Phase 7A.ii Works

Phase 7A.ii Area No.	Proposed Works / Areas of Interest	Hole No.	Easting (m)	Northing (m)	AGS Hole Type	Target Depth (mbgl)	Primary Purposes	Env'tl Sample (Y/N)	In situ Testing [1]	Particular Geotechnical Sampling / Lab Testing [2]	Remarks
1	Cuttings	STP70101	405809	140726	TP	3.5	To investigate chalk grades and properties; discontinuity spacings, dip directions and angles; groundwater conditions for cutting design. To investigate excavated materials geotechnical and chemical properties and re-use potential.				
		STP70102	405877	140701							
8	Embankments	STP70801	407678	141494	TP	3.5	To investigate the depth and nature of the underlying structureless chalk and its compressibility for embankment design.	Y	PLT	Compressibility testing of natural superficial deposits and chalk.	PLT in the uppermost natural stratum.
		STP70802	407941	141468							
11	Embankments	STP71101	408576	141346	TP	3.5	To investigate the depth and nature of the underlying structureless chalk and its compressibility for embankment design.	N	PLT	Compressibility testing of structureless chalk	PLT in structureless chalk.
		STP71102	408628	141336							
12	Longbarrow Junction (incl. cuttings, slip roads and roundabouts)	R71201	409071	141234	RC	15	To undertake exploratory holes local to the proposed route alignment to depth	Y			Environmental sampling is required to target a historical barn.
		R71202	409173	141267				Y	DHG (Suite B)		

Phase 7A.ii Area No.	Proposed Works / Areas of Interest	Hole No.	Easting (m)	Northing (m)	AGS Hole Type	Target Depth (mbgl)	Primary Purposes	Env'tl Sample (Y/N)	In situ Testing [1]	Particular Geotechnical Sampling / Lab Testing [2]	Remarks
		R71204	409473	141265			below proposed road level.				
		R71205	409623	141274							
		R71206	409772	141289							
		R71207	409872	141267							
		R71208	409214	141318					FHP		FHP for drainage design.
		R71209	409374	141385				N			
		R71211	409280	141205							
		R71212	409385	141140							
		R71213	409495	141202					FHP		FHP for drainage design.
14	A360 Northbound Link Road	STP71401	409430	141454	TP	3.5	Areas have not been investigated before. To undertake exploratory holes local to the proposed route alignment to depth below proposed road level. To investigate chalk grades and properties; discontinuity spacings, dip directions and angles; groundwater conditions for cutting design.	Y			
		STP71402	409564	141578					Soakaway		Pit soakaway for drainage design.
		STP71403	409713	141712							
		STP71404	409826	141882					Soakaway		Pit soakaway for drainage design.
		STP71405	409885	142067							
		STP71406	409875	142213							
15	A360 Southbound Link Road	WS71501	409446	141099	DS	6					
		WS71502	409582	141052							
		WS71503	409728	141016					FHP		FHP for drainage design.
		WS71504	409850	140932							
		WS71505	409929	140805							

Phase 7A.ii Area No.	Proposed Works / Areas of Interest	Hole No.	Easting (m)	Northing (m)	AGS Hole Type	Target Depth (mbgl)	Primary Purposes	Env'tl Sample (Y/N)	In situ Testing [1]	Particular Geotechnical Sampling / Lab Testing [2]	Remarks
16	New Link Road between Proposed Longbarrow Junction Roundabouts and A303	STP71602	409007	141093	TP	3.5					
		STP71603	409152	141063					Soakaway		Pit soakaway for drainage design.
		STP71604	409301	141092							
18	Retaining Walls	R71802	410076	141324.5	RC	45	To acquire local strength and stiffness parameters. To investigate excavated materials geotechnical and chemical properties and re-use potential. To target geoenvironmental sampling and testing at potential contamination sources.	Y			
		R71803	410098	141365					SPT FHP		FHP for drainage ditch design.
		R71804	410157	141351							
		R71806	410247	141408							
		R71807	410348	141413					FHP		FHP for central reserve linear infiltration tank design.
		R71808	410386	141387							
		R71810	410454	141448							
		R71811	410524	141429		50			SPT Packer (single)		
		R71812	410548	151519		45					
		R71814	410663	141496							
		R71815	410661	141563							
		R71816	410736	141542							
		R71818	410819	141601							
		R71819	410884	141606					FHP		FHP for central reserve linear infiltration tank design.
		R71820	410949	141571							

Phase 7A.ii Area No.	Proposed Works / Areas of Interest	Hole No.	Easting (m)	Northing (m)	AGS Hole Type	Target Depth (mbgl)	Primary Purposes	Env'tl Sample (Y/N)	In situ Testing [1]	Particular Geotechnical Sampling / Lab Testing [2]	Remarks
27	General	STP72701	407489	141588	TP	2.5	To investigate the soil/rock infiltration parameters for design of drainage features that are located further away from the proposed mainline.	N	Soakaway		
		STP72702	407607	141312							
		STP72703	407988	141377							
		STP72704	408351	141603							
		STP72705	408886	141206							

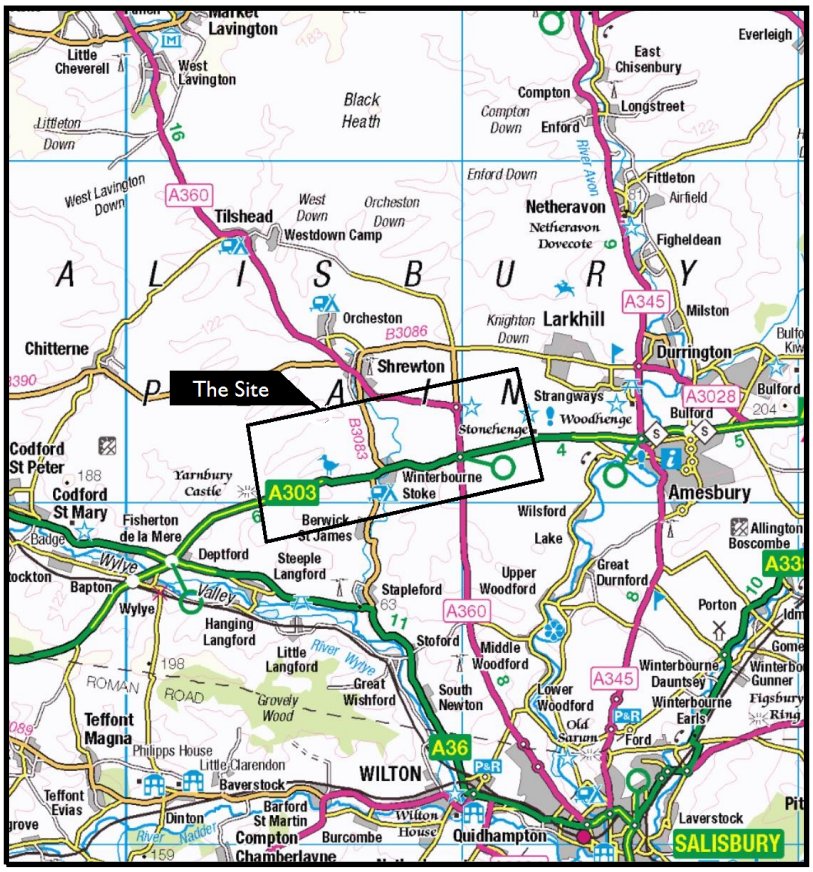
Note:

1. PLT = Plate Load Test; Soakaway = Pit soakaway; DHG = Downhole Geophysical Logging; SPT = Standard Penetration Test; HPD = High Pressure Dilatometer; FHP = Falling Head Permeability; RHT = Rising Head Test; PMT = Pressuremeter Testing; UT100 = Open Tube 100mm diameter thin walled sample.
2. Particular geotechnical laboratory testing that is required for the investigation area is indicated in this column. Other general geotechnical laboratory may also be required.

APPENDIX 2

Site Location Plan

SITE LOCATION PLAN



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Ground Investigation
at
A303 Amesbury to Berwick Down - Phase 7a (ii)
for
Highways England

GEOTECHNICS
geotechnical and geoenvironmental specialists

APPENDIX 3

Rotary Drillhole Records

DATA SHEET - Symbols and Abbreviations used on Records

Sample Types

B	Bulk disturbed sample
BLK	Block sample
C	Core sample
D	Small disturbed sample (tub/jar)
E	Environmental test sample
ES	Environmental soil sample
EW	Environmental water sample
G	Gas sample
L	Liner sample
LB	Large bulk disturbed sample
P	Piston sample (PF - failed P sample)
TW	Thin walled push in sample
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U sample)
UT	Thin wall open drive tube sampler - 102mm diameter with blows to take sample. (UTF - failed UT sample)
V	Vial sample
W	Water sample
#	Sample Not Recovered

Insitu Testing / Properties

CBRP	CBR using TRL probe
CHP	Constant Head Permeability Test
COND	Electrical conductivity
TC	Thermal Conductivity
TR	Thermal Resistivity
HV	Strength from Hand Vane
ICBR	CBR Test
IDEN	Density Test
IRES	Resistivity Test
MEX	CBR using Mexecone Probe Test
PKR	Packer Permeability Test
PLT	Plate Load Test
PP	Strength from Pocket Penetrometer
Temp	Temperature
VHP	Variable Head Permeability Test
VN	Strength from Insitu Vane
w%	Water content

(All other strengths from undrained triaxial testing)

S	Standard Penetration Test (SPT)
C	SPT with cone
N	SPT Result
-/-	Blows/penetration (mm) after seating drive
-*/- (mm)	Total blows/penetration
( )	Extrapolated value

Groundwater

Water Strike

Depth Water Rose To

Instrumentation

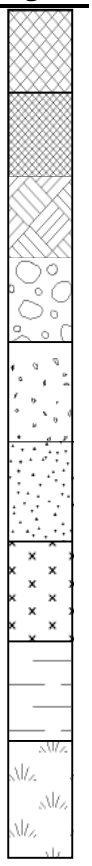
Seal

Filter

Seal

Strata

Legend



Made Ground Granular

Made Ground Cohesive

Topsoil

Cobbles and Boulders

Gravel

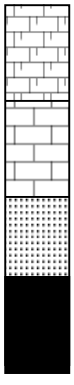
Sand

Silt

Clay

Peat

Note: Composite soil types shown by combined symbols



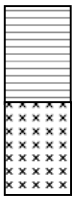
Chalk

Limestone

Sandstone

Coal

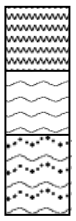
Strata, Continued



Mudstone

Siltstone

Metamorphic Rock

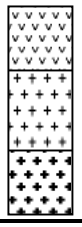


Fine Grained

Medium Grained

Coarse Grained

Igneous Rock



Fine Grained

Medium Grained

Coarse Grained

Backfill Materials

Arisings

Bentonite Seal

Concrete

Fine Gravel Filter

General Fill

Gravel Filter

Grout

Sand Filter

Tarmacadam

Rotary Core

RQD	Rock Quality Designation (% of intact core >100mm)
FRACTURE INDEX	Fractures/metre
FRACTURE SPACING (m)	Maximum Minimum
NI	Non-intact core
NR	No core recovery
AZCL	Assumed zone of core loss

(where core recovery is unknown it is assumed to be at the base of the run)

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71201
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409071.2 E, 141233.7 N	Ground Level	103.34 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (103.34)		
0.20		B				TOPSOIL: Brown slightly sandy slightly gravelly silt. Gravel is subangular to subrounded fine to coarse of chalk and flint.	0.25 (103.09)		
0.20		D							
0.20		ES							
0.20			PID=<0.1			Structureless CHALK, composed of light brown slightly sandy slightly gravelly SILT. Clasts are very weak, low and medium density, white, angular to subrounded and fine to coarse. With occasional subangular to subrounded small flint fragments (up to 50mm in size). [GRADE Dm] Below 0.35m, matrix is white.			
0.50		B							
0.50		D							
0.50		ES							
0.50			PID=<0.1						
1.00		B					1.00 (102.34)		
1.00		D				CHALK, recovered as very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low and medium density, white with occasional black specks and rare orangish brown surface staining. Matrix is light brown. With occasional angular to subangular small and medium flint fragments (up to 60mm in size).			
1.00		ES							
1.00			PID=<0.1						
1.20- 2.50	1.20	69 7		0	(NI)	Between 1.20-1.29m, intact section of core. At 1.35m, with occasional angular to subangular small and medium flint fragments (up to 60mm in size). At 1.50m, with occasional angular to subangular small flint fragments (up to 30mm in size).			
						Between 2.00-2.10m, with rare angular to subangular small and medium flint fragments (up to 90mm in size).			
					(AZCL)	Between 2.10-2.50m, assumed zone of core loss.			
2.50- 4.00	2.50	67 47	0.20 0.09	19	(NI)	Very weak, medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 0-20 degrees, closely to widely spaced (90/300/660), clean, rarely infilled (0/0/1) with comminuted chalk, stepped or planar and rough with many black specks and occasional orangish brown surface staining.	2.50 (100.84)		1
2.68- 2.78		C			(4)	Set 2 are 40-60 degrees, very closely to medium spaced (30/210/480), clean or infilled (0/0/8) with comminuted chalk or sheet-flints, stepped or undulating and rough with many black specks and occasional orangish brown surface staining.			1 2
					(NI)	Set 3 are 80-90 degrees, clean, rarely infilled (0/0/1) with grey marl, stepped and rough with many black specks and occasional orangish brown surface staining. [Grade A2/3]			2
					(10)	Between 2.50-2.58m, non intact, recovered as angular to subangular fine to coarse gravel.			3
					(NI)	Between 3.10-3.20m, with many angular to subangular small flint fragments (up to 50mm in size). Between 3.20-3.40m, non intact, recovered as angular to subangular fine to coarse gravel. Between 3.50-4.00m, non intact, recovered as angular to subangular fine to coarse gravel and cobbles.			
4.00- 5.50	4.00	100 45	0.11 0.08	23	(3)				
						Between 4.40-4.50m, with occasional angular to subangular small flint fragments (up to 50mm in size).			3
					(NI)	Between 4.50-4.93m, non intact, recovered as angular to subangular fine to coarse gravel and cobbles.			3

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.25	0.50	Inspection Pit	Arch	G.L.			04/09/19	08:00						None observed during drilling, possibly masked by flush.
1.20	0.50	Inspection Pit	AW/KH	0.25	NIL	DRY	04/09/19	18:00						
16.00	0.12	Geobor S	AW/KH	0.25	NIL	DRY	05/09/19	08:00						
				1.20	NIL	DRY	05/09/19	18:00						
				1.20	NIL	DRY	06/09/19	08:00						
				16.00	16.00	DRY	06/09/19	18:00						

Remarks

Inspection pit hand excavated to 0.25m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.
All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 1 of 4
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71201
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409071.2 E, 141233.7 N
Ground Level: 103.34 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(7)				3 3
					(NI)	Between 5.20-5.50m, non intact, recovered as angular to subangular fine to coarse gravel.			
5.50- 7.00	5.50	100 70	0.22 0.10	55		Between 5.50-5.69m, discontinuity inclined 75 degrees, clean, undulating and rough with many black specks.			1
5.96- 6.15		C			(4)				1
						Between 6.15-6.17m, discontinuity inclined 25 degrees, clean, stepped and rough with many black specks and occasional orangish brown surface staining. Between 6.40-6.50m, discontinuity inclined 70 degrees, clean, stepped and rough with many black specks.			3 3 2
7.00- 8.50	7.00	97 72	0.24 0.03	16					1 2 2 2
7.56- 7.63		C			(7)				1 2 2 1
					(NI)	Between 8.35-8.50m, non intact, recovered as angular to subangular fine to coarse gravel.			1
8.50-10.00	8.50	95 60	0.49 0.10	27	(5)	Between 8.70-8.77m, with many angular to subangular small and medium flint fragments (up to 80mm in size).			2 2
					(15)	Between 8.77-8.83m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining.			2
					(NI)	Between 8.90-8.98m, with rare angular to subangular small and medium flint fragments (up to 80mm in size).			3
					(7)	Between 8.98-9.12m, non intact, recovered as angular to subangular fine to coarse gravel.			1
9.56- 9.72		C			(3)	Between 9.24-9.26m, with many orangish brown relic sponge traces (up to 10mm in size).	9.40 (93.94)		
					(NI)	Very weak, medium density, white with occasional black specks CHALK. Discontinuities are: Set 1, are 0-20 degrees, closely to widely spaced (110/320/830), clean, rarely infilled (0/0/1) with grey marl, undulating or stepped and rough with many black specks and occasional orangish brown surface staining.			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-16.00m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 2 of 4
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71201** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **409071.2** E **141233.7** N Ground Level **103.34** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	10.00	100 69	0.25 0.02	33	(7)	Set 2 are 30-40 degrees, closely to medium spaced (140/200/310), clean, rarely infill (0/0/1) with grey marl, undulating or stepped and rough with many black specks and rare orangish brown surface staining. [GRADE A2] Between 9.72-10.00m, non intact, recovered as angular to subangular fine to coarse gravel. Between 10.46-10.53m, discontinuity inclined 60 degrees, clean, stepped and rough with many black specks and occasional orangish brown surface staining. Between 10.92-11.13m, discontinuity inclined 90 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining.			2 1 2 1 1 1
					(NI)	Between 11.13-11.18m, with rare angular to subangular small and medium flint fragments (up to 70mm in size). Between 11.18-11.50m, non intact. recovered as angular to subangular fine to coarse gravel and cobbles.			
11.50-13.00	11.50	82 57	0.25 0.06	27	(7)	Between 11.69-11.83m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 11.86-12.00m, discontinuity inclined 80 degrees, clean, stepped and rough with many black specks and occasional orangish brown surface staining.			2 1
12.25-12.50		C			(NI)	At 12.00m, with orangish brown relic sponge trace (6mm in size).			
					(2)	Between 12.05-12.10m, with rare angular to subangular small flint fragments (up to 30mm in size). Between 12.10-12.23m, non intact, recovered as very silty angular to subangular fine to coarse gravel. At 12.68m, with rare angular to subangular small flint fragments (up to 30mm in size).			1
					(AZCL)	Between 12.73-13.00m, assumed zone of core loss.			
13.00-14.50	13.00	100 97	0.29 0.12	80	(4)	At 13.66m, with a grey marl seam (<1mm thick). Between 13.69-13.77m, discontinuity inclined 50 degrees, clean, stepped and rough with many black specks.			1 1 2 2 2
14.50-16.00	16.00	100 95	0.22 0.17	80		At 14.45m, with a grey wispy marl seam (3mm thick). At 14.56m, with a horizontal grey wispy marl seam (4mm thick). At 14.73m, with a subangular small flint fragments (30mm in size). At 14.85m, with an orangish brown relic sponge trace (10mm in size).			1 1 1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **SI**
Checked by **CPL**
Figure **3 of 4**
27/03/2020

geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71201**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **409071.2** E **141233.7** N
Ground Level **103.34** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	**Between 15.10-15.18m, with occasional angular to subangular small flint fragments (up to 40mm in size).**			
15.40-15.62		**C**			(4)	**At 15.50m, with a subhorizontal grey wispy marl seam (6mm thick).** **At 15.66m, with rare orangish brown relic sponge traces (up to 10mm in size).** **At 15.80m, with many orangish brown relic sponge traces (up to 12mm in size).**			1 2 2
						End of Borehole	**16.00 (87.34)**		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
Checked by **CPL**
Figure **4 of 4**
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71202
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409175.4 E 141270.9 N	Ground Level	104.35 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (104.35)		
0.20		B				**TOPSOIL: Brown slightly sandy slightly gravelly silt. Gravel is subangular to subrounded fine to coarse chalk and flint.**			
0.20		D							
0.20		ES					0.30 (104.05)		
0.20			PID=<0.1			**Structureless CHALK, composed of light brown slightly sandy slightly gravelly SILT. Clasts are very weak, low to medium density, white, angular to subangular and fine to coarse. With occasional subangular to subrounded small flints (up to 50mm in size).**			
0.50		B				**[GRADE Dm]**			
0.50		D							
0.50		ES							
0.50			PID=0.8						
1.00		B							
1.00		D							
1.00		ES							
1.00			PID=0.8				1.20 (103.15)		
1.20- 2.50	1.20	58 0			(NI)	**CHALK, recovered as very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density and white with rare black specks. Matrix is cream. Between 1.20-1.40m, with many angular to subangular small flint fragments (up to 50mm in size). Below 1.40m, slightly silty. Between 1.80-1.90m, with many orangish brown relic sponge traces (up to 30mm in size). Between 1.90-1.95m, very silty. With many angular small flint fragments (up to 50mm in size). Between 1.95-2.00m, assumed zone of core loss.**			
					(AZCL)				
2.50- 4.00	2.50	100 60	0.17 0.03	21	(NI)				
						Extremely weak and very weak, low and medium density, white with rare black specks CHALK. Discontinuities are Set 1 are 80-90 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks and rare orangish brown surface staining. Set 2 are 0-10 degrees, closely to medium spaced (90/175/340), clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks are occasional orangish brown surface staining. Set 3 are 45-50 degrees, clean or infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks. [GRADE A3] Between 3.06-3.19m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks. Between 3.46-3.51m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 3.84-3.90m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks. Between 4.00-4.15m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular to subangular small and medium nodular flint fragments (up to 80mm in size) (flint burrows) Between 4.15-4.28m, non intact, recovered as silty angular to subangular fine to coarse gravel. At 4.25m, with a subrounded small nodular flint (40mm in size) with a 1mm thick cortex stained orangish brown in places. Between 4.284.35m, discontinuity inclined 20 degrees, clean, undulating and rough with occasional black specks.	2.70 (101.65)		
					(11)				
3.94- 4.00		C							
4.00- 5.50	4.00	87 45	0.12 0.04	8	(NI)				
					(14)				

Drilling

Depth	Hole Dia	Technique	Crew
0.30	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AW/PB
16.00	0.12	Geobor S	AW/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			04/09/19	08:00
0.30	NIL	DRY	04/09/19	18:00
0.30	NIL	DRY	11/09/19	08:00
16.00	16.00	DRY	11/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
On completion of the borehole the casing was removed and Downhole Geophysical Logging was undertaken before backfilling.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by LC
Checked by CPL
Figure 1 of 4
27/03/2020

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71202
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409175.4 E 141270.9 N	Ground Level	104.35 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 4.30-4.43m, discontinuity inclined 75 degrees, clean, undulating and rough with occasional black specks. At 4.40m, with occasional orangish brown relic sponge traces (up to 10mm in size).			3 3
					(AZCL)	Between 4.80-4.88m and 5.12-5.33m, non intact, recovered as angular to subangular fine to coarse gravel.			
5.50- 7.00	5.50	80 43	0.14 0.05	23	(NI)	Between 5.30-5.50m, assumed zone of core loss. Between 5.50-5.85m, non intact, recovered as slightly silty angular to subangular fine to coarse gravel.			
					(13)	At 5.65m, with many angular to subrounded medium nodular flint fragments (up to 70mm in size).			1
					(NI)	At 5.83m, with a subrounded small nodular flint (50mm in size) with a 1mm thick cortex. Between 6.00-6.16m, non intact, recovered as angular to subangular fine to coarse gravel.			2 1
					(9)				3 1
6.55- 6.62		C							1
					(NI)	Between 6.62-6.70m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts with occasional orangish brown relic sponge traces (up to 10mm in size).			
					(AZCL)	Between 6.70-7.00m, assumed zone of core loss.			
7.00- 8.50	7.00	100 80	0.18 0.06	12	(NI)	Between 7.00-7.29m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content.			
					(9)	Between 7.55-7.60m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks.			2 2 2 2 1
							7.95 (96.40)		
					(10)	Weak, medium density, white with rare black speck CHALK, with many orangish brown relic sponge traces (up to 40mm in size). Discontinuities are 0-5 degrees, closely spaced (60/70/80), clean (0/0/0), undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE A3]			1 1 1 1
					(NI)	Between 8.15-8.45m, discontinuity inclined 90 degrees, clean, undulating and rough with many black specks.			
8.50-10.00 8.50- 8.70	8.50	100 70 C	0.30 0.04	36		Between 8.45-8.50m, non intact, recovered as angular to subangular fine to coarse gravel.			1
					(5)	Between 8.82-8.88m, discontinuity inclined 45 degrees, clean, undulating and rough with occasional black specks and much orangish brown surface staining. Between 8.90-8.95m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks and orangish brown surface staining.			
					(NI)	Between 8.94-9.08m, discontinuity inclined 80 degrees, clean, undulating and rough with many black specks and orangish brown surface staining. At 9.15m, with many subangular to subrounded small flint fragments (up to 40mm in size).	9.25 (95.10)		
					(6)	Weak, low and medium density, white with rare black specks CHALK. Discontinuities where seen are: Set 1 are 0-5 degrees, very closely to medium spaced (40/150/400), clean or infilled (0/0/2) with comminuted chalk, undulating, rarely stepped and rough with many black specks and occasional			3 1
					(NI)				

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS

Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-16.00m, Air/Mist, 100% return.

Logged by LC
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Figure 2 of 4
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71202 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 409175.4 E, 141270.9 N | Ground Level: 104.35 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	10.00	100 75	0.33 0.04	25	(7)	orangish brown surface staining. Set 2 are 45-50 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks and rare orangish brown surface staining. Set 3 are 80-90 degrees, clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining. [GRADE A3] Between 9.25-9.34m, non intact, recovered as angular fine to coarse gravel with rare angular small flint fragments (up to 10mm in size). At 9.40m, with occasional angular small flint fragments (up to 15mm in size). At 9.65m, with rare orangish brown relic sponge traces (up to 5mm in size). Between 9.72-9.75m, non intact, recovered as angular medium gravel. Between 9.80-9.90m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining.			1 1 1 1 2 2 2
					(8)				
					(NI)				
11.50-13.00	11.50	83 60	0.17 0.08	33	(7)	Between 9.90-10.00m, non intact, recovered as angular to subangular fine to coarse gravel with a subangular cobble. At 10.20m, with a subrounded finger flint (60mm in length). At 10.30m, with angular small flint fragments (10mm in size). At 10.50m, with occasional orangish brown relic sponge traces (up to 15mm in size). Between 10.88-10.93m, discontinuity inclined 20 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks. Between 11.15-11.22m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining.			1 3 1 1 1 2
					(NI)				
					(7)				
12.30-12.45		C							
					(NI)	Between 11.22-11.50m, non intact, recovered as angular to subangular fine to coarse gravel. Clast with occasional orangish brown relic sponge traces (up to 10mm in size). At 11.45m, with a orangish brown relic sponge traces (5mm in size). At 11.60m, with rare orangish brown relic sponge traces (up to 10mm in size). Between 11.65-11.72m, non intact, recovered as silty subangular to subrounded fine to coarse gravel.			
					(0)				
					(AZCL)				
13.00-14.50	13.00	97 88	0.40 0.09	57	(NI)	Between 12.45-12.57m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular small flint fragments (up to 30mm in size). Between 12.75-13.00m, assumed zone of core loss. Between 13.00-13.10m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 13.22-13.33m, discontinuity inclined 70 degrees, clean, undulating and rough with occasional black specks.			3 1 1 1 1
					(4)				
					(NI)	Between 14.37-14.50m, non intact, recovered as angular coarse gravel with a subangular cobble.			
14.50-16.00	14.50	73 57	0.25 0.08	47	(3)	Between 14.70-14.74m, non intact, recovered as silty angular to subangular fine to coarse gravel. With rare angular small flint fragments (up to 35mm in size).			2 3

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 3 of 4
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geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71202
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409175.4 E 141270.9 N	Ground Level	104.35 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
15.23-15.47		C				Below 15.15m, with many orangish brown sponge bed traces (up to 30mm in size). Between 15.23-15.47m, extremely weak.			3 1
					(NI) (AZCL)	Between 15.56-15.60m, non intact, recovered as very silty angular to subangular gravel. Clasts with occasional orangish brown relic sponge traces (up to 20mm in size). With occasional angular small flint fragments (up to 40mm in size). Between 15.60-16.00m, assumed zone of core loss.			
						End of Borehole	16.00 (88.35)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by LC
Checked by CPL
Figure 4 of 4
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71204
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409473.1 E 141266.3 N	Ground Level	111.07 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (111.07)		
0.20		B				TOPSOIL: Brown slightly gravelly silt. Gravel is subangular to subrounded fine to coarse chalk and flint.			
0.20		D							
0.20		ES							
0.20			PID=<0.1				0.45 (110.62)		
0.50		B				Structureless CHALK, composed of light brown slightly sandy slightly gravelly SILT. Clast are very weak, low and medium density, white, angular to subangular and fine to coarse. With occasional subangular to subrounded small flint fragments (up to 50mm in size) [GRADE Dm]			
0.50		D							
0.50		ES							
0.50			PID=<0.1						
1.00		B							
1.00		D							
1.00		ES							
1.00			PID=<0.1				1.20 (109.87)		
1.20- 2.50	1.20	38 0			(NI)	CHALK, recovered as cream gravelly SILT. Clasts are very weak, low density, white with rare black specks, angular to subangular and fine to coarse. With rare subangular to subrounded small and medium flints (up to 65mm in size). At 1.20m, with subangular to subrounded small and medium flint fragments (up to 70mm in size). (Flint burrow). At 1.55m, with a subangular small flint fragment (40mm in size). Between 1.70-2.50m, assumed zone of core loss.			
					(AZCL)				
2.50- 4.00	2.50	80 40	0.07 0.04	0	(NI)	Very weak, low and medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 70-85 degrees, clean or infilled (0/0/2) with comminuted chalk, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 0-10 degrees, very closely to medium spaced (20/120/270), clean or infilled (0/0/1) with comminuted chalk, undulating or stepped and rough with many black specks and occasional orangish brown surface staining. [GRADE A3] Between 2.50-2.70m, non intact, recovered as slightly silty angular to subangular fine to coarse gravel. Clasts with rare black specks and orangish brown surface staning. At 3.02m, with a subrounded small flint (40mm in size). (Burrow). Between 3.25-3.33m, discontinuity inclined 90 degrees, clean, stepped and rough with occasional black specks and orangish brown surface staining. Between 3.33-3.70m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content. Clasts with rare grey marl seems (<1mm thick). Between 3.70-4.00m, assumed zone of core loss. Between 4.00-4.12m, non intact, recovered as angular cobbles. Between 4.12-4.16m, discontinuity inclined 40 degrees, clean, undulating and rough with rare black specks and occasional grey surface staining. At 4.36m, with occasional angular to subangular small nodular flint fragments (up to 30mm in size). At 4.36m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks. Between 4.77-4.85m, non intact, recovered as very silty angular medium to coarse gravel.	2.50 (108.57)		1
2.90- 2.95		C			(13)				2 2 1 1 2 2
					(NI)				
					(AZCL)				
4.00- 5.50	4.00	100 60	0.12 0.03	15	(NI)				2 2
					(12)				2 1 1 1
					(NI)				2

Drilling

Depth	Hole Dia	Technique	Crew
0.45	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AW/PB
16.00	0.12	Geobor S	AW/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			10/09/19	08:00
0.45	NIL	DRY	10/09/19	18:00
0.45	NIL	DRY	12/09/19	08:00
16.00	16.00	DRY	12/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.45m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by LC
Checked by CPL
Figure 1 of 4
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71204
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409473.1 E 141266.3 N	Ground Level	111.07 m OD

Drilling		Properties/Sampling				Strata			Scale 1:25
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(5)	At 5.00m, with occasional angular small flint fragments (up to 50mm in size). Between 5.10-5.16m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 5.10-5.25m, with many orangish relic sponge traces (up to 10mm in size).			
					(NI)				
5.50- 7.00	5.50	90 29	0.16 0.04	19	(17)	At 5.28m, with a subhorizontal grey marl seam (2mm thick). Between 5.30-5.50m, non intact, recovered as angular to subangular fine to coarse gravel with a subangular cobble. Between 5.62-5.85m, non intact, recovered as angular to subangular fine to coarse gravel. At 5.65m, with a subangular to subrounded small flint fragment (40mm in size). At 5.79 and 5.85m, with occasional angular small nodular flint fragments (up to 50mm in size). Between 5.87-5.96m, discontinuity inclined 90 degrees, clean, undulating and rough with occasional black specks. Between 6.10-6.20m, none intact, recovered as angular fine to coarse gravel. Clasts with rare orangish brown relic sponge traces (up to 10mm in size). Between 6.40-6.71m, non intact, recovered as very silty angular to subrounded fine to coarse gravel with a low subangular cobble content. With many subangular to subrounded small and medium nodular flints and sheet flints (up to 70mm in size). Between 6.71-6.85m, with a subangular to subrounded flint cobble with a 2mm thick cortex. Between 6.85-7.00m, assumed zone of core loss.			
					(NI)				
					(12)				
6.20- 6.40		C			(NI)				
					(5)				
					(NI)				
					(AZCL)				
7.00- 8.50	7.00	97 80	0.31 0.04	40	(NI)		7.00 (104.07)		
					(4)	Weak, medium density, white with occasional black specks CHALK. Discontinuities where seen are: Set 1 are 80-90 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, undulating or stepped and rough with many black specks and rare orangish brown surface staining. Set 2 are 0-10 degrees, closely to medium spaced (180/240/290), clean, rarely infilled (0/0/5) with comminuted chalk, stepped and rough with many black specks. [GRADE A2] Between 7.00-7.13m, non intact, recovered as very silty angular to subrounded fine to coarse gravel. With a subangular to subrounded medium nodular flint (60mm in size). At 7.35m, shell (10mm in size) on Set 2 discontinuity. Between 8.16-8.25m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular small flint fragments (up to 40mm in size). Between 8.30-8.35m, discontinuity inclined 45 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks and occasional orangish brown surface staining. Between 8.80-8.95m, discontinuity inclined 70 degrees, clean, stepped and rough with occasional black specks. Between 8.99-9.04m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With rare angular small flint fragments (up to 10mm in size). Between 9.18-9.25m, discontinuity inclined 45 degrees, clean, stepped and rough with rare black specks and occasional orangish brown surface staining. At 9.36m, incipient discontinuity inclined 20 degrees, clean, stepped and smooth with many black specks. (opened during logging). Between 9.48-9.56m, non intact, recovered as angular fine to coarse gravel with a subangular cobble. At 9.69m, discontinuity inclined 45 degrees, clean, stepped and rough with many black specks. Between 9.90-10.00m, assumed zone of core loss.			
					(NI)				
8.50-10.00	8.50	94 60	0.15 0.05	40	(8)				
					(NI)				
					(9)				
9.50- 9.72		C			(NI)				
					(8)				
					(NI)				
					(AZCL)				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks AGS Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-16.00m, Air/Mist, 100% return.

Logged by LC
Checked by CPL
Figure 2 of 4
27/03/2020

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71204
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409473.1 E, 141266.3 N
Ground Level: 111.07 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	10.00	100 71	0.26 0.07	47	(NI)	Between 9.80-9.90m, non intact, recovered as silty angular to subangular fine to coarse gravel. With occasional angular small flint fragments (up to 45mm in size). Between 10.00-10.10m, non intact, recovered as subangular to subrounded coarse gravel. At 10.10m, with a subangular small nodular flint (25mm in size). At 10.45m, with rare orangish brown relic sponge traces (up to 10mm in size). Between 10.58-10.69m, discontinuity inclined 65 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining. Between 10.80-11.20m, with occasional orangish brown relic sponge traces (up to 20mm in size). Between 11.02-11.04m, non intact, recovered as angular to subangular fine to medium gravel. Clast with rare orangish brown relic sponge traces (up to 10mm in size). Between 11.20-11.30m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks. Between 11.30-11.50m, non intact, recovered as angular to subangular fine to coarse gravel. Clast with rare orangish brown relic sponge traces (up to 10mm in size).			1 2 1
					(4)				
					(NI)				
11.50-13.00	11.50	100 87	0.32 0.05	67	(0) (NI)				1
					(3)	Between 11.60-11.73m, non intact, recovered as many angular to subangular small and medium flint fragments (up to 90mm in size), Between 12.00-12.04m, with an orangish brown relic sponge trace (30mm in size).			
12.04-12.35		C					12.04 (99.03)		
						Very weak, medium density, white with rare black specks and orangish brown mottling CHALK. Discontinuities are: Set 1 are 0-10 degrees, closely to medium spaced (70/270/600), clean or infilled (0/0/2) with comminuted chalk, undulating or stepped and rough with many black specks and occasional orangish brown surface staining. Set 2 are 80-90 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE A2] Between 12.04-12.35m, with many orangish brown relic sponge traces (up to 25mm in size).			1 2 1 1 2
13.00-14.50	13.00	97 75	0.43 0.05	67	(6)	At 12.51m, discontinuity inclined 20 degrees, clean, stepped and rough with many black specks and rare orangish brown surface staining. At 12.57m, with rare angular small flint fragments (up to 10mm in size). At 12.85m, discontinuity inclined 40 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining. Between 13.00-14.19m, with many orangish brown relic sponge bed traces (up to 50mm in size). Between 13.20-13.32m, with a subrounded medium flint (70mm in size burrow). At 13.25m, with a angular small flint (30mm in size). Between 13.47-13.54m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular small nodular flint fragments (up to 50mm in size). At 13.67m, with a subhorizontal undulating grey marl seam (1mm thick). Between 14.19-14.25m, discontinuity inclined 70 degrees, clean, undulating and rough with occasional black specks. Between 14.25-14.32m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks. Between 14.32-14.62m, non intact, recovered as angular to subangular fine to coarse gravel with a subangular cobble. At 14.62m, with occasional angular small flint fragments (up to 30mm in size).			1
13.58-13.97		C							1
					(NI)				1 1
14.50-16.00	14.50	100 68	0.26 0.06	51					1
14.84-15.04		C			(6)				1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by LC
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Figure 3 of 4
27/03/2020

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71204
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409473.1 E 141266.3 N	Ground Level	111.07 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									1
									1
									2
						Between 15.25-15.33m, with an orangish brown relic sponge bed trace (80mm in size). Between 15.40-15.55m, non intact, recovered as angular to subrounded fine to coarse gravel, with many angular to subangular small and medium nodular flints (up to 60mm in size).			1
					(NI)				
					(8)	Below 15.70m, with occasional orangish brown relic sponge traces (up to 20mm in size). Between 15.80-15.90m, non intact, recovered as angular to subangular fine to coarse gravel.			2
					(NI)				
					(10)				1
						End of Borehole	16.00 (95.07)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by LC
Checked by CPL
Figure 4 of 4
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71205
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409623.2 E, 141274.5 N	Ground Level	111.35 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (111.35)		
0.00- 0.40		B				TOPSOIL: Dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subangular fine to coarse chalk and flint.			
0.20		D							
0.20		ES							
0.20			PID=<0.1						
0.40- 0.80		B				Structureless CHALK, composed of slightly sandy silty subangular to rounded fine to coarse GRAVEL. Clasts are very weak, low density and white with rare black specks. Matrix is light brown. With occasional subangular small nodular flints (up to 30mm in size). [GRADE Dc]	0.40 (110.95)		
0.50		D							
0.50		ES							
0.50			PID=<0.1						
0.80- 1.20		B					0.80 (110.55)		
1.00		D				Structureless CHALK, composed of silty angular to subrounded medium to coarse GRAVEL. Clasts are very weak, low and medium density and white with occasional black specks. Matrix is light brown. With occasional subangular to subrounded small nodular flints (up to 45mm in size). [GRADE Dc]			
1.00		ES							
1.00			PID=<0.1				1.20 (110.15)		
1.30- 2.80	1.30	59	0.10	7	(NI)				
		47	0.01						
						CHALK, recovered as angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density and white with occasional black specks and rare orangish brown surface staining. Matrix is light brown. With rare angular to subangular small flint fragments (up to 30mm in size).	1.48 (109.87)		1
					(18)				1
						Very weak, low and medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 0-20 degrees, extremely closely to medium spaced (10/130/230), clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 80-90 degrees, clean (0/0/0), planar or stepped and rough with many black specks and occasional orangish brown surface staining. [GRADE A3] Between 1.50-1.64m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 1.57-1.61m, discontinuity inclined 50 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining. At 1.82m, with angular to subangular small flint fragments (up to 30mm in size). Between 1.93-2.00m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. At 2.00m, with orangish brown relic sponge traces (up to 3mm in size). Between 2.19-2.80m, assumed zone of core loss. Between 2.89-2.91m, discontinuity inclined 30 degrees, clean, planar and rough with many black specks and orangish brown surface staining. Between 3.47-3.54m, discontinuity inclined 25 degrees, clean, stepped and rough with many black specks and occasional orangish brown surface staining. Between 3.85-3.93m, discontinuity inclined 50 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 4.03-4.30m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			1 1 1 1 2 1 2 1 1 2 1 1 2 1 1 2 1 2 3 2 3 3 3
					(AZCL)				
2.80- 4.30	2.80	100	0.10	5					
		7	0.02						
					(11)				
3.54- 3.64		C							
					(NI)				
4.30- 5.80	4.30	100	0.16	32			4.30 (107.05)		
		76	0.07						
					(7)				

Drilling

Depth	Hole Dia	Technique	Crew
0.40	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	SP/PB
15.00	0.12	Geobor S	SP/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			11/09/19	08:00
0.40	NIL	DRY	11/09/19	18:00
0.40	NIL	DRY	17/09/19	08:00
15.00	15.00	DRY	17/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.40m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
At 1.30m, 150mm diameter casing installed to 1.30m depth.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574,

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 1 of 3
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71205 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 409623.2 E, 141274.5 N | Ground Level: 111.35 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Set 2 are 55-70 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 3 are 80-90 degrees, clean or infilled (0/0/6) with sheet-flint, undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE B2]			3 3 2 1 2
					(NI)	Between 5.32-5.40m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, stepped, and rough with many black specks and occasional orangish brown surface staining.			
5.80- 7.30	5.80	100 45	0.13 0.06	9		Between 5.44-5.80m, non intact, recovered as angular to subangular fine to coarse gravel. Between 5.80-5.89m, with angular to subangular small and medium flint fragments (up to 60mm in size).			1 2
6.10- 6.23		C				At 6.24m, with a subhorizontal grey wispy marl seam (up to 3mm thick).			2 1 3 3 2
					(8)				
						Between 6.81-6.86m, with rare angular to subangular small flint fragments (up to 30mm in size).			1
						At 7.05m, with a grey marl seam (<1mm thick).			3 1 1 1
							7.30 (104.05)		
7.30- 8.80	7.30	92 47	0.10 0.08	27	(0)	Very weak and weak, medium and high density, white with occasional black specks CHALK.			
					(NI)	Discontinuities are:			
					(7)	Set 1, 0-20 degrees, very closely to medium spaced (40/190/320), clean or infilled (0/0/1) with comminuted chalk, stepped or planar and rough with many black specks and rare orangish brown surface staining.			1 3
					(NI)	Set 2 are 40-60 degrees, closely to medium spaced (90/200/310), clean (0/0/0), stepped and rough with many black specks and rare orangish brown surface staining.			1
					(7)	Set 3 are 80-90 degrees, clean or infilled (0/0/1) with comminuted chalk, undulating or stepped and rough with many black specks and occasional orangish brown surface staining. [GRADE A3] Between 7.33-7.54m, with many angular to subangular small to large flint fragments (up to 120mm in length).			1 3 2 2
					(AZCL)	At 7.90m, with many orangish brown relic sponge traces (up to 20mm in size). Between 7.96-8.11m, non intact, recovered as angular to subangular small and medium gravel. With			
8.80-10.30	8.80	60 30	0.11 0.06	14	(NI)	occasional angular to subangular small flint fragments (up to 60mm in size). Between 8.68-8.80m, assumed zone of core loss. Between 8.80-8.90m, non intact, recovered as angular to subangular fine to coarse gravel.			1
					(9)	At 8.84m, with occasional angular to subangular small flint fragments (up to 40mm in size). Between 8.90-9.00m, discontinuity inclined 70 degrees, clean, stepped and rough with many black specks.			
					(NI)	Between 9.10-9.14m, discontinuity inclined 35 degrees, clean, planar and rough with many black specks.			
9.58- 9.70		C			(8)	Between 9.14-9.40m, discontinuity inclined 70 degrees, clean, stepped and rough with many black specks and rare orangish brown surface staining. At 9.32m, with many orangish brown relic sponge traces (up to 10mm in size).			1
					(AZCL)	Between 9.70-10.30m, assumed zone of core loss.			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS 2002.
Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.30-15.00m, Air/Mist, 100% return.

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Figure 2 of 3
27/03/2020

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71205
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409623.2 E, 141274.5 N
Ground Level: 111.35 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 9.33-9.38m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining.			
10.30-11.80	10.30	100 77	0.16 0.12	38		Between 9.47-9.58m, with angular to subangular small and medium flint fragments (up to 80mm in size). Between 10.43-10.45m, with occasional orangish brown relic sponge traces (up to 12mm in size).			1 3
						At 10.85m, with occasional orangish brown relic sponge traces (up to 3mm in size).			1 3 1
					(7)	At 11.25m, with occasional orangish brown relic sponge traces (up to 10mm in size).			1 3 1 3 2
11.80-13.30	11.80	87 29	0.15 0.02	10					2 2 3
					(NI)				
12.26-12.41		C			(9)	At 12.27m, with a subhorizontal grey wispy marl seam (3mm thick). At 12.38m, with occasional orangish brown relic sponge traces (up to 3mm thick).			2 1 3 3
						Between 12.60-13.10m, non intact, recovered as angular to subangular fine to coarse gravel.			3
					(NI)				
						Between 13.10-13.30m, assumed zone of core loss.			
					(AZCL)				
13.30-14.80	13.30	83 58	0.22 0.18	47		Between 13.30-13.64m, with much orangish brown relic sponge traces (up to 20mm in size).			
13.30-13.52		C			(2)				2
					(NI)	Between 13.76-13.89m, with many angular to subangular small and medium flint fragments (up to 80mm in size).			
					(3)				3
						At 14.36m, with a grey marl seam (2mm thick).			1
						Between 14.19-14.55m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)	Between 14.55-14.20m, assumed zone of core loss.			
					(AZCL)				
14.80-15.00	14.80	100 100	0.20	100	(0)				
14.80-15.00		C				End of Borehole	15.00 (96.35)		

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 3 of 3
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71206
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409772.2 E 141288.9 N	Ground Level	111.05 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (111.05)		
0.00- 0.30		B				TOPSOIL: Dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subangular fine to medium chalk and flint.			
0.20		D							
0.20		ES							
0.20			PID=<0.1						
0.30- 0.70		B				Structureless CHALK, composed of cream slightly gravelly sandy SILT. Clasts are very weak, low density, white with rare black specks, angular to subangular and fine to coarse. With occasional subangular to subrounded small nodular flints (up to 45mm in size). [GRADE Dm]	0.30 (110.75)		
0.50		D							
0.50		ES							
0.50			PID=<0.1						
0.70- 1.20		B					0.70 (110.35)		
1.00		D				Structureless CHALK, composed of silty angular to subangular medium to coarse GRAVEL with many angular cobbles. Clasts are very weak, medium density, white with occasional black specks. Matrix is light brown. With rare subangular to subrounded small nodular flints (up to 35mm in size). [GRADE Dc]			
1.00		ES							
1.00			PID=<0.1						
1.20- 2.50	1.20	83	0.09	0	(NI)		1.30 (109.75)		1
		23	0.02			Very weak, low density, white with occasional black specks CHALK. Discontinuities are 0-5 degrees, very closely to medium spaced (20/90/270), clean, rarely infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE A3] Between 1.52-1.54m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, planar and rough with many black specks and occasional orangish brown surface staining. Between 1.58-1.80m, discontinuity inclined 90 degrees, clean, undulating and rough with many black specks and occasional orangish brown staining. Between 1.90-2.20m, discontinuity inclined 90 degrees, clean, stepped, and rough with many black specks and occasional orangish brown surface staining. Between 1.97-2.50m, non intact, recovered a angular to subangular fine to coarse gravel. Clast with much orangish brown staining.			1
					(16)				1
									1
									1
									1
									1
					(NI)				1
2.50- 4.00	2.50	80	0.30	47			2.50 (108.55)		
		58	0.20						
2.57- 2.65		C							
									1
					(2)	Very weak, locally weak, low and medium density, white with occasional black specks CHALK. Discontinuities where seen are: Set 1 are 0-20 degrees, closely to medium spaced (100/190/270), clean or infilled (0/0/1) with comminuted chalk, undulating or stepped and rough with many black specks and occasional orangish brown surface staining. Set 2 are 30-40 degrees, clean or infilled (0/0/1) with comminuted chalk,stepped and rough with many black specks. Set 3 are 50-70 degrees, clean (0/0/0), undulating or stepped and rough with many black specks and occasional orangish brown surface staining. Set 4 are 80-90 degrees, clean (0/0/0), stepped or undulating and rough with many black specks. [Grade A2/3] Between 3.39-3.70m, non intact, recovered as angular to subangular fine to coarse gravel. Between 3.70-4.00m, assumed zone of core loss. Between 4.00-4.15m, non intact, recovered as angular to subangular fine to coarse gravel. Between 4.15-4.30m, with angular to subangular small and medium flint fragments (up to 80mm in size).			1
					(NI)				
					(AZCL)				
4.00- 5.50	4.00	80	0.31	7					
		40	0.15		(NI)				
4.36- 4.47		C							4
									3
					(8)				1
						Between 4.70-5.00m, with occasional orangish brown relic sponge traces (up to 20mm in size). Between 4.82-5.00m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)				4
									1
									3

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.30	0.50	Inspection Pit	Arch	G.L.			11/09/19	08:00						None observed during drilling, possibly masked by flush.
1.20	0.50	Inspection Pit	RT/SP	0.30	NIL	DRY	11/09/19	18:00						
15.30	0.12	Geobor S	RT/SP	0.30	NIL	DRY	17/09/19	08:00						
				1.20	NIL	DRY	17/09/19	18:00						
				1.20	NIL	DRY	18/09/19	08:00						
				15.30	15.30	12.40	18/09/19	18:00						

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 1 of 4
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71206**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **409772.2** E **141288.9** N
Ground Level **111.05** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(15)				
						Between 5.20-5.00m, assumed zone of core loss.			
					(AZCL)				
5.50- 7.00	**5.50**	**53** **31**	**0.21** **0.10**	**14**		**Between 5.50-5.66m, non intact, recovered as angular to subangular fine to coarse gravel.** **Between 5.74-5.82m, with angular to subangular small and medium flint fragments (up to 80mm in size).**			3 2 1
					(5)				
6.00- 6.12		**C**							1
						Between 6.30-7.00m, assumed zone of core loss.			1
					(AZCL)				
7.00- 8.50	**7.00**	**97** **48**	**0.11** **0.07**	**7**		**At 7.05m, with angular to subangular small flint fragments (up to 30mm in size).**			2 3
					(4)				
						Between 7.79-7.84m, with angular to subangular small flint fragments (up to 40mm in size).			1
					(NI)				
					(8)				1 2 4
						Between 8.20-8.50m, non intact, recovered as angular to subangular fine to coarse gravel. **At 8.30m, with angular to subangular small flint fragments (up to 20mm in size).**			
					(NI)				
8.50-10.00	**8.50**	**87** **65**	**0.48** **0.03**	**50**					3 4 2 3
					(8)				
						Between 9.22-9.28m, with a subhorizontal grey wispy marl seam (3mm thick).			4 1 1
					(2)				
9.60- 9.76		**C**							
						Between 9.80-10.00m, assumed zone of core loss.			
					(AZCL)				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-15.30m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
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Figure **2 of 4**
27/03/2020

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71206** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **409772.2** E **141288.9** N Ground Level **111.05** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	**10.00**	**73** **43**	**0.14** **0.04**	**12**	**(10)**				1 3 3
					(NI)	**Between 10.30-10.40m, with angular to subangular small and medium flint fragments (up to 60mm in size).**			
					(3)	**At 10.50m, with angular to subangular small and medium flint fragments (up to 60mm in size).**			
					(NI)	**Between 10.73-10.92m, non intact, recovered as angular to subangular fine to coarse gravel.**			1 3 3
					(6)				
					(AZCL)	**Between 11.10-11.50m, assumed zone of core loss.**			2
11.50-13.00	**11.50**	**99** **53**	**0.33** **0.09**	**52**	**(0)**				
					(NI)	**Between 11.82-11.92m, with angular to subangular small and medium flint fragments (up to 55mm in size).**			
12.07-12.27		**C**							
					(3)				3 3
									2
					(NI)	**Between 12.80-13.00m, non intact, recovered as angular to subangular fine to coarse gravel.**			
13.00-14.50	**13.00**	**100** **97**	**0.27** **0.19**	**87**		**At 13.07m, and 13.16m, with many orangish brown relic sponge traces (up to 10mm in size).**			1
						Between 13.30-13.33m, with occasional orangish brown relic sponge traces (up to 10mm in size).			1
						At 13.70m, with a grey marl seam (<1mm thick).			1 1 3
					(6)	**At 14.00m, with angular to subangular small nodular flint fragments (up to 30mm in size).**			4
						Between 14.28-14.34m, with angular to subangular small and medium flint fragments (up to 60mm in size).			
14.50-15.30	**14.50**	**88** **54**	**0.24** **0.09**	**44**					
14.50-14.74		**C**							2 3

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **3 of 4**
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71206
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409772.2 E 141288.9 N	Ground Level	111.05 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						End of Borehole	15.30 (95.75)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
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Figure 4 of 4
27/03/2020

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71207 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 409872.3 E, 141267.2 N | Ground Level: 108.79 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (108.79)		
0.20 0.20		B D				TOPSOIL: Brown slightly sandy gravelly silt. Gravel is angular to subrounded fine to coarse chalk and flint.			
							0.45 (108.34)		
0.50 0.50		B D				Structureless CHALK, composed of white slightly sandy gravelly SILT. Clasts are very weak, low and medium density, white, angular to subangular and fine to coarse. Gravel is angular to subrounded small and medium flint (up to 60mm in size). [GRADE Dm]			
1.00 1.00		B D							
							1.20 (107.59)		
1.20- 2.50	1.20	73 0			(NI)	CHALK, recovered as very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density and white with rare black specks. Matrix is white. Between 1.20-1.33m, with angular to subangular small to large flint fragments (up to 123mm in length).			
2.50- 4.00	2.50	99 69	0.20 0.06	21	(10) (NI)	Very weak, low and medium density, white with rare black specks CHALK. Discontinuities where seen are: Set 1 are 0-20 degrees, closely to medium spaced (80/150/400), clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 30-45 degrees, very closely to medium spaced (50/290/360), clean stepped or planar and rough with many black specks and occasional orangish brown surface staining. [GRADE A3]	2.50 (106.29)		2 1 2
3.37- 3.43		C			(15) (NI)	Between 2.50-3.25m, discontinuity inclined 85 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 2.88-2.85m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 3.00-3.20m, non intact, recovered as angular to subangular fine to coarse gravel.			1 2 2 1 1 2
4.00- 5.50	4.00	97 39	0.32 0.08	30	(3)	Between 3.47-3.60m, discontinuity inclined 85 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. Between 3.70-3.73m, discontinuity inclined 25 degrees, clean, stepped and rough with many black specks. Between 3.73-4.00m, non intact, recovered as very silty angular to subangular fine to coarse gravel.	4.00 (104.79)		2
4.22- 4.36		C			(NI) (4) (NI)	Weak, locally very weak, low and medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 0-20 degrees, clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks. Set 2 are 50-70 degrees, clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks.			1 2 3
					(7)				1

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.45	0.50	Inspection Pit	Arch	G.L.			11/09/19	08:00						None observed during drilling, possibly masked by flush.
1.20	0.50	Inspection Pit	AW/PB	0.45	NIL	DRY	11/09/19	18:00						
16.00	0.12	Geobor S	AW/PB	0.45	NIL	DRY	18/09/19	08:00						
				16.00	16.00	DRY	18/09/19	18:00						

Remarks

Inspection pit hand excavated to 0.45m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
At 1.20m, 150mm diameter casing installed to 1.20m depth.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 1 of 4
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71207
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409872.3 E 141267.2 N	Ground Level	108.79 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Set 3 are 80-90 degrees, clean (0/0/0), stepped or undulating and rough with many black specks. Between 4.36-4.46m, with occasional angular small and medium flint fragments (up to 70mm in size). Between 4.71-4.80m, non intact, recovered as angular to subangular fine to coarse gravel. At 5.13m, with occasional orangish brown relic sponge traces (up to 3mm in size).			1 1
5.50- 7.00	5.50	95 33	0.15 0.02	10	(5)	Between 5.25-5.50m, non intact, recovered as angular to subangular fine to coarse gravel. At 5.50m, with occasional angular to subangular small flint fragments (up to 30mm in size).			2 2 3
					(NI)	Between 6.30-6.40m, with occasional angular to subangular small to large fragments (up to 100mm in size).			1 3 3
					(10)				3 3
					(NI)	Between 6.82-7.10m, with occasional angular to subangular small and medium flint fragments (up to 90mm in size).			3
7.00- 8.50 7.20- 7.35	7.00	93 75 C	0.20 0.06	40	(NI)	Very weak, medium density, white with occasional black specks, CHALK. Discontinuities are: Set 1 are 0-20 degrees, very closely to medium spaced (40/210/620), clean or infilled (0/1/6) with comminuted chalk or sheet-flints, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 50-70 degrees, clean (0/0/0), stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 3 are 80-90 degrees, clean (0/0/0), stepped or undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE B2/3] Between 7.50-7.65m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks. At 7.53m, with a grey marl seam (<1mm thick). At 8.16m, with occasional orangish brown relic sponge traces (up to 5mm in size). Between 8.31-8.50m, with occasional orangish brown relic sponge traces (up to 5mm in size).	7.00 (101.79)		1 1 1 3 1 2
8.50-10.00	8.50	95 53	0.12 0.04	30	(7)				1 2
					(15)	Between 9.21-9.30m, discontinuity inclined 35 degrees, clean, undulating and rough with many black specks. At 9.21m, with occasional angular to subangular small flint fragments (up to 50mm in size). Between 9.32-9.40m, discontinuity inclined 40 degrees, clean, stepped and rough with many black specks.			1 3 2 1 1 2 1 1 1 1 1 2 2
10.00-10.20		C							

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-16.00m, Air/Mist, 100% return.

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Figure 2 of 4
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71207** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **409872.3** E **141267.2** N Ground Level **108.79** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	**10.00**	**100 65**	**0.14 0.03**	**37**	**(0)**				
					(NI)	**Between 10.20-10.32m, with occasional angular to subangular small and medium flint fragments (up to 70mm in size).**			2
					(6)				1 3 1 1
					(NI)	**Between 11.10-11.15m, with occasional angular to subangular small flint fragments (up to 40mm in size). Between 11.15-11.50m, non intact, recovered as angular to subangular fine to coarse gravel and cobbles.**			3
11.50-13.00	**11.50**	**100 91**	**0.26 0.10**	**87**					3 1
						Between 11.85-11.96m, discontinuity inclined 45 degrees, clean, stepped and rough with many black specks.			
						At 12.16m, with a grey wispy marl seam (3mm thick).			
					(5)	**At 12.25m, with occasional angular to subangular small flint fragments (up to 30mm in size).**			1
						At 12.60m, with occasional orangish brown relic sponge traces (up to 3mm in size).			1 1 2
13.00-14.50	**13.00**	**83 63**	**0.08 0.07**	**37**	**(NI)**	**Between 13.00-13.19m, with occasional angular to subangular small to large flint fragments (up to 150mm in length).**			
						At 13.30m, with a grey wispy marl seam (3mm thick). Between 13.33-13.37m, discontinuity inclined 40 degrees, clean, stepped and rough with many black specks.			1 1 2 3
					(5)				
14.00-14.14		**C**							
					(NI)	**Between 14.15-14.25m, non intact, recovered as angular to subangular fine to coarse gravel. At 14.20m, with occasional angular to subangular small flint fragments (up to 50mm in size).**			
					(AZCL)	**Between 14.25-14.50m, assumed zone of core loss.**			
14.50-16.00	**14.50**	**100 99**	**0.32 0.09**	**67**					1
15.00-15.32		**C**							1 1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **3 of 4**
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole / Project No	R71207 / PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409872.3 E, 141267.2 N	Ground Level	108.79 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(5)				1, 2, 1, 2, 3
						End of Borehole	16.00 (92.79)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 4 of 4
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71208
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409214.9 E 141321.4 N	Ground Level	107.40 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (107.40)		
0.20		B				**TOPSOIL: Brown slightly sandy slightly gravelly silt. Gravel is subangular to subrounded fine to coarse chalk and flint.**	0.25 (107.15)		
0.20		D				**Structureless CHALK, composed of light brown slightly sandy slightly gravelly SILT. Clasts are very weak, low density, white, angular to subangular and fine to coarse. With occasional subangular to subrounded small and medium flint gravel (up to 65mm in size) [GRADE Dm]**	0.55 (106.85)		
0.50		B							
0.50		D							
1.00		B				**Structureless CHALK, composed of very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low and medium density and white with rare black specks and much orangish brown staining. Matrix is white. With occasional angular to subangular small to medium flint fragments (up to 80mm in size). [GRADE Dc]**	1.20 (106.20)		
1.00		D							
1.20- 2.50	1.20	46 0			(NI)	**CHALK, recovered a very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density and white with rare black specks and much orangish brown staining. Matrix is white. With occasional angular to subangular small to medium flint fragments (up to 80mm in size). Between 1.70-1.80m, with angular to subangular small and medium flint fragments (up to 100mm in length). Between 1.80-2.50m, assumed zone of core loss.**			
					(AZCL)				
2.50- 4.00	2.50	27 0			(10)	**Between 2.50-2.70m, flint (full diameter).**			
					(NI)				
4.00- 5.50	4.00	90 30	0.25 0.02	13			4.20 (103.20)		3
4.36- 4.45		C			(8)	**Very weak and weak, medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 60-70 degrees, clean (0/0/0), stepped or planar and rough with many black specks. Set 2 are 80-90 degrees, clean (0/0/0), stepped or undulating and rough with many black specks. Set 3 are 0-10 degrees, closely to medium spaced (70/320/570), clean or infilled (0/0/1) with comminuted chalk, undulating or stepped and rough with many black specks. [GRADE A2]**			3 2 2
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew
0.25	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AW/PB
16.00	0.12	Geobor S	AW/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			02/09/19	08:00
0.25	NIL	DRY	11/09/19	18:00
0.25	NIL	DRY	09/09/19	08:00
10.00	10.00	DRY	09/09/19	18:00
10.00	10.00	DRY	10/09/19	08:00
16.00	16.00		10/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.25m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
At 4.00m, the casing was pulled back to 3.50m to allow Falling Head Permeability tests to be undertaken.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574,

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 1 of 4
27/03/2020

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71208
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409214.9 E, 141321.4 N
Ground Level: 107.40 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(5)	Between 4.37-4.45m, discontinuity inclined 40 degrees, clean, stepped and rough with many black specks. Between 4.45-4.66m, with angular to subangular small and medium flint fragments (up to 60mm in size).			2 2 2
5.50- 7.00	5.50	93 57	0.22 0.06	13	(NI)	Between 5.50-5.78m, non intact, recovered as silty angular to subangular fine to coarse gravel.			
					(5)				3
					(8)	Between 6.20-6.22m, discontinuity inclined 30 degrees, clean, stepped and rough with many black specks.			1 1 2
6.80- 6.92		C			(NI) (2)	Between 6.50-6.80m, non intact, recovered as silty angular to subangular fine to coarse gravel. At 6.65m, with angular to subangular small flint fragments (up to 30mm in size).			
7.00- 8.50	7.00	93 63	0.20 0.02	31	(NI)	Between 7.20-7.30m, with angular to subangular small flint fragments (up to 50mm in size).			3 2
						Between 7.64-7.70m, discontinuity inclined 40 degrees, clean, undulating and rough with many black specks. Between 7.70-7.80m, discontinuity inclined 50 degrees, clean, undulating and rough with many black specks. Between 8.03-8.06m, discontinuity inclined 20 degrees, clean, stepped and rough with many black specks. At 8.12m, with angular to subangular flint fragments (up to 30mm in size). Between 8.40-8.50m, with occasional orangish brown staining (up to 20mm in size).			1 1 2
8.50-10.00 8.50- 8.60	8.50	100 60 C	0.09 0.02	0	(7)	Between 8.79-8.83m, discontinuity inclined 30 degrees, clean, stepped and rough with many black specks.			2 2 3 3 1 1
					(NI)	Between 9.53-9.62m, discontinuity inclined 45 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. Between 9.64-9.72m, discontinuity included 40 degrees, clean, stepped and clean with many black specks. Between 9.90-10.45m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts are much orangish brown relic sponge staining (up to 6mm in size).	10.00 (97.40)		3 3

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks: AGS 2002.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-16.00m, Air/Mist, 100% return.

Logged by: SI
Checked by: CPL
Figure: 2 of 4
27/03/2020

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71208
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409214.9 E 141321.4 N	Ground Level	107.40 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	10.00	100 67	0.65 0.13	60	(NI)	Very weak, medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, closely to widely spaced (70/320/740), clean or infilled (0/0/2) with grey marl or comminuted chalk, stepped or undulating and rough with many black specks and occasional brown surface staining. Set 2 are 40-50 degrees, clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks and occasional brown surface staining. [GRADE A2]	10.00 (97.40)		1 1
10.74-11.00		C			(4)				1
11.50-13.00	11.50	100 93	0.36 0.08	65	(7)	Between 11.43-11.50m, discontinuity inclined 55 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. At 11.74m, with angular to subangular small flint fragments (up to 40mm in size). Between 11.94-12.24m, discontinuity inclined 90 degrees, clean, undulating and smooth with many black specks.			1 1 1 2 2
12.67-12.91		C				At 12.75m, with occasional orangish brown relic sponge traces (up to 3mm in size).			1 1
13.00-14.50	13.00	97 77	0.18 0.11	40	(3)	Between 13.18-13.22m, discontinuity inclined 20 degrees, clean, stepped and rough with many black specks. Between 13.90-14.05m, incipient discontinuity inclined 90 degrees.			1
					(NI)	Between 13.90-14.05m, with angular to subangular small and medium flint fragments (up to 80mm in size). Between 14.05-14.35m, with much brown relic sponge traces (up to 15mm in size). Between 14.24-14.35m, discontinuity inclined 90 degrees, clean, undulating and smooth with many black specks and occasional brown surface staining.			2 2
					(7)				1
14.50-16.00	14.50	100 73	0.29 0.08	33	(NI)	Between 14.53-14.70m, discontinuity inclined 60 degrees, clean, stepped and rough with many black specks. Between 14.70-14.75m, discontinuity inclined 30 degrees, clean, stepped and rough with many black specks. Between 14.88-14.93m, with angular to subangular small and medium flint fragments (up to 60mm in size).			2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Logged by SI
Checked by CPL
Figure 3 of 4
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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71208
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409214.9 E, 141321.4 N
Ground Level: 107.40 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
15.45-15.64		C			(6)	Between 14.95-15.35m, discontinuity inclined 90 degrees, clean, undulating and smooth with many black specks.			2, 1, 1, 1
						End of Borehole	16.00 (91.40)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 4 of 4
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71209
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409374.0 E, 141384.6 N	Ground Level	109.58 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (109.58)		
0.20		B				**TOPSOIL : Brown slightly sandy slightly gravelly silt. Gravel is subangular to subrounded fine to coarse chalk and flint.**			
0.20		D							
0.20		ES					0.30 (109.28)		
0.20			PID=<0.1			**Structureless CHALK, composed of light brown slightly sandy slightly gravelly SILT. Clasts are very weak, low density, white, subangular to subrounded and fine to coarse. With occasional subangular to subrounded small and medium flint fragments (up to 60mm in size). [GRADE Dm]**			
0.50		B							
0.50		D							
0.50		ES							
0.50			PID=<0.1						
1.00		B							
1.00		D					1.00 (108.58)		
1.00		ES				**CHALK, recovered as very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density, white with rare black specks. Matrix is light brown. With many angular small and medium nodular flint (up to 60mm in size). Below 1.35m, matrix is white.**			
1.00			PID=<0.1						
1.20- 2.50	1.20	69	0.11	12	(NI)				
		39	0.04						
					(13)		1.45 (108.13)		
					(NI)	**Very weak, low and medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, closely to medium spaced (70/190/350), clean or infilled (0/0/1) with comminuted chalk, undulating or stepped and rough with many black specks and rare orangish brown surface staining. Set 2 are 80-90 degrees, clean (0/0/0), undulating or stepped and rough with many black specks and rare orangish brown surface staining. [Grade A2/3] Between 1.45-1.52m, discontinuity inclined 45 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks. Between 1.16-1.80m, non intact, recovered as silty angular to subangular fine to coarse gravel. At 1.85m and 1.94m, with angular small flint fragments (up to 10mm in size). Between 1.94-2.02m, with occasional orangish brown relic sponge traces (up to 15mm in size). Between 2.02-2.15m, non intact, recovered as angular coarse gravel with a low subangular cobble content. Between 2.15-2.50m, assumed zone of core loss. Between 2.50-2.70m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 2.75-2.81m, discontinuity inclined 45 degrees, clean, stepped and rough with occasional black specks. At 2.94m, with an angular small flint fragment (20mm in size). At 3.08m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks. Between 3.08-3.35m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 3.71-3.84m, non intact, recovered as subangular cobbles. Clasts with occasional light brown relic sponge traces (up to 20mm in size). Between 3.84-4.28m, with occasional orangish brown or light brown relic sponge traces (up to 20mm in size). Between 4.00-4.10m, non intact, recovered as angular medium to coarse gravel. Between 4.28-4.40m, with angular to subangular small and medium flint fragments (up to 80mm in size). At 4.28m, discontinuity inclined 45 degrees, clean,stepped and rough with occasional black specks and orangish brown surface staining. Between 4.40-4.46m, non intact, recovered as angular to subangular fine to coarse gravel. At 4.65m, with an orangish brown relic sponge trace (5mm in size). At 4.95m, with occasional brown relic sponge traces (up to 10mm in size).**			
					(AZCL)				
2.50- 4.00	2.50	97	0.14	9	(NI)				
		59	0.05						
					(16)				
					(NI)				
					(8)				
					(NI)				
3.85- 4.00		C							
					(6)				
4.00- 5.50	4.00	90	0.17	29	(NI)				
		53	0.07						
					(11)				
					(NI)				
					(6)				

Drilling

Depth	Hole Dia	Technique	Crew
0.30	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AW/PB
16.00	0.12	Geobor S	AW/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			02/09/19	08:00
0.30	NIL	DRY	11/09/19	18:00
0.30	NIL	DRY	10/09/19	08:00
16.00	16.00	15.60	10/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by LC
Checked by CPL
Figure 1 of 4
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71209
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409374.0 E, 141384.6 N
Ground Level: 109.58 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 4.98-5.17m, non intact, recovered as angular to subangular fine to coarse gravel. Between 5.17-5.23m, with many orangish brown relic sponge traces (up to 30mm in size). Between 5.23-5.35m, non intact, recovered as very silty angular to subrounded fine to coarse gravel. With rare angular to subangular small and medium flint fragments (up to 80mm in size) with a 1mm thick cortex.			
					(0)				
					(NI)				
					(AZCL)				
5.50- 7.00 5.57- 5.73	5.50	93 65 C	0.16 0.08	19		Between 5.35-5.50m, assumed zone of core loss. Between 5.50-5.73m, with many orangish brown relic sponge traces (up to 20mm in size).			1 1 2
					(6)	Between 6.00-6.14m, discontinuity inclined 70 degrees, clean, stepped and rough with many black specks. Between 6.14-6.17m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 20mm in size). Between 6.40-6.50m, discontinuity inclined 70 degrees clean, undulating and rough with many black specks.			2 1
					(NI)	Between 6.74-6.90m, non intact, recovered as angular to subangular fine to coarse gravel with a subangular cobble. Between 6.90-7.00m, assumed zone of core loss.			1
					(AZCL)	Between 7.00-7.20m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			
7.00- 8.50	7.00	93 50	0.22 0.05	31					
					(NI)	Between 7.20-7.35m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular small flint fragments (up to 20mm in size).			2
					(8)				2
					(NI)	Between 7.61-7.65m, non intact, recovered as angular fine to coarse gravel. Clasts with occasional orangish brown staining.	7.65 (101.93)		
					(6)	Very weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-5 degrees, closely to very widely spaced (100/380/900), clean or infilled (0/0/5) with comminuted chalk, undulating or stepped and rough with many black specks and rare orangish brown surface staning. Set 2 are 80-90 degrees, clean or infilled (0/0/5) with a sheet-flint, undulating and rough with many black specks. Set 3 are 70-75 degrees, clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining. [GRADE A2]			
					(NI)				3
					(8)				
					(NI)				
					(AZCL)				
8.50-10.00 8.50- 8.70	8.50	95 83 C	0.25 0.08	63		Between 7.65-7.90m, with many orangish brown relic sponge traces (up to 40mm in size). At 7.67m, with an angular small flint fragment (5mm in size). Between 7.83-7.90m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks and orangish brown surface staining. Between 7.90-8.00m, discontinuity inclined 45 degrees, clean, undulating and rough with occasional black specks and rare orangish brown surface staining. Between 8.00-8.15m, non intact, recovered as angular fine to coarse gravel. At 8.20m, with an orangish brown relic sponge trace (10mm in size).			1 2 2
					(6)				1 3 2
					(NI)	Between 8.27-8.40m, non intact, recovered as angular fine to coarse gravel with a medium angular cobble content.			
					(0)	Between 8.40-8.50m, assumed zone of core loss. At 8.70m, with an orangish brown relic sponge trace (10mm in size). Between 8.82-8.93m, flint (full diameter).			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-16.00m, Air/Mist, 100% return.

Logged by: LC
Checked by: CPL
Figure: 2 of 4
27/03/2020

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71209 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 409374.0 E, 141384.6 N | Ground Level: 109.58 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	10.00	98 84	0.25 0.10	29	(NI)	At 9.00m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks. At 9.50m, with an orangish brown relic sponge trace (10mm in size). Between 9.65-9.76m, non intact, recovered as angular to subangular fine to coarse gravel. Between 10.00-10.12m, non intact, recovered as angular to subangular fine to coarse gravel.			1 2 3 1
					(5)				
					(9)	Between 10.95-10.98m, with angular to subangular small nodular flint fragments (up to 50mm in size). At 11.17m, with angular small flint fragments (up to 15mm in size). Between 11.35-11.40m, non intact, recovered as angular to subangular fine to coarse gravel.			1 1 2 2
11.50-13.00 11.85-12.07	11.50	100 69 C	0.35 0.06	45	(NI)	Between 11.50-11.65m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content. Between 11.65-11.75m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular small flint fragments (up to 30mm in size). Between 11.80-11.85m, discontinuity inclined 20 degrees, clean, undulating and rough with occasional black specks. At 12.03m, with an angular small flint fragment (20mm in size).			1 2 1 3 3
					(11)	Between 12.42-12.45m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks. At 12.50m and 12.67m, with occasional orangish brown relic sponge traces (up to 10mm in size). Between 12.6-12.70m, with a sheet flint (5mm thick) along Set 2 discontinuity. At 12.68m, with an angular small flint fragment (5mm in size). Between 12.80-13.00m, non intact, recovered as angular to subangular fine to coarse gravel with a medium subangular cobble content.			1 3 1 2
					(NI)				
13.00-14.50	13.00	100 100	0.42 0.03	85		Between 13.58-13.65m, with rare orangish brown relic sponge traces (up to 10mm in size).			2 1 1 2 1
					(4)				
14.50-16.00	14.50	100 92	0.65 0.06	83		At 14.80m, with a dark orangish brown relic sponge trace (10mm in size). At 15.00m, with subangular to subrounded medium flint (60mm in size) (possible burrow).			1 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by LC
Checked by CPL
Figure 3 of 4
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71209
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409374.0 E 141384.6 N	Ground Level	109.58 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
15.06-15.44		C				At 15.06 and 15.40m, with rare orangish brown relic sponge traces (up to 15mm in size).			1
					(NI)	Between 15.70-15.86m, non intact, recovered as angular to subangular fine to coarse gravel with subangular cobble.			1
					(7)	At 15.74m, with angular small flint fragments (up to 50mm in size).			2
							16.00 (93.58)		
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by LC
Checked by CPL
Figure 4 of 4
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71211 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 409279.3 E, 141207.6 N | Ground Level: 109.18 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (109.18)		
0.00- 0.30		B				TOPSOIL: Dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subrounded fine to coarse flint, quartzite and chalk.			
0.20		D							
0.20		ES							
0.20			PID=<0.1				0.30 (108.88)		
0.30- 0.70		B				Light brown very silty very sandy GRAVEL. Gravel is angular to subrounded fine to coarse flint and chalk.			
0.50		D							
0.50		ES							
0.50			PID=<0.1						
							0.70 (108.48)		
0.70- 1.20		B				Structureless CHALK, composed of slightly sandy silty angular fine to coarse GRAVEL and COBBLES with occasional pockets (up to 40mm in size) of soft light brown clay. Clasts are very weak, low and medium density and white with rare black specks. Matrix is light brown. With occasional angular to subrounded small nodular flint fragments (up to 45mm in size). [GRADE Dc]			
1.00		D							
1.00		ES							
1.00			PID=<0.1				1.20 (107.98)		
1.20- 2.60	1.20	46 0			(NI)	CHALK, recovered as slightly sandy silty angular fine to coarse GRAVEL and COBBLES. Clasts are very weak, low density and white with rare black specks. Matrix is white. With occasional angular to subrounded small nodular flint fragments (up to 50mm in size). Between 1.20-1.28m, with angular to subangular small to medium flint fragments (up to 80mm in size). Between 1.85-2.60m, assumed zone of core loss.			
					(AZCL)				
2.60- 3.00	2.60	50 0			(NI)	Between 2.60-2.80m, recovered as subangular cobbles. Between 2.80-3.20m, assumed zone of core loss.			
					(AZCL)				
3.00- 3.90	3.00	78 0				At 3.30m, with angular to subangular small and medium flint fragments (up to 75mm in size).			
					(NI)	Between 3.90-4.00m, with angular to subangular small flint fragments (up to 50mm in size).			
3.90- 5.40	3.90	67 40	0.03 0.02	7					
							4.30 (104.88)		1 1
					(8)	Very weak, low density, white with rare black specks CHALK. Discontinuities are: Set 1 are 90 degrees, clean (0/0/0), undulating, rarely planar and rough with many black specks. At 4.48m, discontinuity inclined 10 degrees, clean, stepped, and rough with many black specks. Between 4.50-4.58m, discontinuity inclined 30 degrees, clean, stepped and rough with many black specks. Between 4.70-4.74m, with angular to subangular small flint fragments (up to 30mm in size).			1
4.80- 4.90		C			(5)				

Drilling

Depth	Hole Dia	Technique	Crew
0.70	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	SP/PB
15.40	0.12	Geobor S	SP/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			10/09/19	08:00
1.20	NIL	DRY	10/09/19	18:00
1.20	1.20	DRY	11/09/19	08:00
12.90	12.90	12.20	11/09/19	18:00
12.90	12.90	11.90	12/09/19	08:00
15.40	15.40	15.40	12/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.70m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
At 3.00m, the casing was pulled back to 1.30m to allow Falling Head Permeability tests to be undertaken.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).

Logged by: SI
Checked by: CPL
Figure: 1 of 4
27/03/2020

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71211
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409279.3 E 141207.6 N	Ground Level	109.18 m OD

Drilling		Properties/Sampling				Strata			Scale 1:25
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(AZCL)	Between 4.90-5.40m, assumed zone of core loss.			
5.40- 6.90 5.49- 5.59	5.40	73 42 C	0.19 0.02	13	(0) (NI) (7) (NI) (AZCL)	Very weak locally weak, medium and high density, white with occasional black specks CHALK. Discontinuities are: Below 7.05m, Set 1 are 40-50 degrees, very closely to medium spaced (40/110/310), clean or infilled (0/0/1) with comminuted chalk, undulating rarely stepped and rough with many black specks and rare orangish brown surface staining. Set 2 are 80-90 degrees, clean (0/0/0), undulating or stepped and rough with many black specks and rare orangish brown surface staining. [GRADE A3] Between 5.59-5.76m, with angular to subangular small and medium flint fragments (up to 90mm in size). Between 5.59-5.86m, non intact, recovered as angular to subangular fine to coarse gravel. Between 6.00-6.20m, discontinuity inclined 75 degrees, clean, undulating and rough with many black specks. Between 6.30-6.37m, with angular to subangular small and medium flint fragments (up to 60mm in size).	5.40 (103.78)		2 2
6.90- 8.40 7.49- 7.58	6.90	83 33 C	0.09 0.02	0	(NI) (11) (NI) (AZCL)	Between 6.37-6.50m, non intact, recovered as angular to subangular fine to coarse gravel. Between 6.50-6.90m, assumed zone of core loss. Between 6.90-7.05m, non intact, recovered as angular to subangular fine to coarse gravel. At 7.20m, with angular to subangular small flint fragments (up to 40mm in size). At 7.23m, discontinuity inclined 10 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black speck and occasional orangish brown surface staining. At 7.24m, with occasional orangish brown relic sponge traces (up to 8mm in size). Between 7.35-7.46m, discontinuity inclined 60 degrees, clean, planar and smooth with many black specks. Between 7.86-7.96m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks. At 8.00m, with occasional orangish brown relic sponge traces (up to 15mm in size). Between 8.00-8.15m, non intact, recovered as angular to subangular fine to coarse gravel. Between 8.15-8.40m, assumed zone of core loss.			2 1 1 1 1 1 2
8.40- 9.90 8.95- 9.05	8.40	80 29 C	0.25 0.02	7	(NI) (10) (NI) (4) (NI) (AZCL)	Between 8.40-8.47m, with angular to subangular small and medium flint fragments (up to 90mm in size). Between 8.47-8.66m, non intact, recovered as angular to subangular fine to coarse gravel. Between 8.66-8.76m, with occasional orangish brown relic sponge traces (up to 15mm in size). At 8.76m, discontinuity inclined 0 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black speck and occasional orangish brown surface staining. Between 8.76-8.95m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts with much orangish brown surface staining. At 8.95m, discontinuity inclined 0 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks and occasional orangish brown surface staining. Between 9.20-9.60m, non intact, recovered as angular to subangular fine to coarse gravel. Between 9.60-9.90m, assumed zone of core loss.			2
9.90-11.40	9.90	67 17	0.06 0.02	0	(11)	Between 9.90-9.98m, non intact, recovered as angular to subangular fine to coarse gravel.			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS

Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-15.40m, Air/Mist, 100% return.

Logged by SI
Checked by CPL
Figure 2 of 4
27/03/2020

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71211 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 409279.3 E, 141207.6 N | Ground Level: 109.18 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	At 9.98m, discontinuity inclined 20 degrees, clean, stepped and rough with many black specks. At 10.00m, with occasional orangish brown relic sponge traces (up to 5mm in size).			
					(10)	Between 10.04-10.09m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks. Between 10.09-10.28m, non intact, recovered as angular to subangular fine to coarse gravel. Between 10.20-10.27m, with angular to subangular small and medium flint fragments (up to 60mm in size).			1
					(NI)	Between 10.28-10.35m, discontinuity inclined 60 degrees, clean, stepped and rough with many black specks.			
					(AZCL)	Between 10.45-10.54m, discontinuity inclined between 25 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. Between 10.65-10.72m, discontinuity inclined 65 degrees, clean, stepped and rough with many black specks.			
11.40-12.90	11.40	60	0.20	13	(0)	Between 10.72-10.90m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 10.90-11.40m, assumed zone of core loss.			
11.40-11.51		20 C	0.02			Between 11.60-11.70m, with angular to subangular small and medium flint fragments (up to 70mm in size).			
					(NI)	Between 11.70-12.30m, non intact, recovered as angular to subangular fine to coarse gravel with a medium subangular cobble content.			
						Between 12.30-12.90m, assumed zone of core loss.			
					(AZCL)				
12.90-14.40	12.90	93 27	0.30	20	(0)	Between 13.20-14.40m, non intact, recovered as angular to subangular fine to coarse gravel and cobbles.			2
					(NI)				2
14.40-15.40	14.40	88 60	0.25 0.18	43	(5)				1 2
					(NI)	Between 14.84-15.06m, with angular to subangular small and medium flint fragments (up to 80mm in size).			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 3 of 4
27/03/2020

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71211**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **409279.3** E **141207.6** N
Ground Level **109.18** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
15.06-15.26		**C**			**(0)**				
						End of Borehole	**15.40 (93.78)**		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **4 of 4**
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71212
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409384.8 E 141140.2 N	Ground Level	113.14 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (113.14)		
0.20 0.20		B D				**TOPSOIL: Brown slightly sandy gravelly silt. Gravel is angular to subrounded fine to coarse chalk and flint.**			
							0.40 (112.74)		
0.50 0.50		B D				**Structureless CHALK, composed of cream, slightly sandy slightly gravelly SILT. Clasts are very weak, low and medium density and white, angular to subangular and fine to coarse. With occasional angular to subrounded small and medium flints (up to 45mm in size). [GRADE Dc]**			
1.00 1.00		B D							
1.20- 2.50	1.20	69 38	0.10 0.01	8	(NI) (26) (NI) (13) (AZCL)	**Very weak, low and medium density and white with occasional black specks CHALK. Discontinuities where seen are: Set 1 are 0-20 degrees, very closely to medium spaced (20/70/110), clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 40-60 degrees, clean (0/0/0), stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Below 2.50m, Set 3 are 80-90 degrees, clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE A3] Between 1.20-1.40m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts have much orangish brown and brown surface staining.**	1.20 (111.94)		1 1 2 2 2 1 1 1 2 1 1 1
2.50- 4.00	2.50	100 35	0.06 0.02	0	(NI) (5) (NI) (5) (NI)	**Between 1.70-1.80m, with occasional angular to subangular small to large flint fragments (up to 110mm in length). Between 2.10-2.50m, assumed zone of core loss. Between 2.50-2.60m, non intact, recovered as angular to subangular fine to coarse gravel. Between 2.82-3.10m, non intact, recovered as very silty angular to subangular fine to coarse gravel. Clasts have much brown surface staining. At 3.10m, with occasional angular to subangular small flint fragments (up to 50mm in size). Between 3.20-3.40m, discontinuity inclined between 75 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining.**			3 2 3 3
3.40- 3.46		C				**Between 3.46-3.50m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining. Between 3.50-4.23m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts have occasional orangish brown relic sponge traces (up to 10mm in size). Between 3.80-4.00m, with occasional angular to subangular small to large flint fragments (up to 120mm in length).**			
4.00- 5.50	4.00	89 53	0.28 0.07	17	(7) (NI) (8)	**Between 4.50-4.60m, with occasional angular to subangular small and medium flint fragments (up to 70mm in size). Between 4.60-5.33m, with many orangish brown relic sponge traces (up to 12mm in size).**			1 1 3 2 1 2 3

Drilling

Depth	Hole Dia	Technique	Crew
0.40	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AW/PB
16.00	0.12	Geobor S	AW/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			10/09/19	08:00
0.40	NIL	DRY	10/09/19	18:00
0.40	NIL	DRY	17/09/19	08:00
16.00	16.00	DRY	17/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.40m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
At 1.20m, 150mm diameter casing installed to 1.20m depth.
At 6.50m, the casing was pulled back to 5.00m to allow Falling Head Permeability tests to be undertaken.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 1 of 4
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71212
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409384.8 E, 141140.2 N	Ground Level	113.14 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
5.22- 5.33		C			(AZCL)	Between 5.33-5.55m, assumed zone of core loss.			3 3
5.50- 6.50	5.50	92 65	0.20 0.13	65	(0)	Very weak, medium density, white with occasional black specks CHALK. Discontinuities where seen are: Set 1 are 0-20 degrees, closely to medium spaced (100/200/370), clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with black specks and much orangish brown surface staining. Set 2 are 30-40 degrees, clean (0/0/0), stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 3 are 50-70 degrees, clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks. Set 4 are 80-90 degrees, clean or infilled (0/0/1) with comminuted chalk, stepped or undulating and rough with many black specks. [Grade A2/3]	5.50 (107.64)		
					(NI)				
					(0)				
6.25- 6.48		C			(NI)				4
6.50- 7.00	6.50	70 56	0.16 0.12	56	(4)	Between 5.70-5.83m, non intact, recovered as very silty angular to subangular fine to coarse gravel. At 5.76m, with occasional orangish brown relic sponge traces (up to 5mm in size). Between 6.12-6.19m, with occasional angular to subangular small flint fragments (up to 40mm in size). Between 6.19-6.25m, non intact, recovered as angular to subangular fine to coarse gravel. At 6.25m, with occasional angular to subangular small flint fragments (up to 30mm in size). At 6.90m, with occasional orangish brown relic sponge traces (up to 2mm in size). Between 7.00-7.36m, non intact, recovered as angular to subangular fine to coarse gravel.			1 1 1
7.00- 8.50	7.00	93 57	0.20 0.02	40	(NI)				4
					(4)				3 4 2
7.86- 8.00		C				Between 7.80-7.95m, with occasional orangish brown relic sponge traces (up to 10mm in size).			4
					(NI)	Between 8.29-8.50m, with occasional angular to subangular small to large flint fragments (up to 130mm in length).			
8.50-10.00	8.50	83 53	0.32 0.15	17		Between 8.50-8.64m, non intact, recovered as silty angular to subangular fine to coarse gravel. At 8.60m, with occasional angular to subangular small flint fragments (up to 50mm in size).			4 3 1
					(5)				1 1
					(AZCL)	Between 9.75-10.00m, assumed zone of core loss.			3

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS

Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.30m, arisings up to ground level.
Flush: 1.20-16.00m, Air/Mist, 100% return.

Logged by SI
Checked by CPL
Figure 2 of 4
27/03/2020

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71212** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **409384.8** E **141140.2** N Ground Level **113.14** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	**10.00**	**99** **88**	**0.14** **0.05**	**60**					3
									1
									3
									2
									1
					(5)				
11.10-11.24		**C**							2
									2
11.50-13.00	**11.50**	**80** **53**	**0.34** **0.11**	**27**		**Between 11.60-11.74m, with occasional angular to subangular small and large flint fragments (up to 112mm in length).**			2
					(NI)				3
									2
									2
									4
					(5)				2
						Between 12.70-13.00m, assumed zone of core loss.			
					(AZCL)				
13.00-14.50	**13.00**	**100** **79**	**0.35** **0.12**	**52**					3
13.67-13.90		**C**			**(2)**	**At 13.64m, with occasional angular to subangular small flint fragments (up to 4mm in size).**			
						Between 13.90-14.00m, with occasional orangish brown relic sponge traces (up to 5mm in size).			1
						Between 14.08-14.16m, with occasional angular to subangular small and medium flint fragments (up to 60mm in size).			1
14.50-16.00	**14.50**	**87** **53**	**0.30** **0.04**	**51**					1
					(15)	**Between 14.74-14.80m, discontinuity inclined 25 degrees, clean, undulating and rough with many black specks.** **Between 14.90-15.16m, non intact, recovered as angular to subangular fine to coarse gravel.**			3 1 3 3
									2
									2 2

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **SI**
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Figure **3 of 4**
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71212
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409384.8 E 141140.2 N	Ground Level	113.14 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 15.16-15.30m, with occasional angular to subangular small and medium flint fragments (up to 80mm in size).			2 2 2 3
					(3)				1 3
					(NI)	Between 15.90-16.00m, non intact, recovered as angular to subangular fine to coarse gravel and cobbles.	16.00 (97.14)		
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 4 of 4
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71213
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409494.9 E 141201.6 N	Ground Level	112.57 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (112.57)		
0.20 0.20		B D				TOPSOIL: Brown slightly sandy slightly gravelly silt. Gravel is angular to subrounded fine to coarse chalk and flint.			
							0.45 (112.12)		
0.50 0.50		B D				Structureless CHALK, composed of cream, slightly sandy slightly gravelly SILT. Clasts are very weak, low and medium density, white, angular to subangular and fine to coarse. With occasional angular to subrounded small and medium flints (up to 40mm in size). [GRADE Dm]			
1.00 1.00		B D							
							1.20 (111.37)		
1.20- 2.50	1.20	69 17	0.09 0.03	0	(NI)	CHALK, recovered as very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density, white with rare black specks and orangish brown staining. Matrix is white. With occasional angular to subangular small flints (up to 30mm in size). Below 1.50m, slightly silty. Flint gravel is absent.			
							1.65 (110.92)		
					(12)	Very weak, low and medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0 degrees, very closely to medium spaced (30/70/170), clean or infilled (0/0/2) with comminuted chalk, undulating, rarely stepped and rough with many black specks and rare orangish brown surface staining.			1
					(NI)				2
					(AZCL)	Set 2 are 80-90 degrees, clean (0/0/0), undulating and rough with many black specks and orangish brown surface staining. [GRADE A3]			1 1
2.50- 4.00	2.50	87 49	0.12 0.04	8	(NI)	Between 1.79-1.87m, with many angular to subrounded small and medium flint fragments (up to 70mm in size).			
2.78- 2.92		C			(5)	Between 1.99-2.10m, non intact, recovered as angular to subangular fine to coarse gravel with a medium subangular cobble content. Between 2.10-2.50m, assumed zone of core loss.			1
					(NI)	Between 2.50-2.59m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts with rare orangish brown relic sponge traces (up to 5mm in size).			2
					(20)				1 1 1
					(NI)	Between 2.59-2.65m, with occasional orangish brown relic sponge traces (up to 15mm in size).			2
					(14)	At 2.78m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks. At 2.90m, with occasional dark orangish brown relic sponge traces (up to 10mm in size).			1 2 2
					(NI)	Between 2.92-2.96m, with extremely closely spaced grey marl seams (up to 1mm thick).			
					(AZCL)	Between 2.96-3.04m, non intact, recovered as angular to subangular fine to coarse gravel. Between 3.24-3.32m and 3.60-3.80m, non intact, recovered as very silty angular to subangular fine to coarse gravel with rare angular small flint			
4.00- 5.50	4.00	100 60	0.14 0.08	38	(NI)	fragments (up to 10mm in size). Between 3.80-4.00m, assumed zone of core loss.	4.00 (108.57)		
					(10)	Very weak to weak, low to medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, closely to widely spaced (100/360/730), clean or infilled (0/0/2) with comminuted chalk, stepped or undulating and rough with many black specks and rare orangish brown surface staining. Set 2 are 70-80 degrees, clean (0/0/0), undulating or stepped and rough with many black specks and occasional orangish brown surface staining.			2 1 1 2 1 2 3
					(NI)	Set 3 are 20-30 degrees, clean (0/0/0), undulating or stepped and rough with many black specks and rare orangish brown surface staining.			1 3

Drilling

Depth	Hole Dia	Technique	Crew
0.45	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AW/PB
16.00	0.12	Geobor S	AW/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			10/09/19	08:00
0.45	NIL	DRY	10/09/19	18:00
0.45	NIL	DRY	17/09/19	08:00
16.00	16.00	DRY	17/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.45m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
At 6.50m, the casing was pulled back to 5.00m to allow Falling Head Permeability tests to be undertaken.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574,

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by LC
Checked by CPL
Figure 1 of 4
27/03/2020

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71213
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409494.9 E, 141201.6 N	Ground Level	112.57 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(15)	[GRADE A2] Between 4.00-4.13m, non intact, recovered as angular coarse gravel with a low subangular cobble content.			3 1
					(NI)				
					(9)	At 4.46m, with rare orangish brown relic sponge traces (up to 5mm in size).			2
					(NI)	Between 4.90-5.00m, non intact, recovered as angular to subangular fine to coarse gravel.			
5.50- 6.50	5.50	85 56	0.30 0.10	56	(5)	At 4.97m, with a subrounded medium flint (up to 70mm in size). (flint burrow).			2
					(NI)	Between 5.13-5.23m and 5.34-5.50m, non intact, recovered as angular to subangular fine to coarse gravel.			
5.92- 6.22		C				Between 5.60-5.79m, non intact, recovered as angular to subrounded fine to coarse gravel.			1
					(4)	At 5.77m, with a angular small flint fragment (40mm in size). At 6.10m, with a dark orangish brown relic sponge trace (10mm in size).			
					(NI)	Between 6.22-6.30m, with many subangular to subrounded small flint fragments (up to 50mm in size)			1
					(AZCL)	Between 6.30-6.35m, non intact, recovered as angular to subangular fine to coarse.			
6.50- 7.00	6.50	100 24	0.12	24	(0)	Between 6.35-6.50m, assumed zone of core loss.			
					(NI)	At 6.55m, with an orangish brown sponge trace (10mm in size). Between 6.62-6.92m, non intact, recovered as slightly silty angular to subangular fine to coarse gravel.			
7.00- 8.50	7.00	97 83	0.25 0.04	61	(5)	Between 6.92-7.00m, with subangular to subrounded small and medium nodular flints (up to 100mm in length) with a 1mm thick cortex.			3
					(NI)	Between 7.22-7.33m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content.			2
						At 7.58m, with an orangish brown relic sponge trace (10mm in size). At 7.73m, with a subrounded small flint fragment (15mm in size).			2 1
					(5)	Between 7.75-7.90m, with many orangish brown relic sponge traces (up to 20mm in size).			2
						Between 8.16-8.22m, non intact, recovered as angular to subangular fine to coarse gravel. With a subangular small flint fragment (up to 30mm in size). At 8.27m, with a subrounded small finger flint (40mm in length).			1
					(NI)	Between 8.40-8.60m, non intact, recovered as angular to subangular fine to coarse gravel.			
8.50-10.00	8.50	83 62	0.35 0.07	35		Between 8.60-8.88m, discontinuity inclined 90 degrees, clean, undulating and rough with many black specks.			1 3
					(10)				2
						At 9.18m, undulating calcite vein (1mm thick).			3 1
9.23- 9.57		C							1
					(5)	Between 9.45-9.57m, with occasional orangish brown relic sponge traces (up to 10mm in size).			
					(NI)	Between 9.57-9.75m, with subangular medium to large nodular flint fragments (up to 100mm in size).			3
					(AZCL)	Between 9.75-10.00m, assumed zone of core loss.			
						Between 10.00-10.14m, non intact, recovered as subangular cobbles.			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks AGS 2002.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-16.00m, Air/Mist, 100% return.

Logged by LC
Checked by CPL
Figure 2 of 4
27/03/2020

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71213** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **409494.9** E **141201.6** N Ground Level **112.57** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	**10.00**	**100** **77**	**0.23** **0.05**	**50**	**(NI)**				
					(0)	**Between 10.36-10.43m, with a angular medium flint fragment (70mm in size).**			
					(NI)	**Between 10.43-10.56m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional angular to subangular small flint fragments (up to 40mm in size).**			2 3 1
						Between 10.60-11.05m, with many orangish brown relic sponge traces (up to 40mm in size).			2
					(6)	**Between 11.05-11.10m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks.**			
						At 11.35m, with an orangish brown relic sponge trace (30mm in size).			1 2 1
11.50-13.00	**11.50**	**93** **93**	**0.60** **0.06**	**89**					
11.67-12.25		**C**					**11.67** **(100.90)**		
					(2)	**Very weak, medium density, white with rare black specks CHALK.** **Discontinuities are:** **Set 1 are 0-5 degrees, medium spaced (230/350/590), clean (0/0/0), undulating and rough, with many black specks and rare orangish brown surface staining.** **Set 2 are 80-90 degrees, clean (0/0/0) undulating and rough with many black specks.** **[GRADE A2]**			1
						At 12.55m, with occasional dark orangish brown relic sponge traces (up to 10mm in size).			
						At 12.90m, with a grey marl seam (1mm thick).			1
					(AZCL)	**Between 12.90-13.00m, assumed zone of core loss.**			2
13.00-14.50	**13.00**	**93** **78**	**0.35** **0.15**	**78**	**(7)**				2
					(NI)	**Between 13.27-13.40m, non intact, recovered as subangular to subrounded fine to coarse gravel. With many angular to subangular small flint fragments (up to 50mm in size).**			
						Between 13.40-14.55m, with many orangish brown relic sponge traces (up to 40mm in size).			1
					(3)				1
						Between 14.40-14.50m, assumed zone of core loss.			1
					(AZCL)				
14.50-16.00	**14.50**	**100** **81**	**0.28** **0.07**	**73**					
14.74-14.98		**C**			**(4)**				1
						At 14.95m, with an orangish brown relic sponge trace (20mm in size).			1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **LC**
Checked by **CPL**
Figure **3 of 4**
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geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71213
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409494.9 E 141201.6 N	Ground Level	112.57 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(9)	Between 15.12-15.17m, discontinuity inclined 75 degrees, clean, stepped and rough with occasional black specks. At 15.20m, with many angular to subangular small flint fragments (up to 50mm in size). Between 15.25-15.45m, with 3 no 45 degrees very closely to closely spaced (20/80), clean (0/0/0), undulating, rarely stepped and rough with many black specks. At 15.45m, with a wispy grey marl seam (2mm thick) with marl partings (1mm thick). Between 15.74-15.80m, non intact, recovered as angular to subangular fine to coarse gravel.			2 1
					(NI) (10)				1 2
						End of Borehole	16.00 (96.57)		

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by LC
Checked by CPL
Figure 4 of 4
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71802
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410075.5 E, 141324.6 N	Ground Level	105.33 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (105.33)		
0.00- 0.25		B				TOPSOIL : Dark brown slightly gravelly clayey sand with occasional rootlets and roots (up to 5mm in diameter). Gravel is angular to subangular fine to coarse flint.	0.25 (105.08)		
0.20		D				Structureless CHALK, composed of silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low and medium density and white with rare black speck and much orangish brown surface staining. Matrix is light brown. With occasional angular to subangular small and medium nodular flint fragments (up to 70mm in size). [GRADE Dc]			
0.20		ES							
0.25- 1.20		B							
0.20			PID=<0.1						
0.50		D							
0.50		ES							
0.50			PID=<0.1						
1.00		D							
1.00		ES							
1.00			PID=<0.1				1.20 (104.13)		
1.20- 2.10	1.20	100		0	(NI)	CHALK, recovered as silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density and white with rare black speck and much orangish brown surface staining. Matrix is light brown. With occasional angular to subangular small and medium nodular flint fragments (up to 70mm in size). At 1.20m, with angular to subangular small and medium flint fragments (up to 60mm in size). Below 1.20m, matrix is cream. Between 1.48-1.54m, 1.73-1.79m and 1.87-1.94m, solid core. Between 1.73-1.70m, discontinuity inclined 90 degrees, clean, stepped and rough with occasional black specks.			
		21							
2.10- 3.60	2.10	97	0.35	47			2.30 (103.03)		1 2
		63	0.03		(9)	Very weak, low and medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 0-20 degrees, closely to medium spaced (70/260/550), clean or infilled (0/1/1) with comminuted chalk, stepped and rough with many black specks and rare orangish brown surface staining. Set 2 are 80-90 degrees, clean (0/0/0), stepped or undulating and rough with many black specks. Between 2.30-4.10m, Set 3 are 30-40 degrees, very closely to closely spaced (40/55/70), clean or infilled (0/1/1) with comminuted chalk, stepped and rough with many black specks. Below 4.20m, Set 4 are 70-75 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, undulating or stepped and rough with many black specks and occasional orangish brown surface staining.			3
2.79- 2.85		C							1 3 1
					(NI)				
					(10)				1 2 1
					(NI)	[Grade B2-4] At 2.66m, with angular to subangular small and medium flint fragments (up to 60mm in size). Between 2.95-3.10m, non intact, recovered as angular to subangular medium to coarse gravel. Between 3.40-3.60m, non intact, recovered as angular to subangular fine to coarse gravel with a subangular cobble.			
3.60- 5.10	3.60	100	0.32	58					1
		73	0.08						3
3.60- 3.67		C							3
					(6)	Between 4.16-4.20m, with many orangish brown relic sponge traces (up to 10mm in size).			2 4 4
						Between 4.70-5.10m, non intact, recovered as angular to subangular fine to coarse gravel. At 4.84m, with angular to subangular small flint fragments (up to 30mm in size).			4
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew
0.25	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	SP/PB
44.90	0.12	Geobor S	RC/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			22/08/19	08:00
0.25	NIL	DRY	22/08/19	18:00
0.25	NIL	DRY	05/09/19	08:00
3.60	3.60	DRY	05/09/19	18:00
3.60	3.60	DRY	06/09/19	08:00
12.60	12.60	DRY	06/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.25m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
At 1.20m, 150mm diameter casing installed to 1.30m depth.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 1 of 9
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71802** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410075.5** E **141324.6** N Ground Level **105.33** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
5.10- 6.60	5.10	100 65	0.37 0.01	53	(0) (NI) (8) (NI) (NI) (12) (NI)	At 5.20m, with a grey marl seam (<1mm thick). Between 5.25-5.34m, non intact, recovered as angular to subangular fine to coarse gravel. Between 5.34-5.40m, non intact, recovered as angular to subangular fine to coarse gravel. With angular to subangular small and medium flint fragments (up to 80mm in size). Between 5.88-5.95m, non intact, recovered as silty angular to subangular fine to coarse gravel. Clasts with occasional orangish brown surface staining.	5.95 (99.38)		2 4 2 1 1 2
6.60- 8.10	6.60	100 61	0.40 0.10	61	(4) (NI) (4) (NI)	Extremely weak and very weak, low density, white with occasional black specks CHALK with much orangish brown penetrative staining (up to 5mm depth). Discontinuities are: Set 1 are 80-90 degrees, clean or infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks and orangish brown surface staining. Set 2 are 25-40 degrees, clean (0/0/0), stepped or planar and rough with many black specks and orangish brown surface staining. Between 5.95-6.15m, non intact, recovered as silty angular to subangular fine to coarse gravel. Clast with much orangish brown staining. At 6.15m, discontinuity inclined 0 degrees, infilled (2mm thick) with grey marl, stepped and rough with many black specks and orangish brown surface staining. Between 6.40-6.50m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts with occasional orangish brown staining. At 6.60m, with angular to subangular small and medium flint fragments (up to 80mm in size). Between 6.95-7.13m, non intact, recovered as angular to subangular fine to coarse gravel. Very weak, low density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 80-90 degrees, clean or infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks.	7.13 (98.20)		2 1 1 1
8.10- 9.60 8.40- 8.48	8.10	93 80 C	0.23 0.10	80	(6) (NI)	Below 8.10m, Set 2 are 0-5 degrees, closely to medium spaced (100/230/500), clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks. [GRADE A3] Between 7.36-7.50m, discontinuity inclined 60 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks. At 7.70m, with angular to subangular small flint fragments (up to 20mm in size). Between 7.70-8.10m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content. Between 8.93-9.06m, discontinuity inclined 70 degrees, clean, planar and smooth with many black specks. Between 9.30-9.60m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content.			1 2 2 2 2 1 2
9.60-11.10 9.60- 9.71	9.60	100 91 C	0.23 0.02	86	(6)	Very weak and weak, low to medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 80-90 degrees, clean (0/0/0), undulating or stepped and rough with many black specks and rare orangish brown surface staining. Set 2 are 0 degrees, closely to medium spaced	9.60 (95.73)		2 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
12.60	12.60	DRY	09/09/19	08:00
38.90	38.90	37.30	09/09/19	18:00
38.90	38.90	34.30	10/09/19	08:00
44.90	44.90		10/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS **Stratigraphic Nomenclature Provided by the Client.**
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-44.90m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
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Figure **2 of 9**
27/03/2020

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71802 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410075.5 E, 141324.6 N | Ground Level: 105.33 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						(100/270/390), clean or infilled (0/1/1) with grey marl or comminuted chalk, planar or stepped and rough with many black specks. [GRADE B2] Between 9.77-9.90m, non intact, recovered as angular to subangular fine to coarse gravel. Between 10.07-10.24m, discontinuity inclined 70 degrees, clean, planar and smooth, with many black specks. Between 10.29-10.38m, discontinuity inclined 45 degrees, clean, planar and smooth with many black specks. Between 10.37-10.43m, with angular to subangular small and medium flint fragments (up to 70mm in size). Between 10.76-10.82m, non intact, recovered as angular to subangular fine to coarse gravel.			1
					(5)				2
									1
									1
									2
11.10-12.60	11.10	93 73	0.30 0.05	37		Between 11.15-11.20m and 11.29-11.45m, non intact, recovered as silty angular to subangular fine to coarse gravel.			
					(NI)				
						At 11.46m, with occasional orangish brown relic sponge traces (up to 15mm in size).			2
					(10)				2
						Between 11.66-11.72m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)	Between 11.75-11.80m, with angular to subangular small nodular and sheet-flint fragments (up to 40mm in size).			
11.91-12.00		C							2
									1
					(4)				
						Between 12.47-12.84m, non intact, recovered as angular to subangular fine to coarse gravel with a low angular cobble content.			
12.60-13.40	12.60	69 28	0.12 0.02	15	(NI)	At 12.70m, with angular to subangular small flint fragments (up to 20mm in size).			
					(0)	Between 12.91-13.00m, non intact, recovered as subangular medium to coarse gravel.			
					(NI)				1
					(7)	Between 13.15-13.40m, assumed zone of core loss.			
					(AZCL)				
13.40-14.90	13.40	100 74	0.18 0.12	51					1
					(4)				
13.77-13.94		C							
						Between 13.94-14.17m, non intact, recovered as angular to subrounded fine to coarse gravel with a medium subangular to subrounded cobble content.			2
					(NI)				
					(5)				1
						Between 14.58-14.74m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)				2
					(6)				1
14.90-16.40	14.90	93 67	0.69 0.05	53		Very weak, medium density, white with occasional black specks CHALK.	14.90 (90.43)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 3 of 9
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71802** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410075.5** E **141324.6** N Ground Level **105.33** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
15.18-15.40		**C**			**(3)**	**Discontinuities are: Set 1 are 0-5 degrees, very closely to widely spaced (40/550/900), clean or infilled (0/0/1) with comminuted chalk, stepped, rarely planar and rough with many black specks and occasional orangish brown surface staining. Between 17.00-18.50m, Set 2 are 70-80 degrees, clean (0/0/0), undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE A2] At 15.34m, with occasional orangish brown relic sponge traces (up to 5mm in size). Between 15.64-15.74m, with many orangish brown relic sponge traces (up to 20mm in size). Between 15.91-16.14m, non intact, recovered as angular to subangular fine to coarse gravel. Between 16.00-16.07m, with angular to subangular small and medium flint fragments (up to 80mm in size). Between 16.14-16.20m, discontinuity inclined 90 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 16.20-16.65m, discontinuity inclined 40 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining. Between 16.63-16.65m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks. At 16.75m, with a horizontal grey wispy marl seam (3mm thick). Between 16.98-17.00m, discontinuity inclined 25 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining. Between17.13-17.24m, with many orangish brown relic sponge traces (up to 20mm in size). Between 17.29-17.35m, with angular to subangular small flint fragments (up to 40mm in size). Between 17.65-17.70m, with many orangish brown relic sponge traces (up to 10mm in size). Between 17.70-17.90m, assumed zone of core loss.**			1 1
					(NI)				1 1
16.40-17.90	**16.40**	**87 65**	**0.35 0.05**	**57**	**(4)**				2 2 2
					(AZCL)				
17.90-19.40	**17.90**	**95 89**	**0.30 0.03**	**67**					1 2
17.90-18.20		**C**			**(3)**	**At 18.42m, with angular to subangular small nodular flint fragments (up to 25mm in size). Between 18.42-18.50m, discontinuity inclined 50 degrees, clean, undulating and rough with many black specks. Between 18.50-18.63m, discontinuity inclined 40 degrees, clean, stepped and rough with many black specks.**			1
19.40-20.90	**19.40**	**30 20**			**(NI)**	**CHALK, recovered as angular to subangular fine to coarse GRAVEL and COBBLES. Clasts are very weak, medium density and white with occasional black specks and occasional orangish brown surface staining. Matrix is white. With occasional angular to subangular small flint fragments. At 19.48m, with angular to subangular small and medium flint fragments (up to 50mm in size). Between 19.55-19.75m, intact section of core. Between 19.85-20.90m, assumed zone of core loss.**	**19.40 (85.93)**		
19.65-19.80		**C**							

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
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Figure **4 of 9**
27/03/2020

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71802** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410075.5** E **141324.6** N Ground Level **105.33** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(AZCL)	Between 19.75-19.85m, with occasional angular to subangular small and medium flint fragments (up to 99mm in size).			
20.90-21.90	20.90	100 66	0.27 0.05	53	(3)	Very weak locally weak, medium density, white with occasional black specks CHALK. Discontinuities where seen are: Set 1 are 0-10 degrees, medium to very widely spaced (240/550/1230), clean or infilled (0/0/1) with grey marl, planar, rarely stepped and smooth or rough with many black specks and rare orangish brown surface staining.	20.90 (84.43)		3
21.44-21.63		C				Set 2 are 80-90 degrees, clean, rarely infilled (0/0/8) with sheet-flints, undulating or stepped and smooth or rough with many black specks and rare orangish brown surface staining. Between 20.90-24.95m, Set 3 are 40-50 degrees, clean or infilled (0/1/1) with grey marl, or comminuted chalk, stepped and rough with many black specks and rare orangish brown surface staining.			1 4
21.90-22.40	21.90	100 0			(NI)	Set 4 are 60-70 degrees, clean or infilled (0/0/1) with grey marl, undulating or planar and rough or smooth with many black specks. [GRADE A2] At 20.96m, with angular to subangular small and medium nodular flint fragments (up to 80mm in size).			3 3 4
22.40-23.90	22.40	93 73	0.89 0.14	67	(1)	Between 21.07-21.15m, with occasional orangish brown relic sponge traces (up to 10mm in size). Between 21.82-22.40m, non intact, recovered as silty angular to subangular gravel and cobbles. Clasts with many back specks. Matrix is cream. At 22.30m, with angular to subangular small and medium flint fragments (up to 60mm in size). Between 22.40-23.90m, with many orangish brown relic sponge traces (up to 15mm in size).			2
23.00-23.20		C							
					(NI)	At 23.50m, with angular to subangular small and medium flint fragments (up to 60mm in size). Between 23.50-23.70m, non intact, recovered as angular to subangular medium to coarse gravel. At 23.78m, with angular to subangular small flint fragments (up to 20mm in size). Between 23.78-23.95m, with occasional orangish brown relic sponge traces (up to 10mm in size).			
23.90-25.40	23.90	79 68	0.73 0.20	59	(2)				3 3
24.70-24.95		C							
					(NI)				

Drilling | Progress | Groundwater

Drilling Depth	Hole Dia	Technique	Crew	Progress Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **5 of 9**
27/03/2020

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71802** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410075.5** E **141324.6** N Ground Level **105.33** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(AZCL)	Between 24.95-25.00m, with angular to subangular small and medium flint fragments (up to 40mm in size). Between 25.00-25.40m, assumed zone of core loss.			
25.40-26.90	25.40	78 47	0.23 0.04	35	(2)	Between 25.80-25.97m, with a grey wispy marl seam (5mm thick).			2
					(NI)	Between 25.97-26.08m, with angular to subangular small and medium flint fragments (up to 80mm in size).			2
					(2)				
						Between 26.57-26.90m, assumed zone of core loss.			
					(AZCL)				
26.90-27.90	26.90	100 89	0.35 0.24	89		Between 26.90-27.24m, with occasional burrows (up to 100mm in length) infilled (up to 10mm thick) with light grey marl. At 27.42m and 27.51m, with a grey marl seam (up to 2mm thick).			1 1
27.90-28.40 27.93-28.15	27.90	100 100 C	0.24 0.18	84	(2)	At 28.37m, with occasional orangish brown relic sponge traces (up to 4mm in size).			1 1
28.40-29.90	28.40	93 80	0.43 0.20	80		At 29.03m, with a grey marl seam (<1mm thick).			
					(NI)	Between 29.18-29.25m, non intact, recovered as silty angular to subangular fine to coarse gravel.			
						Between 29.42-29.50m, with angular to subangular small and medium flint fragments (up to 20mm in size).			
29.90-31.40	29.90	100 97	1.08 0.23	87					4

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **6 of 9**
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geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71802** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410075.5** E **141324.6** N Ground Level **105.33** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
30.23-30.51		**C**			**(1)**	**Between 30.38-30.43m, with occasional orangish brown relic sponge traces (up to 4mm in size). Between 30.49-30.88m, with occasional horizontal grey wispy marl seams (up to 10mm thick).**			1
						Between 30.90-31.00m, with occasional orangish brown relic sponge traces (up to 4mm in size). Between 31.06-31.10m, with occasional horizontal grey wispy marl seams (up to 5mm thick).			
						At 31.32m, with a grey marl seam (<1mm thick).			
31.40-32.90	**31.40**	**79** **73**	**0.83**	**73**		**Between 31.44-31.66m, with occasional grey wispy marl seams (up to 4mm thick).**			
						Between 31.70-31.75m, with angular to subangular small and medium nodular flint fragments (up to 80mm in size).			
31.90-32.11		**C**			**(0)**				
						At 32.20m, with many orangish brown sponge traces (up to 10mm in size).			
						Between 32.58-32.90m, assumed zone of core loss.			
					(AZCL)				
32.90-33.90	**32.90**	**95** **62**	**0.33** **0.20**	**50**	**(0)**	**At 33.03m, with a horizontal grey wispy marl seam (3mm thick).**			
					(NI)	**Between 33.10-33.19m, with angular to subangular small and medium flint fragments (up to 60mm in size).**			4
						At 33.24m, with a grey wispy marl seam (2mm thick).			
						At 33.45m, with a burrow (up to 45mm in length) infilled (4mm thick) with light grey marl.			4
33.90-34.40	**33.90**	**100** **100**	**0.50** **0.50**	**100**	**(2)**	**At 34.16m, with a grey marl seam (3mm thick).**			
						At 34.25m and 34.36m, with occasional orangish brown relic sponge traces (up to 20mm in size).			
34.40-35.90	**34.40**	**100** **80**	**0.85** **0.44**	**73**		**Between 34.47-34.50m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks. At 34.50m, with a grey wispy marl seam (12mm thick). At 34.56m, with many orangish brown relic sponge traces (up to 3mm in size). Between 34.66-34.77m, with many orangish brown relic sponge traces (up to 10mm size). At 34.85m, with a grey marl seam (3mm thick).**			1
					(NI)				1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **7 of 9**
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geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71802**
Project No **PC197626**
Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410075.5** E **141324.6** N
Ground Level **105.33** m OD
Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
35.09-35.33		**C**			**(0)**	**At 34.88m, with a burrow (80mm in length) infilled (5mm thick) with light grey marl. Between 35.00-35.05m, with angular to subangular small and medium flint fragments (up to 80mm in size). At 35.21m, with subhorizontal sheet-like bivalve fossil (up to 2mm thick). (Platyceramus) Between 35.22-35.33m, with many orangish brown relic sponge traces (up to 10mm in size). Between 35.46-35.52m, with occasional orangish brown relic sponge traces (up to 5mm in size).**			
35.90-37.40	**35.90**	**63** **20**		**7**	**(5)** **(NI)** **(AZCL)**	**Between 36.11-36.85m, non intact, recovered as angular to subangular fine to coarse gravel. With many tabular small sheet flint fragments (up to 8mm thick).** **Between 36.85-37.40m, assumed zone of core loss.**			4 2
37.40-38.40 **37.58-37.85**	**37.40**	**100** **95** **C**	**0.73** **0.27**	**95**		**At 37.40m, with angular to subangular small and medium flint fragments (up to 60mm in size). Between 37.50-37.70m, with much orangish brown relic sponge traces (up to 15mm in size).** **At 37.90m, with a subhorizontal sheet-like bivalve fossil (up to 3mm thick). (Platyceramus)** **Between 38.07-38.11m, with a grey wispy marl seam (10mm thick). At 38.21m, with many orangish brown relic sponge traces (up to 4mm in size). At 38.25m, with a sheet-like bivalve fossil (2mm thick). (Platyceramus)**			1
38.40-38.90	**38.40**	**98** **96**	**0.48** **0.48**	**96**	**(0)**	**Between 38.60-38.90m, with occasional subhorizontal sheet-like bivalve fossils (up to 5mm thick). (Platyceramus)**			
38.90-40.40	**38.90**	**100** **80**	**0.82** **0.82**	**55**	**(NI)**	**At 38.92m, with a horizontal grey wispy marl seam (5mm thick).** **At 39.08m, with many orangish brown relic sponge traces (up to 4mm in size).** **At 39.36m, with a sheet-like bivalve fossil (up to 2mm thick). (Platyceramus)** **Between 39.50-39.58m, with angular to subangular flint (full diameter). At 39.62m, with a subhorizontal sheet-like bivalve fossil (up to 3mm thick). (Platyceramus)**			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
Checked by **CPL**
Figure **8 of 9**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71802** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410075.5** E **141324.6** N Ground Level **105.33** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
40.02-40.40		C			(0)	At 40.10m, with a horizontal grey wispy marl seam (4mm thick).			
40.40-41.90	40.40	95 73	0.37 0.20	60		Between 40.50-40.62m, with many orangish brown relic sponge traces (up to 20mm in size).			
					(NI)	Between 40.77-40.85m, with angular to subangular small and medium flint fragments (up to 80mm in size). Between 40.85-41.00m, non intact, recovered as angular to subangular fine to coarse gravel.			
						At 41.26m, with angular to subangular small flint fragments (up to 30mm in size).			
						Between 41.56-42.03m, with occasional grey wispy marl seams (up to 10mm thick).			1
41.90-43.40	41.90	97 81	0.62 0.23	73		At 42.03m, with many orangish brown relic sponge traces (up to 3mm in size).			
					(1)	At 42.30m, with a sheet-like bivalve fossil (up to 4mm thick). (Platyceramus)			4
						Between 42.73-42.85m, with a horizontal grey wispy marl seam (10mm thick).			1
42.85-43.29		C				Between 42.94-43.05m, with many orangish brown relic sponge traces (up to 15mm in size). At 43.04m, with a sheet-like bivalve fossil (3mm thick). (Platyceramus) Between 43.11-43.26m, with many subhorizontal grey wispy marl seams (up to 15mm thick). Between 43.26-43.35m, with many orangish brown relic sponge traces (up to 5mm in size).			
43.40-44.90	43.40	80 44	0.30 0.40	35		At 43.45m, with a grey wispy marl seam (2mm thick). At 43.50m, with a burrow (45mm in length) infilled (3mm thick) with brown marl. Between 43.60-43.72m and 43.83-44.01m, with angular to subangular medium flint fragments (up to 80mm size). (burrow)			
					(NI)				
					(0)				
					(NI)				
44.01-44.17		C			(0)	At 44.06m, with a sheet-like bivalve fossil (2mm thick). (Platyceramus) Between 44.17-44.30m, with angular to subangular small and medium burrow flint fragments (up to 90mm in length).			
					(NI)				
					(0)	At 44.43m, with many orangish brown relic sponge traces (up to 5mm in size). Between 44.6-44.90m, assumed zone of core loss.			
					(AZCL)				
						End of Borehole	44.90 (60.43)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
Checked by **CPL**
Figure **9 of 9**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71803
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410097.9 E, 141365.0 N	Ground Level	106.20 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
0.00- 0.30		B				TOPSOIL: Dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subangular fine to coarse chalk and flint.	G.L. (106.20)		
0.20		D							
0.20		ES							
0.20			PID=<0.1				0.35		
0.30- 0.60		B				Structureless CHALK, composed of sandy silty GRAVEL. Clasts are very weak, low density, white with rare black specks. Matrix is light brown. With rare subangular to subrounded small nodular flints (up to 45mm in size). [GRADE Dc]	(105.85)		
0.50		D							
0.50		ES							
0.50			PID=<0.1				0.60		
0.60- 1.20		B					(105.60)		
1.00		D				Structureless CHALK, composed of white gravelly SILT. Clasts are very weak to weak, low to medium density, white with rare black specks, angular to subangular and fine to coarse. With occasional angular to subrounded small nodular flints (up to 40mm in size). [GRADE Dm]			
1.00		ES							
1.00			PID=<0.1				1.20		
1.20- 2.20	1.20	25 0					(105.00)		
1.20- 1.65	NIL	D			S74	CHALK, recovered as silty angular to subangular fine to coarse GRAVEL and COBBLES. Clasts are very weak to weak, low to medium density and white with rare black specks. Matrix is white. With occasional angular to subangular small to medium flints (up to 70mm in size). Between 1.20-1.95m, assumed zone of core loss.			
					(AZCL)				
					(NI)	Between 1.95-2.20m, with rare angular to subangular small to medium flint fragments (up to 70mm in size). Between 2.20-2.75m, assumed zone of core loss.			
2.20- 3.20	2.20	45 0							
2.20- 2.65	2.20	D			S90				
					(AZCL)				
					(NI)	Between 2.92-2.96m, with angular to subangular small and medium flint fragments (up to 60mm in size). Between 3.20-4.05m, assumed zone of core loss.			
3.20- 4.20	3.20	15 0							
3.20- 3.65	3.20	D			S60				
					(AZCL)				
					(NI)	Between 4.05-4.20m, with rare angular to subangular small and medium flint fragments (up to 80mm in size). Between 4.20-4.80m, assumed zone of core loss.			
4.20- 5.20	4.20	40 0							
4.20- 4.65	4.20	D			S73				
					(AZCL)				
					(NI)	Between 4.80-5.20m, with rare angular to subangular small and medium flint fragments (up to 70mm in size).			

Drilling / Progress / Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.30	0.50	Inspection Pit	Arch	G.L.			21/08/19	08:00						None observed during drilling, possibly masked by flush.
1.20	0.50	Inspection Pit	SP/PB	0.30	NIL	DRY	21/08/19	18:00						
14.70	0.12	Geobor S	SP/PB	0.30	NIL	DRY	12/09/19	08:00						
44.86	0.12	Geobor S	AC/RT	3.20	3.20	DRY	12/09/19	18:00						
				3.20	3.20	DRY	13/09/19	08:00						
				6.20	6.20	DRY	13/09/19	18:00						

Remarks (AGS)

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
At 1.20m, 150mm diameter casing installed to 1.20m depth.
At 9.20m, the casing was pulled back to 7.70m to allow Falling Head Permeability tests to be undertaken.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
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Figure 1 of 9
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71803 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410097.9 E, 141365.0 N | Ground Level: 106.20 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
5.20- 6.20	5.20	65 25		15		Between 5.20-5.55m, assumed zone of core loss.			
5.20- 5.65	5.20	D			(AZCL) S62				
					(NI)				
5.68- 5.74		C			(0)	Very weak and weak, medium density, white with occasional black specks CHALK.	5.68 (100.52)		
					(NI)	Discontinuities where seen are:			
					(0)	Set 1 are 0-15 degrees, clean (0/0/0), undulating, stepped or planar and smooth, rarely rough, with many black specks.			
					(NI)	Set 2 are 70 degrees, clean (0/0/0), undulating or stepped and rough with many black specks.			
6.20- 7.20	6.20	50 35	0.09 0.04	0		Between 5.74-5.81m, with a subangular medium flint fragments (up to 80mm in size).			
6.20- 6.65	6.20	D			S87 (AZCL)	Between 6.00-6.20m, non intact, recovered as angular to subangular fine to coarse gravel.			
						Between 6.20-6.70m, assumed zone of core loss.			
					(NI)	Between 6.70-6.80m, non intact, recovered as slightly silty angular to subangular fine to coarse gravel.			1 2
					(5)	At 6.75m, with a subangular small flint fragment (50mm in size).			
						At 7.10m, with rare angular to subangular small flint fragments (up to 40mm in size).			
7.20- 8.20	7.20	40 0				Between 7.20-7.80m, assumed zone of core loss.			
7.20- 7.65	7.20				S69 (AZCL)				
						Between 7.80-8.20m, non intact, recovered as silty angular to subrounded fine to coarse gravel.			
					(NI)				
8.20- 9.20	8.20	50 38	0.10 0.05	10		Between 8.20-8.70m, assumed zone of core loss.			
8.20- 8.65	8.20	D			S76 (AZCL)				
8.70- 8.80		C							2 1 1
					(6)				
9.20-10.20	9.20	30 0				CHALK, recovered as very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density and white. Matrix is cream.	9.20 (97.00)		
9.20- 9.65	9.20	D			S80 (AZCL)	Between 9.20-9.90m, assumed zone of core loss.			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
6.20	6.20	DRY	16/09/19	08:00
14.70	14.70	DRY	16/09/19	18:00
14.70	14.70	DRY	17/09/19	08:00
26.70	26.70	26.00	17/09/19	18:00
26.70	26.70	26.50	18/09/19	08:00
41.70	41.70	41.50	18/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-44.70m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 2 of 9
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71803 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410097.9 E, 141365.0 N | Ground Level: 106.20 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)				
10.20-11.70	10.20	93 50	0.14 0.04	17		Very weak and weak, medium and high density, white with occasional black specks CHALK. Discontinuities where seen are:	10.20 (96.00)		1
10.20-10.65 10.32-10.44	10.20	D C			S72 (6)	Set 1 are 80-90 degrees, clean or infilled (0/1/1) with comminuted chalk, stepped, rarely planar and rough with many black specks and occasional orangish brown surface staining. Set 2 are 0-20 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, stepped or planar and rough with many black specks. At 10.38m, with occasional orangish brown relic sponge traces (up to 10mm in size). Between 10.44-10.50m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks. Between 10.50-10.60m, discontinuity inclined 60 degrees, infilled (1mm thick) with comminuted chalk with many black specks.			2 1
					(NI)	Between 10.60-10.70m, with angular to subangular small and medium flint fragments (up to 70mm in size). Between 10.75-19.90m, discontinuity inclined 40 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining.			
11.70-13.20 11.70-12.15	11.70 11.70	67 12 D	0.10 0.02	7	S99 (AZCL)	Between 11.24-11.70m, non intact, recovered as very silty angular to subangular fine to coarse gravel. Between 11.70-12.20m, assumed zone of core loss.			
					(NI)	Between 12.20-12.62m, non intact, recovered as angular to subangular fine to coarse gravel. At 12.30m, with occasional orangish brown relic sponge traces (up to 4mm in size).			
					(0)	Between 12.62-12.77m, with angular to subangular small and medium flint fragments (up to 90mm in size).			
13.08-13.20		C			(NI) (8)	Between 12.94-13.08m, non intact, recovered as angular to subangular fine to coarse gravel.			2
13.20-14.70 13.20-13.65	13.20 13.20	87 67 D	0.60 0.10	53	(2) S105				2
									1
						Between 14.10-14.15m, with angular to subangular small flint fragments (up to 30mm in size).			
					(AZCL)	Between 14.50-14.82m, assumed zone of core loss.			
14.70-16.20 14.70-15.15	14.70 14.70	92 47 D	0.27 0.07	29	(AZCL) S98	Between 14.82-14.91m, with angular to subangular small and medium flint fragments (up to 60mm in size).			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
41.70	41.70	39.10	19/09/19	08:00
44.70	44.70	41.20	19/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by SI
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Figure 3 of 9
27/03/2020

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71803
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410097.9 E 141365.0 N	Ground Level	106.20 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 14.91-15.28m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse chalk.			
					(5)	Between 15.45-15.52m, with angular to subangular small and medium flint fragments (up to 80mm in size). Between 15.59-15.63m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks. Between 15.90-15.95m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. Between 16.00-16.03m, discontinuity inclined 25 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks.			2 1
16.20-17.70 16.20-16.65	16.20 16.20	90 57 D	0.47 0.04	51	(AZCL) S88	Between 16.20-16.35m, assumed zone of core loss. Between 16.35-16.70m, non intact, recovered as angular to subangular fine to coarse gravel. Between 16.44-16.60m, discontinuity inclined 50 degrees, clean, planar and smooth with many black specks.			
					(NI)	At 16.95m, with a grey marl seam (2mm thick).			2 1 1
17.23-17.43		C			(3)	Between 17.23-17.36m, with much orangish brown relic sponge traces (up to 10mm in size).			
						At 15.79m, with occasional orangish brown relic sponge traces (up to 10mm in size). Between 17.70-18.10m, assumed zone of core loss.			
17.70-19.20 17.70-18.15	17.70 17.70	73 43 D	0.27 0.03	29	(AZCL) S121				
							18.10 (88.10)		
					(NI)	Very weak locally weak, medium and locally high density, white with occasional black specks CHALK. Discontinuities where seen are: Set 1 are 0-15 degrees, closely to widely spaced (70/370/600), clean or infilled (0/1/1) with comminuted chalk, shell fragments in places, stepped, rarely planar, and rough with many black specks and occasional orangish brown surface staining. Set 2 are 60-70 degrees, clean, rarely infilled (0/1/7) with comminuted chalk, rarely sheet flints, undulating and rough with many black specks and rare orangish brown surface staining. [GRADE B2]			2
					(8)				1 1 1
					(NI)	Between 18.10-18.38m, non intact, recovered as very silty angular to subangular fine to coarse gravel. At 18.38m, with angular to subangular small flint fragments (up to 30mm in size).			
19.20-20.70 19.20-19.65	19.20 19.20	86 57	0.58 0.02	55	(AZCL) C93	Between 18.81-18.83m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining.			
					(NI)	Between 18.92-18.96m, discontinuity inclined 40 degrees, clean, planar and smooth with many black specks and occasional orangish brown surface staining. Between 19.00-19.10m, with many orangish brown relic sponge traces (up to 20mm in size). Between 19.10-19.20m, with angular to subangular small to medium flint fragments (up to 80mm in size).			

Drilling | Progress | Groundwater

Drilling Depth	Hole Dia	Technique	Crew	Progress Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71803 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410097.9 E, 141365.0 N | Ground Level: 106.20 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
20.16-20.42		C			(3)	Between 19.20-19.41m, assumed zone of core loss. Between 19.41-19.75m, non intact, recovered as angular to subangular fine to coarse gravel. Between 20.14-20.16m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with black specks and occasional orangish brown surface staining. At 20.30m, with occasional orangish brown relic sponge traces (up to 3mm in size).			1
20.70-22.20	20.70	69 63	0.44 0.05	48		Between 20.70-21.16m, assumed zone of core loss.			1
20.70-21.15	20.70				C116 (AZCL)				
					(NI)	Between 21.16-22.22m, non intact, recovered as angular to subangular fine to coarse gravel. Between 21.22-21.25m, with angular to subangular small flint fragments (up to 30mm in size). Between 21.30-21.34m, with many orangish brown relic sponge traces (up to 3mm thick).			
					(2)				2
21.88-22.20		C							1
22.20-23.70	22.20	99 59	0.40 0.17	59		Between 22.20-22.65m, non intact, recovered as angular to subangular fine to coarse gravel.			
22.20-22.65	22.20				C95 (NI)				
					(0)	At 22.68m and 22.96m, with orangish brown relic sponge traces (up to 3mm thick).			
					(NI)	Between 23.00-23.10m, non intact, recovered as angular to subangular fine to coarse gravel. At 23.05m, with angular to subangular small flint fragments (up to 40mm in size). At 23.25m, with occasional burrows (up to 50mm in length) with orangish brown staining.			
					(2)				1
23.70-25.20	23.70	90 48	0.26 0.05	37	(AZCL)	Between 23.70-24.85m, assumed zone of core loss.			
23.70-24.15	23.70				C48	Between 23.85-24.23m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)				
					(3)	Between 24.23-24.29m, discontinuity inclined 90 degrees, clean, planar and smooth with many black specks. At 24.38m, with angular to subangular small and medium flint fragments (up to 60mm in size). At 24.40m, with occasional orangish brown relic sponge traces (up to 10mm in size). Between 24.45-24.50m, with angular to subangular small flint fragments (up to 25mm in size). Between 24.86-24.94m, non intact, recovered as angular to subangular fine to coarse gravel.			
24.94-25.50		C							1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Figure 5 of 9
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71803** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410097.9** E **141365.0** N Ground Level **106.20** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
25.20-26.70	25.20	79 59	0.35 0.01	33	(AZCL) C92	Between 25.20-25.52m, assumed zone of core loss.			
25.20-25.65	25.20				(NI)	Between 25.52-25.79m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse chalk.			
					(5)	Between 25.90-26.15m, incipient discontinuity inclined 90 degrees, clean, undulating and smooth with occasional black specks (partly open).			1 2 2
						At 26.57m, with a sheet-like bivalve fossils (up to 3mm thick). (Platyceramus)			1
26.70-28.20	26.70	90 78	0.50 0.20	73	(AZCL) C130/ 150	Between 26.70-26.85m, assumed zone of core loss. Between 26.85-27.00m, non intact, recovered as angular to subangular fine to coarse gravel.			
26.70-27.00	26.70				(NI)				
27.25-27.55		C			(1)	Between 27.17-27.25m, with occasional subhorizontal grey wispy marl seams (up to 15mm thick). Between 27.55-27.70m, discontinuity inclined 40 degrees, infilled (1mm thick) with grey marl, stepped and rough with many black specks.			
						At 27.90m, with occasional orangish brown relic sponge traces (up to 5mm in size).			
28.20-29.70	28.20	97 73	0.79 0.18	73	(NI) C100/ 185	Between 28.20-28.50m, non intact, recovered as angular to subangular fine to coarse gravel.			
28.20-28.54	28.20					At 28.58m, with occasional orangish brown relic sponge traces (up to 15mm in size).			1
					(2)	Between 28.88-28.91m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks.			
						Between 29.70-30.10m, assumed zone of core loss.			
29.70-31.20	29.70	73 51	0.50 0.07	47	(AZCL) C100/ 140				
29.70-29.94	29.70								

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71803** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410097.9** E **141365.0** N Ground Level **106.20** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 30.10-30.30m, non intact, recovered as angular to subangular fine to coarse gravel. At 30.12m, with angular to subangular small flint fragments (up to 30mm in size).			
					(NI)				
					(7)				2
						Between 30.60-30.70m, with angular to subangular small flint fragments (up to 50mm in size).			1
					(NI)				
30.80-31.05		**C**				**At 30.82m, with occasional orangish brown relic sponge traces (up to 3mm in size).**			
					(2)				
						Between 31.20-31.57m, assumed zone of core loss.			1
31.20-32.70	**31.20**	**75 60**	**0.30 0.07**	**50**					
31.20-31.51	**31.20**				**(AZCL) C100/ 190**				
					(NI)	**Between 31.57-31.70m, non intact, recovered as angular to subangular fine to coarse gravel. At 31.60m, with angular to subangular small and medium flint fragments (up to 60mm in size). At 31.80m, with occasional orangish brown relic sponge traces (up to 6mm in size).**			1
					(3)	**Between 32.15-32.23m, discontinuity inclined 50 degrees, infilled (1mm thick) with grey marl, undulating and rough with many black specks and occasional orangish brown surface staining. At 32.23m, with a subhorizontal grey wispy marl seam (8mm thick). At 32.36m, with occasional orangish brown relic sponge traces (up to 10mm in size). Between 32.40-32.50m, with occasional subhorizontal grey wispy marl seams (up to 5mm thick).**			1
32.70-34.20	**32.70**	**100 70**	**0.55 0.16**	**60**		**Between 32.60-32.65m, with angular to subangular small flint fragments (up to 40mm in size).**			
32.70-33.15	**32.70**				**(NI) C100**	**Between 32.70-33.09m, non intact, recovered as very silty angular to subangular fine to coarse gravel.**			
						At 33.10m, with a subhorizontal grey wispy marl seam (4mm thick). At 33.23m, with angular to subangular small flint fragments (up to 30mm in size).			
						Between 33.43-33.50m, with occasional orangish brown relic sponge traces (up to 10mm in size). Below 33.50m, spacing possibly increasing.			1
					(2)	**At 33.65m, with angular to subangular small flint fragments (up to 15mm in size).**			1
33.82-34.20		**C**				**At 33.85m and 34.00m, with subhorizontal grey marl seams (<1mm thick).**			
						Between 34.20-34.37m, assumed zone of core loss.			
34.20-35.70	**34.20**	**89 64**	**0.64 0.17**	**53**	**(AZCL)**	**Between 34.37-34.70m, non intact, recovered as very silty angular to subangular fine to coarse gravel.**			
34.20-34.60	**34.20**				**C100/ 250**				
					(NI)				
						At 34.75m, with a orangish brown relic sponge trace (5mm in size).			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **7 of 9**
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71803
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410097.9 E 141365.0 N	Ground Level	106.20 m OD

Drilling		Properties/Sampling				Strata			Scale 1:25
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(2)	At 35.24m, with a sheet-like bivalve fossils (up to 2mm thick). (Platyceramus)			2
						At 35.53m, with a subhorizontal grey wispy marl seam (12mm thick).			1
35.70-37.20	35.70	87 65	0.70 0.20	53	(AZCL)	Between 35.70-35.90m, assumed zone of core loss.			
35.70-36.14	35.70				C100/ 290	Between 35.90-36.12m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			
					(NI)	Between 32.12-36.32m, with occasional orangish brown relic sponge traces (up to 6mm in size).			
36.32-36.84		C			(0)				
					(5)	At 36.82m, with a sheet-like bivalve fossils (up to 3mm thick). (Platyceramus) Between 36.89-36.95m, discontinuity inclined 50 degrees, clean, undulating and smooth with many black specks. Between 36.95-37.20m, discontinuity inclined 85 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining.			2
37.20-38.70	37.20	89 67	0.60 0.60	54	(AZCL)				
37.20-37.54	37.20				C100/ 200	Between 37.20-37.37m, assumed zone of core loss. Between 37.37-37.60m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)	At 37.40m, with angular to subangular small flint fragments (up to 30mm in size).			
						Between 37.83-39.00m, discontinuity inclined 40 degrees, infilled (up to 12mm thick) with a sheet flint, stepped and rough with many black specks.			2 1
					(3)	At 38.18m, with a grey marl seam (<1mm thick). Between 38.20-38.45m, with occasional orangish brown relic sponge traces (up to 5mm thick).			
						Between 38.70-39.00m, non intact, recovered as angular to subangular fine to coarse gravel.			
38.70-40.20	38.70	93 69	0.46 0.02	31	(NI)				
38.70-38.98	38.70				C100/ 150				
					(6)	At 39.16m, with occasional circular orangish brown relic sponge traces (up to 15mm in diameter). Between 39.20-39.56m, incipient discontinuity inclined 85 degrees, clean, undulating and rough with many black specks. (opened during logging) At 39.30m and 39.78m, with a sheet-like bivalve fossil (up to 2mm thick). (Platyceramus) Between 39.40-39.43m, discontinuity inclined 30 degrees, clean, stepped and rough with many black specks.			2 2 1 2
39.93-40.20		C							

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71803 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410097.9 E, 141365.0 N | Ground Level: 106.20 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(0)				
40.20-41.70	40.20	90 80	0.60 0.10	67	(AZCL)	Between 40.20-40.35m, assumed zone of core loss. Between 40.35-40.40m, non intact, recovered as angular to subangular fine to coarse gravel. Between 40.40-40.45m, with angular to subangular small flint fragments (up to 50mm in size).			
40.20-40.32	40.20				C100/ 25				
					(NI)				
					(1)	At 40.95m, with a grey marl seam (<1mm thick).			
						At 41.33m and 41.55m, with a sheet-like bivalve fossil (up to 2mm thick). (Platyceramus) Between 41.55-41.70m, with occasional to many orangish brown relic sponge traces (up to 10mm in size).			1
41.70-43.20	41.70	93 80	0.64 0.15	73	(NI)	Between 41.70-41.91m, non intact, recovered as very silty angular to subangular fine to coarse gravel. At 41.70m, with angular to subangular small flint fragments (up to 50mm in size).			
41.70-41.95	41.70				C100/ 100				
						At 42.00m, with a subhorizontal sheet-like bivalve fossil (up to 3mm thick). (Platyceramus) At 42.30m and 42.41m, with angular to subangular small flint fragments (up to 40mm in size). Between 42.48-42.58m, discontinuity inclined 25 degrees, infilled (1mm thick) with grey marl, undulating and smooth with many black specks and rare orangish brown surface staining. Between 42.56-42.60m, with occasional grey wispy marl seams (up to 10mm thick). At 42.87m, with a orangish brown relic sponge trace (10mm in size).			
					(1)				
42.60-43.10		C							
						At 43.13m, with a sheet-like bivalve fossil (up to 3mm thick). (Platyceramus)			
43.20-44.70	43.20	100 80	0.93 0.09	62	(NI)	Between 43.20-43.50m, non intact, recovered as angular to subangular fine to coarse gravel.			
43.20-43.41	43.20				C100/ 110				
						Between 43.62-43.58m, with occasional grey wispy marl seams (up to 6mm thick). At 43.75m, with a orangish brown relic sponge trace (6mm in size). At 43.90m, with a relic burrow (20mm in length) with orangish brown staining. Between 43.95-44.03m, with occasional subhorizontal grey wispy marl seams (up to 6mm thick). At 44.00m, with a sheet-like bivalve fossil (up to 3mm thick). (Platyceramus) At 44.05m, with a relic burrow (30mm in length) with orangish brown staining. Between 44.43-44.61m, with occasional angular to subangular small and medium flint fragments (up to 70mm in size).			
					(0)				
					(NI)				
					(0)				
44.70-44.86	44.70				C100/ 80				
						End of Borehole	44.86 (61.34)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 9 of 9
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71804 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410155.5 E, 141350.6 N | Ground Level: 104.33 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (104.33)		
0.20		B				TOPSOIL: Brown sandy slightly gravelly silt. Gravel is subangular to subrounded fine to coarse of chalk and flint.			
0.20		D							
0.20		ES							
0.20			PID=<0.1				0.35 (103.98)		
0.50		B				Structureless CHALK, composed of light brown slightly sandy slightly gravelly SILT. Clasts are very weak, low density, white with rare black specks angular to subangular and fine to coarse. [GRADE Dm]			
0.50		D							
0.50		ES					0.55 (103.78)		
0.50			PID=<0.1						
1.00		B				Structureless CHALK, composed of white slightly sandy slightly gravelly SILT. Clasts are very weak, low density, white with rare black specks angular to subangular and fine to coarse. [GRADE Dm]			
1.00		D							
1.00		ES							
1.00			PID=<0.1				1.20 (103.13)		
1.20- 2.50	1.20	62	0.38	40	(AZCL)	CHALK, recovered as silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low to medium density, white with rare dark specks. matrix is white. Between 1.20-1.70m, assumed zone of core loss.			
		46	0.08		(NI)	Between 1.70-1.90m, with rare angular to subangular small flint fragments (up to 35mm in size).			
					(5)	Between 1.90-2.50m, intact section of core. Discontinuities are 45-50 degrees, closely spaced (80/110/140), clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining.			1 1 1
2.50- 4.00	2.50	67	0.18	12	(NI)	Between 2.50-2.89m, with occasional angular to subangular small flint fragments (up to 40mm in size). Between 2.73-2.80m, with an angular to subrounded medium flint (70mm in size) with a 7mm thick cortex. Between 2.89-3.26m, intact section of core. Between 2.89-3.01m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks.			
		25	0.08						
3.01- 3.16		C			(3)				
					(NI)	Between 3.26-3.50m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(AZCL)	Between 3.50-4.00m, assumed zone of core loss.			
4.00- 5.50	4.00	100	0.22	36	(NI)	Between 4.00-4.43m, non intact, recovered as silty angular to subangular fine to coarse gravel.			
		61	0.06						
4.43- 4.66		C			(2)	Very weak, locally weak, low to medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 45-50 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks and rare orangish brown surface staining.	4.43 (99.90)		1
					(NI)	Set 2 are 70-85 degrees, clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining.			

Drilling / Progress / Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.35	0.50	Inspection Pit	Arch	G.L.			22/08/19	08:00						None observed during drilling, possibly masked by flush.
1.20	0.50	Inspection Pit	AW/KH	0.35	NIL	DRY	22/08/19	18:00						
46.00	0.12	Geobor S	AW/KH	0.35	NIL	DRY	03/09/19	08:00						
				1.20	NIL	DRY	03/09/19	18:00						
				1.20	NIL	DRY	04/09/19	08:00						
				46.00	46.00	31.00	04/09/19	18:00						

Remarks

Inspection pit hand excavated to 0.35m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
At 1.20m, 150mm diameter casing installed to 1.50m depth.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574,

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR/SI
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71804
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410155.5 E, 141350.6 N
Ground Level: 104.33 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Set 3 are 25-35 degrees, closely to medium spaced (130/210/360), clean (0/0/0), undulating and rough with many black specks. Between 4.85-5.00m, non intact, recovered as angular to subangular fine to coarse gravel.			1 1
5.50- 7.00	5.50	100 69	0.20 0.07	32	(5)	Between 5.80-6.02m, with discontinuities inclined 0-5 degrees, closely spaced (70/110/150), clean, undulating, rarely stepped and rough with many black specks.			2
6.02- 6.20		C							
					(NI)	Between 6.33-6.45m, non intact, recovered as angular to subangular small flint fragments (up to 25mm in size).			2
					(7)	Between 6.58-6.68m, with many burrows (up to 55mm in size) with orangish brown staining. Between 6.61-6.66m, discontinuity inclined 10 degrees, clean, undulating and rough with many black specks. Between 6.92-7.00m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks.			3
7.00- 8.50	7.00	100 92	0.16 0.06	36	(11)	Between 7.21-7.29m, with rare burrows (of the 55mm in size) with brown staining Between 7.35-7.53m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			3 2 3 2
					(NI)				
					(10)	Between 7.62-7.70m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks.			3 3 2
					(NI)	Between 7.95-8.15m and 8.42-8.50m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(5)				1 2
					(NI)				
8.50-10.00	8.50	100 80	0.18 0.04	29	(6)	Between 8.67-8.87m, non intact, recovered as angular to subangular fine to coarse gravel. With rare angular to subangular small flint fragments (up to 60mm in size).			2
					(NI)				2 1
					(8)				2
					(NI)	Between 9.35-9.45m, non intact, recovered as very silty angular to subangular fine to medium gravel.			3
						Very weak, locally weak, medium density, white with occasional black specks CHALK. Discontinuities are: Above 26.50m, Set 1 are 0-15 degrees, very closely to widely spaced (30/420/1210), clean, rarely infilled (0/0/1) with comminuted chalk or grey marl, undulating and rough with many black specks and rare orangish brown or grey surface staining. Set 2 are 70-85 degrees, clean (0/0/0), undulating and rough with many black specks and rare orangish	9.45 (94.88)		2 2 1 1
9.83-10.00		C							

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks
AGS 2002.
Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-46.00m, Air/Mist, 100% return.

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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71804** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410155.5** E **141350.6** N Ground Level **104.33** m OD

Drilling | Properties/Sampling | Strata Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	**10.00**	**100** **97**	**0.35** **0.05**	**62**	**(5)**	**brown surface staining.** **Between 11.50-20.50m, Set 3 are 45-50 degrees, closely to widely spaced (80/560/980), clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining. [GRADE A2]** **At 10.43m, with a burrow (25mm in size) with orangish brown staining.** **Between 10.50-10.72m, with rare angular to subangular small flints (up to 20mm in size).** **Between 10.72-10.88m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks.** **Between 11.31-11.50m, discontinuity inclined 65 degrees, clean, undulating and rough with many black specks.** **Between 11.43-11.50m, with rare burrows (up to 30mm in size) with orangish brown staining.**			1 1 1 1 1
11.50-13.00	**11.50**	**100** **79**	**0.30** **0.08**	**55**	**(NI)** **(5)** **(NI)** **(7)**	**Between 11.50-11.54m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks.** **Between 11.55-11.59m, with rare burrows (up to 25mm in size) with orangish brown staining.** **Between 11.70-11.82m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subangular small flint fragments (up to 15mm in size).** **At 12.16m, with a subhorizontal grey marl seam (1mm thick).** **Between 12.68-12.86m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular to subangular small flints (up to 35mm in size).**			3 1 3 3 3
13.00-14.50 **13.31-13.63**	**13.00**	**100** **92** **C**	**0.34** **0.03**	**72**	**(2)** **(NI)** **(5)**	**Between 13.09-13.13m, with occasional grey marl seams (up to 1mm thick).** **Between 13.39-13.58m, with rare orangish brown relic sponge traces (up to 25mm in size).** **At 13.51m, with a subhorizontal grey marl seam (1mm thick).** **Between 13.85-14.00m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular to subangular small flint fragments (up to 60mm in size).** **Between 14.20-14.28m, with occasional burrows (up to 35mm in size).** **Between 14.42-14.50m, with rare orangish brown relic sponge traces (up to 15mm in size).**			1 1 1 3 2
14.50-16.00	**14.50**	**92** **66**	**0.23** **0.05**	**53**	**(NI)**	**Between 14.66-14.88m, discontinuity inclined 90 degrees, clean, undulating and rough with many black specks.** **Between 14.85-15.26m, non intact, recovered as silty angular to subangular fine to coarse gravel. With rare angular to subangular small flint fragments (up to 25mm in size).**			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **3 of 10**
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71804
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410155.5 E 141350.6 N	Ground Level	104.33 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									1
						Between 15.82-16.00m, assumed zone of core loss.			3
16.00-17.50	16.00	100 89	0.41 0.08	63	(4)				2 1
16.08-16.40		C							
						Between 16.51-16.57m, with rare orangish brown relic sponge traces (up to 35mm in size).			3 1
					(NI)	Between 17.00-17.16m, non intact, recovered as angular to subangular fine to coarse gravel.			2
						At 17.22m, with a subhorizontal grey marl seam (1mm thick).			3 1
17.50-19.00	17.50	100 100	0.55 0.09	79		Between 17.74-17.85m, with many orangish brown relic sponge traces (up to 65mm in size). Between 17.85-18.40m, with occasional orangish brown relic sponge traces (up to 45mm in size).			1
						At 18.40m, with a subangular to subrounded small nodular flint (25mm in size).			3 3
						Between 18.67-19.00m, with rare orangish brown relic sponge traces (up to 15mm in size).			2
19.00-20.50	19.00	100 100	0.48 0.07	57	(3)	Between 19.12-19.21m, with rare orangish brown relic sponge staining (up to 10mm in size).			1
						Between 19.44-19.59m, with subangular to rounded small nodular flints (up to 35mm in size).			3
19.77-20.27		C							3

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71804**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410155.5** E **141350.6** N
Ground Level **104.33** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						At 20.30m, with an angular small flint fragment (15mm in size).			1 1
20.50-22.00	**20.50**	**100** **91**	**0.25** **0.05**	**67**		**Between 20.50-20.60m, with rare orangish brown relic sponge traces (15mm in size).**			1
									1
					(NI)	**Between 20.98-21.12m, non intact, recovered as silty angular to subangular fine to coarse gravel. With many angular to subangular small flint fragments (up to 60mm in size).**			1 2 1
22.00-23.50	**22.00**	**100** **100**	**0.65** **0.03**	**75**					1 1
22.70-23.15		**C**			**(3)**	**At 22.62m, with 2 No. subangular to rounded small nodular flints (up to 25mm in size).** **Between 22.80-23.00m, with occasional orangish brown relic sponge traces (up to 15mm in size).**			1 2 1
23.50-25.00	**23.50**	**80** **67**	**0.60** **0.02**	**59**		**Between 23.45-23.50m, with many burrows (up to 45mm in size) with orangish brown staining.**			1
24.34-24.70		**C**							
					(AZCL)	**Between 24.70-25.00m, assumed zone of core loss.**			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71804** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410155.5** E **141350.6** N Ground Level **104.33** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
25.00-26.50	**25.00**	**93** **77**	**0.76** **0.12**	**73**	**(NI)**	**Between 25.00-25.20m, with angular to subangular small to medium flint fragments (up to 90mm in size).**			
						At 25.52m and 25.83m, with occasional orangish brown relic sponge traces (up to 10mm in size).			1
					(1)	**At 26.40m, with angular to subangular small and medium flint fragments (up to 60mm in size).**			1
26.50-28.00	**26.50**	**99** **88**	**0.67** **0.18**	**73**					
26.50-26.97		**C**				**Between 26.81-26.93m, with occasional orangish brown relic sponge traces (up to 20mm in size).**			
						At 27.07m, with occasional orangish brown relic sponge traces (up to 10mm in size). **Between 27.17-27.20m, with occasional angular to subangular small flint fragments (up to 20mm in size).**			1
					(NI)	**Between 27.46-27.60m, non intact, recovered as angular to subangular fine to coarse gravel.**			
						Between 27.65-27.74m, with a horizontal grey wispy marl seam (8mm thick).			3
						Between 27.85-28.30m, with occasional burrows (up to 70mm in length) infilled (up to 6mm thick) with light grey marl.			
28.00-29.50	**28.00**	**100** **90**	**0.64** **0.50**	**80**					
						Between 28.34-28.40m, with occasional orangish brown relic sponge traces (up to 15mm in size).			
					(1)	**Between 28.60-28.76m, with occasional orangish brown relic sponge traces (12mm in size).**			3
						At 28.89m, with many orangish brown relic sponge traces (12mm in size).			
						Between 29.10-29.26m, with occasional grey marl seams (up to 4mm thick).			
						Between 29.30-29.46m, discontinuity inclined 60 degrees, infilled (10mm thick) with a sheet flint, planar and rough with rare black specks.			
							29.50 **(74.83)**		
29.50-31.00	**29.50**	**97** **77**	**0.52** **0.12**	**53**	**(3)**	**Very weak, locally weak, medium density, white with occasional black specks CHALK.** **Discontinuities are:** **Above 34.00m, Set 1 are 0-10 degrees, very closely to very widely spaced (50/700/1280), clean or infilled (0/1/1) with grey marl, undulating or stepped and rough with many black specks and rare orangish brown surface staining.** **Below 34.00m, Set 2 are 50-60 degrees, medium to**			

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71804** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410155.5** E **141350.6** N Ground Level **104.33** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	widely spaced (500/850/1480), clean or infilled (0/1/1) with grey marl, undulating or stepped and rough with many black specks.			
30.47-30.72		C			(2)	[GRADE B1] Between 29.50-26.66m, discontinuity inclined 80 degrees, infilled (1mm thick) with grey marl, undulating and rough with many black specks and rare orangish brown surface staining. Between 29.78-30.00m, incipient discontinuity inclined 80 degrees, clean, planar and rough with many black specks (partly open). Between 30.10-30.20m, with angular to subangular small flint fragments (up to 40mm size). At 30.29m, 30.36m and 30.45m, with occasional horizontal grey wispy marl seams (up to 5mm thick).			1
					(NI)	Between 30.60-30.72m, with occasional orangish brown relic sponge traces (up to 5mm in size). Between 30.82-31.00m, non intact, recovered as angular to subangular fine to coarse gravel.			
31.00-32.50	31.00	97 88	0.77 0.14	80		Between 31.00-31.10m, with occasional angular to subangular small and medium flint fragments (up to 80mm in size). At 31.40m, with angular to subangular small flint fragments (up to 40mm in size). At 31.60m and 32.00m, with a subhorizontal grey wispy marl seam (up to 4mm thick).			1
						Between 32.15-32.27m, with occasional orangish brown relic sponge traces (up to 10mm in size). At 32.26m, with an angular to subangular small flint fragment (30mm in size). Between 32.27-32.33m, with occasional subhorizontal grey wispy marl seams (up to 10mm thick).			1 1
32.50-34.00	32.50	99 93	0.86 0.19	80		At 32.55m, with a subhorizontal grey wispy marl seam (8mm thick). Between 32.69-32.74m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks. At 32.75m, with occasional angular to subangular small flint fragments (up to 20mm in size).			
33.12-33.54		C				At 33.18 and 33.24m, with occasional subhorizontal grey wispy marl seams (up to 4mm thick). At 33.45m, with a grey marl seam (2mm thick). At 33.50m and 33.90m, with occasional orangish brown relic sponge traces (up to 5mm in size).			1
34.00-35.50	34.00	100 88	0.42 0.34	67	(2)				2 2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71804** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410155.5** E **141350.6** N Ground Level **104.33** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									2
35.50-37.00	**35.50**	**100** **89**	**0.55** **0.27**	**73**					
36.21-36.51		**C**							1
									2
37.00-38.50	**37.00**	**100** **93**	**0.80** **0.52**	**87**		**At 37.18m and 37.33m, with occasional orangish brown relic sponge traces (up to 5mm in size).**			
						At 37.40m, with a sheet-like bivalve fossils (up to 3mm thick). (Platyceramus)			
					(NI)	**Between 37.46-37.52m, with occasional orangish brown relic sponge traces (up to 15mm in size).**			
						Between 37.52-37.60m, with rare angular to subangular small and medium flint fragment (up to 80mm in size).			
					(0)	**Between 38.00-38.08m, with occasional orangish brown relic sponge traces (up to 15mm in size).**			
						At 38.28-38.38m, with a subhorizontal grey wispy marl seam (3mm thick).			
						At 38.28m, with a grey marl seam (up to 5mm thick).			
					(NI)	**Between 38.40-38.46m, with many angular to subangular small flint fragments (up to 40mm in size).**			
38.50-40.00	**38.50**	**100** **97**	**0.73** **0.19**	**91**		**Between 38.40-38.74m, with occasional orangish**			
38.50-38.75		**C**			**(0)**	**brown relic sponge traces (up to 15mm in size).**			
						Between 38.90-38.96m, with angular to subangular small and medium flint fragments (up to 60mm in size).			
						At 39.03m, with many angular to subangular small flint fragments (up to 40mm in size).			
						Between 39.12-39.15m, with occasional subhorizontal grey wispy marl seams (up to 5mm in size).			1
					(1)				
						At 39.80m, with occasional orangish brown relic sponge traces (up to 10mm in size).			
						At 39.88m, with occasional angular to subangular small and medium flint fragments (up to 60mm in size).			
							40.00 (64.33)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71804 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410155.5 E, 141350.6 N | Ground Level: 104.33 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
40.00-41.50	40.00	93 30	0.50 0.02	33	(NI)	CHALK, recovered as silty angular to subangular fine to coarse GRAVEL. Clasts are very weak to weak, low to medium density and cream with occasional orangish brown relic sponge traces (up to 10mm in size). Matrix is cream. At 40.00m, with a subhorizontal sheet-like bivalve fossils (up to 3mm thick). (Platyceramus) Between 40.66-40.80m, with angular to subangular small and medium flint fragments (up to 105mm in length).	40.00 (64.33)		
					(0)	Weak, medium and high density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 50-60 degrees, clean or infilled (0/1/10) with comminuted chalk and sheet flints, stepped or planar and rough with many black specks. At 41.16m, with a sheet-like bivalve fossils (up to 3mm thick). (Platyceramus)	40.90 (63.43)		
41.50-43.00 41.50-41.80	41.50	100 88 C	0.64 0.08	71	(9)	Between 41.98-42.22m, discontinuity inclined 80 degrees, infilled (5mm thick) with a sheet flint, undulating and rough with many black specks. Between 42.03-42.08m, discontinuity inclined 30 degrees, infilled (1mm thick) with grey marl, planar and rough with many black specks. Between 42.28-42.36m, with occasional orangish brown relic sponge traces (up to 5mm in size). Between 42.30-42.36m, discontinuity inclined 80 degrees, clean, undulating and rough with many black speck and occasional orangish brown surface staning. At 42.42m, with an angular to subangular small flint fragment (30mm in size). Between 42.63-42.75m, with occasional horizontal grey wispy marl seams (up to 12mm in size). Between 42.95-43.00m, with occasional orangish			1
43.00-44.50	43.00	100 100	0.90 0.57	99	(0)	brown relic sponge traces (up to 10mm in size). At 43.23m, with a sheet-like bivalve fossil (up to 2mm thick). (Platyceramus) At 43.44m, with occasional orangish brown relic sponge traces (up to 6mm in size). Between 43.57-43.60m, discontinuity inclined 15 degrees, clean, planar and rough with many black specks. At 43.62m, with a sheet-like bivalve fossil (up to 3mm thick). (Platyceramus) At 43.74m, with rare angular to subangular small flint fragments (up to 30mm in size). Between 43.77-43.85m, with occasional subhorizontal grey wispy marl seams (up to 10mm thick). At 44.35m, with a grey wispy marl seam (8mm thick). Between 44.41-44.50m, with a subhorizontal grey wispy marl seam (5mm thick).			
44.50-46.00 44.70-44.95	44.50	100 83 C	0.32 0.25	59	(NI)	Between 44.50-44.55m, with angular to subangular small and medium flint fragments (up to 70mm in size). At 44.70m, with angular to subangular small flint fragments (up to 45mm in size). At 44.86 and 44.90mm with occasional sheet-like bivalve fossils (up to 2mm thick). (Platyceramus)			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71804
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410155.5 E 141350.6 N	Ground Level	104.33 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(2)	At 45.10m, with a horizontal grey wispy marl seam (3mm thick). Between 45.25-45.34m, with occasional orangish brown relic sponge traces (up to 5mm in size). At 45.45m, with a sheet-like bivalve fossils (up to 3mm thick). (Platyceramus) Between 45.53-45.68m, discontinuity inclined 40 degrees, clean, undulating and smooth with many black specks. At 45.70m, with angular to subangular small and medium flint fragments (up to 80mm in size).			1 1
						End of Borehole	46.00 (58.33)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71806
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410249.0 E, 141410.5 N	Ground Level	105.59 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (105.59)		
0.10- 0.20		B				**TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many rootlets. Gravel is subangular to subrounded fine to coarse flint and chalk.**	0.20 (105.39)		
0.10- 0.20		D							
0.10- 0.20			PID=<0.1						
0.50		B				**Structureless CHALK, composed of cream slightly gravelly SILT. Clasts are weak, high density, white, angular to subrounded and fine to coarse. With occasional angular to subrounded small and medium flints (up to 70mm in size). [GRADE Dm]**			
0.50		D							
0.50			PID=<0.1						
1.00		B							
1.00		D							
1.00			PID=<0.1						
							1.20 (104.39)		
1.20- 2.50	1.20	77				**CHALK, recovered as a very silty, locally silty, angular to subangular fine to coarse GRAVEL with a low cobble content. Clasts are weak, low density and white. Matrix is white. With many angular to subangular small nodular flint fragments (<25mm). Flints have a <1mm thick cortex. With rare orangish brown mottling on core.**			
		42							
1.40- 1.50		D			(NI)	**Between 1.65-2.20m, slightly silty. With occasional angular to subangular small nodular flint fragments (<30mm in size). With much orangish brown staining (possible sponges) on clasts.**			
						Between 2.20-2.50m, assumed zone of core loss.			
					(AZCL)				
							2.50 (103.09)		
2.50- 4.00	2.50	100	0.14	9		**Very weak, low and medium density white CHALK, with many black specks and rare orangish brown mottling. Discontinuities are:**			2
		63	0.02						
2.65- 2.77		C			(11)	**Set 1 are 0-10 degrees, closely to medium spaced (30/250/660) with rare comminuted chalk infill (0/1/1), undulating, locally planar, rough with many black specks and rare orangish brown surface mottling.**			1
					(NI)				2
						Set 2 are 40-50 degrees, closely to medium spaced (50/210/410), with rare comminuted chalk infill (0/1/1), undulating, locally planar and stepped, rough with many black specks and rare orangish brown mottling.			1
					(7)				2
						Below 4.25m, Set 3 are 80-90 degrees, clean or rare comminuted chalk infill (0/0/1), stepped, locally undulating, rough with many black specks and rare orangish brown mottling. [GRADE B2]			2
									2
					(NI)	**Between 2.88-3.00m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content.**			
						At 3.26m, with some orangish brown staining (<3mm in size). (Possible sponges).			
						Between 3.42-4.00m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With occasional orangish brown staining (<10mm in size). (Possible sponges).			
4.00- 5.50	4.00	87	0.10	20					2
		61	0.04						1
						Between 4.00-4.17m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. With angular to subangular small nodular flint fragments (up to 50mm in size) with a 3mm thick cortex.			3
					(13)				2
						Between 4.53-4.57m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks.			
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew
0.20	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	MK
46.00	0.12	Geobor S	AW/KH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			21/08/19	08:00
0.20	NIL	DRY	21/08/19	18:00
0.20	NIL	DRY	29/08/19	08:00
1.20	NIL	DRY	29/08/19	18:00
1.20	NIL	DRY	02/09/19	08:00
28.00	28.00	27.60	02/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.20m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
At 1.50m, 150mm diameter casing installed to 1.50m depth.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71806
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410249.0 E, 141410.5 N	Ground Level	105.59 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(8)	Between 4.57-5.07m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. Clasts with rare orangish brown mottling. With occasional angular to subangular small and medium nodular flint fragments (up to 70mm in size) with a 3mm thick cortex.			1 3
					(AZCL)	Between 5.31-5.50m, assumed zone of core loss.			
5.50- 7.00	5.50	81 56	0.19 0.05	29	(5)				
5.50- 5.69		C			(NI)	Between 5.69-5.79m, non intact, recovered as silty angular to subangular fine to coarse gravel. With many angular to subangular small nodular flints (up to 30mm in size) with a 1mm thick cortex.			1 1 2
					(12)	Between 6.24-6.33m and 6.24-6.33m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular to subrounded cobble content.			1 2 1 1 3 1
					(NI)	Between 6.72-7.00m, assumed zone of core loss.			
					(AZCL)				
7.00- 8.50	7.00	93 79	0.25 0.13	68					1
7.13- 7.38		C			(5)				
					(NI)	Between 7.38-7.47m, non intact, recovered as silty angular to subangular fine to coarse gravel. With angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.			
					(4)				1 1 2
					(NI)	Between 7.98-8.23m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content. With angular to subangular small and medium flint fragments (up to 65mm in size) with a 1mm thick cortex.			
					(12)	Between 8.40-8.50m, assumed zone of core loss.			2 3
					(AZCL)	Between 8.50-8.64m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content.			
8.50-10.00	8.80	100 85	0.10 0.05	13	(NI)				2 1
					(8)	At 9.11m, with angular to subangular small nodular flint fragments (up to 30mm in size) with a 3mm thick cortex.			1 3 2 1 2
9.51- 9.60		C				Between 9.51-9.68m, with much orangish brown staining (up to 15mm in size). (Possible sponges).			1 2
						Between 9.84-10.00m, with rare orangish brown staining (up to 10mm in size). (Possible sponges).			2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
28.00	28.00	27.80	03/09/19	08:00
46.00	46.00	34.80	03/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks AGS Stratigraphic Nomenclature Provided by the Client.
Flush: 1.20-46.00m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71806 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410249.0 E, 141410.5 N | Ground Level: 105.59 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	10.00	93 63	0.12 0.07	8	(NI) (10) (NI) (9)	Between 10.00-10.24m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular to subrounded cobble content. With angular to subangular small nodular flint fragments (up to 50mm in size) with a 3mm thick cortex. Between 10.26-10.42m, with much orangish brown staining (up to 5mm in size). (Possible sponges). Between 11.40-11.50m, assumed zone of core loss.			2 1 2 3 2 2 1 3
11.50-13.00	11.50	100 93	0.35 0.03	67	(AZCL) (6) (NI)	At 11.61m, with some orangish brown staining (up to 5mm thick). (Possible sponges) Between 11.86-11.96m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. With angular to subangular small and medium nodular flint fragments (up to 60mm in size).			1 1 1 1 1
12.36-12.60		C			(6)	Between 12.60-13.00m, with occasional small orangish brown staining (up to 10mm in size). (Possible sponges).			3 1
13.00-14.50	13.00	100 83	0.27 0.02	51	(NI) (7) (NI) (8)	Very weak and weak, medium density, locally low density, white CHALK with many black specks and rare orangish brown mottling. Discontinuities are: Set 1 are 0-10 degrees, subhorizontal closely to medium spaced (20/230/980) clean, undulating, locally planar, rough with many black specks and rare orangish brown surface mottling. Below 15.16m, Set 2 are 40-50 degrees, closely to medium spaced (130/240/560), clean, undulating, locally stepped, and rough with many black specks and rare orangish brown surface mottling. [GRADE A2] Between 13.00-13.29m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex. At 13.56m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges). Between 13.92-14.20m, with much orangish brown staining (up to 10mm in size). (Possible sponges). Between 14.05-14.24m, non intact, recovered as angular to subangular coarse gravel. With a subangular medium nodular flint (80mm in size).	13.00 (92.59)		1 1 1 1 1 1 1 1 1
14.50-16.00 14.78-15.16	14.50	90 73 C	0.38 0.10	57	(NI) (6)	Between 14.57-14.68m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content.			1 1

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71806
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410249.0 E 141410.5 N	Ground Level	105.59 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						At 15.16-15.21m, discontinuity inclined 35 degrees, clean, planar and rough with many black specks.			1
					(NI)	Between 15.32-15.51m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many angular to subangular small nodular flint fragments (up to 50mm in size) with a 3mm thick cortex.			
					(3)	At 15.32, discontinuity inclined 20 degrees, clean, undulating and rough with occasional black specks and orangish brown surface staining.			1
					(AZCL)	Between 15.67-15.85m, with much orangish brown staining (up to 10mm in size). (Possible sponges). Between 15.85-16.00m, assumed zone of core loss.			
16.00-17.50	16.00	100 89	0.32 0.04	37	(8)	At 16.34m, with a subangular medium nodular flint (90mm in size) with a 3mm thick cortex..			1 2 1
					(NI)	At 15.37-16.49, discontinuity inclined 85 degrees, clean, undulating and rough with many black specks. Between 16.49-16.74m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content.			2
16.96-17.28		C			(9)	At 16.91-16.96, discontinuity inclined 20 degrees, clean, undulating and rough with occasional black specks.			1
						At 17.28-17.46m, discontinuity inclined 85 degrees, clean, undulating and rough with many black specks.			1
17.50-19.00	17.50	98 56	0.23 0.04	35	(10)	Between 17.46-17.50m and 17.59-18.82m, with much orangish brown staining (up to 10mm in size). (Possible sponges).			1 1 1
					(NI)	Between 17.92-18.17m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. Clasts with occasional orangish brown mottling.			1 2
					(22)	Between 18.26-18.71m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular to subrounded cobble content. Clasts with occasional orangish brown mottling. With many angular to subangular small sheet flints (up to 40mm in size).			1 2
					(NI)	At 18.80m, with occasional orangish brown staining (up to 10mm in size). (Possible sponges).			1
19.00-20.50	19.00	100 100	0.16 0.02	45		At 18.92-18.97m, discontinuity inclined 25 degrees, clean, planar and rough with many black specks and rare orangish brown surface staining. Between 19.05-10.38m, discontinuity inclined 75 degrees, clean, undulating and striated with many black specks and rare orangish brown surface staining.			1 1 1 2 1 2 2 2 2 2
					(8)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71806
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410249.0 E 141410.5 N	Ground Level	105.59 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 20.10-20.50m, with occasional orangish brown staining (up to 10mm in size). (Possible sponges).			2
20.34-20.50		C							1
20.50-22.00	20.50	87 75	0.37 0.11	57	(NI)	Between 20.50-20.68m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subrounded cobble content. With angular to subangular small and medium nodular flint fragments (up to 70mm in size).			1
									1
									1
					(4)	At 21.32m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges).			1
						Between 21.51-21.81m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges). With occasional angular to subangular small nodular flint fragments (up to 30mm in size). Between 21.81-22.00m, assumed zone of core loss.			1
					(AZCL)				
22.00-23.50	22.00	100 93	0.41 0.09	71					
22.00-22.25		C				At 22.18m, with much orangish brown staining (up to 10mm in size). (Possible sponges).			1
					(3)				1
						Between 22.98-23.10m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many angular to subangular small nodular flint fragments (up to 50mm in size) with a 3mm thick cortex.			1
					(NI)				1 2
						Between 23.40-23.50m, with occasional orangish brown staining (up to 10mm in size). (Possible sponges).			1
23.50-25.00	23.50	100 88	0.56 0.02	41	(7)				1
									2
									1
					(NI)	Between 23.98-24.16m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. With occasional angular to subangular small and medium nodular flint fragments (up to 65mm in size). At 24.30, discontinuity inclined 25 degrees, clean, undulating and rough with rare black specks. At 24.37-24.44m, discontinuity inclined 30 degrees, clean, stepped and rough with occasional black specks and rare orangish brown surface staining. At 24.44m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges). At 24.69m, with an orangish brown stain (3mm in size). (Possible sponge).			
					(7)				2
						At 24.90m, with rare orangish brown staining (up to 5mm in size). (Possible sponge).			1
									2
									1
					(NI)	Weak, locally very weak, medium density white CHALK	25.00 (80.59)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71806
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410249.0 E, 141410.5 N
Ground Level: 105.59 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
25.00-26.50	25.00	93 59	0.44 0.10	49	(5)	with many black specks and rare orangish brown mottling. Discontinuities are: Set 1 are 0-10 degrees, closely to widely spaced (60/270/1180), clean with rare comminuted chalk infill (0/0/1), undulating, locally planar, rough with many black specs and rare orangish brown sponges (<5mm in size). [GRADE A2]	25.00 (80.59)		1 1
					(NI)	Between 25.00-25.07m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With angular to subangular small and medium flint fragments (up to 80mm in size) with a 3mm thick cortex.			
					(2)	Between 25.41-25.56m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subrounded cobble content.			1
					(NI)	Between 25.73-26.00m, with occasional orangish brown staining (up to 10mm in size). (Possible sponges).			1
26.24-26.40		C			(7)	Between 26.00-26.11m, non intact, recovered as slightly silty angular to subangular fine to coarse gravel.			1
					(AZCL)	Between 26.11-26.24m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges).			1
26.50-28.00	26.50	57 43	0.32 0.09	30		Between 26.40-26.50m, assumed zone of core loss. At 26.59m, with occasional angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.			1
					(7)	At 26.78m, with a subangular small nodular flint (25mm in size) with a 1mm thick cortex.			1
						Between 26.91-26.97m, non intact, recovered as slightly silty angular to subangular fine to coarse gravel.			1
					(NI)	Between 27.23-27.35m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. With angular to subangular small and medium nodular flints (up to 100mm in size) with a 3mm thick cortex.			1
					(AZCL)	Between 27.35-28.00m, assumed zone of core loss.			
28.00-29.50	28.00	91 84	0.36 0.10	64					1
					(4)	At 28.57m, with a burrow (<10mm x <3mm in size) infilled with grey marl.			1
28.90-29.11		C				Between 28.90-29.11m, with occasional orangish brown staining (up to 15mm in size). (Possible sponges).			1
						Between 29.11-29.19m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content.			
						Between 29.19-29.37m, with occasional orangish brown staining (up to 10mm in size) (Possible sponges).			1
					(AZCL)	Between 29.37-29.50m, assumed zone of core loss.			
29.50-31.00	29.50	100 62	0.43 0.07	51	(NI)	Between 29.50-29.62m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular to subrounded cobble content. With angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.			1
29.87-30.12		C							

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71806** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410249.0** E **141410.5** N Ground Level **105.59** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(4)	Between 30.32-30.35m, with a wispy grey marl seam (5mm thick) with interwoven marl partings (<1mm thick). At 30.58m, with orangish brown mottling (5mm in size). (Possible sponges).			1 1 1
					(NI)	Between 30.58-31.00m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. With occasional angular to subangular small nodular flint fragments (up to 50mm in size) with a 1mm thick cortex.			
31.00-32.50	31.00	100 97	0.36 0.16	74	(5)	Between 31.00-31.20m, with occasional orangish brown staining (up to 10mm in size). (Possible sponges). Between 31.00-31.20m, discontinuity inclined 85 degrees, clean, stepped and rough with many black specks and rare orangish brown surface staining. At 31.67m, with angular to subangular small nodular flint fragments (up to 20m in size) with a 1mm thick cortex. Between 31.67-32.00m, with much orangish brown mottling (up to 15mm in size). (Possible sponges). Between 32.00-32.50m, discontinuity inclined 85 degrees, clean, stepped and rough with occasional black specks. At 32.15m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges). At 32.33m, with a wispy grey marl seam (10mm thick) with interwoven marl partings (<1mm thick).			1 1 1 1 1 1 1
32.50-34.00 32.85-33.18	32.50	77 53 C	0.33 0.03	33	(NI) (AZCL)	Between 32.59-32.70m, discontinuity inclined 40 degrees, clean, undulating and rough with occasional black specks. At 32.75m, with a light grey wispy marl seam (5mm thick) with interwoven grey marl partings (<1mm thick). At 33.02m, with a light grey wispy marl seam (8mm thick) with interwoven marl partings (<1mm thick). At 33.25m, with a marl seam (3mm thick) with marl parting (<1mm thick). At 33.40m, with a subangular medium sheet flint (20mm thick and full core diameter) and nodular flint fragment (20mm in size) with a 1mm thick cortex. Between 33.50-33.66m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. Between 33.66-34.00m, assumed zone of core loss.			1 1 1 1
34.00-35.50	34.00	100 83	0.40 0.16	72	(3)	Between 34.63-34.70m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel. With angular to subangular small nodular flints (up to 30mm in size). Between 35.70-35.78m, discontinuity is 85 degrees, clean, undulating and rough with rare black specks. Between 35.00-35.19m, with a zoophycos flint (1mm thick x full diameter).			1 1 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
Checked by **CPL**
Figure **7 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71806 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410249.0 E, 141410.5 N | Ground Level: 105.59 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 35.00-35.19m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. Between 35.19-35.50m, discontinuity is 85 degrees, clean, undulating and rough with occasional black specks.			1
35.50-37.00	35.50	83 67	0.31 0.08	46	(6)	Between 35.83-36.05m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges).			1 1
36.25-36.57		C			(AZCL)	At 36.20m, with angular to subangular small nodular flint fragments (up to 30mm in size). At 36.25m, discontinuity inclined 20 degrees, clean, stepped and rough with many black specks. Between 36.35-36.40m, with a light grey marl seam (5mm thick) with wispy interwoven light grey marl partings (up to 5mm thick). Between 36.64.36.78m, discontinuity is 25 degrees, clean, undulating and rough with many black specks. Between 36.71-36.75m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel. With angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.			1 1
37.00-38.50	37.00	100 67	0.47 0.02	41	(4)	Between 36.75-37.00m, assumed zone of core loss. At 37.06m, with a light grey wispy marl seam (5mm thick) with light grey interwoven marl partings (<1mm thick). Between 37.28-37.36m, discontinuity is 40 degrees, clean, planar and rough with many black specks and rare orangish brown surface staining. Between 37.92-38.29m, with much orangish brown staining (up to 5mm thick). (Possible sponges). Between 37.92-38.21m, discontinuity is 45 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 38.23m, discontinuity is 20 degrees, clean, planar and smooth with occasional black specks and orangish brown surface staining.			1 1
38.50-40.00 38.50-39.04	38.50	100 91 C	0.82 0.14	70	(NI)	Between 38.29-38.50m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many small nodular flint fragments (up to 30mm in size) with a 1mm thick cortex.	38.50 (67.09)		
					(0)	Very weak and weak, medium and high density white CHALK with many black specks and rare orangish brown mottling. Discontinuities are: Set 1 are 0-10 degrees, closely to widely spaced (110/380/610), clean, undulating, locally planar and rough with many black specks and occasional orangish brown surface staining. [GRADE A2] Between 38.70-38.88m, with occasional orangish brown staining (up to 5mm in size)> (Possible sponges). At 38.92m, with a wispy marl seam (10mm thick) with interwoven marl partings (<1mm thick). Between 39.04-39.19m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel and cobbles. With many angular to subangular small and medium nodular flint fragments (up to 100mm in size) with a 1mm thick cortex. At 39.70m, with angular to subangular small nodular and finger flints (up to 40mm in size) with a 1mm thick cortex.			1 1
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71806 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410249.0 E, 141410.5 N | Ground Level: 105.59 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
40.00-41.50	40.00	100 87	0.48 0.11	64	(4)	At 39.87m, with angular to subangular small nodular flint fragments (up to 20mm in size) with a 1mm thick cortex. Between 39.87-39.90m, discontinuity is 30 degrees, clean, undulating and rough with many black specks and orangish brown surface staining. At 39.98m, with a grey marl seam (10mm thick) with marl partings (<3mm thick). At 40.25m, with a ribbed shell fragment (3mm in size). (Possible platyceramus) along Set 1 discontinuity. At 40.66m, with a ribbed shell fragment (6mm in size). (Possibly platyceramus). At 40.73m, with a wispy marl seam (5mm thick) with marl partings (<1mm thick).			1 1 1 1
					(NI)	Between 41.13-41.23m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many angular to subangular small nodular flint fragments (up to 30mm in size).			
					(4)	Between 41.23-41.37m, discontinuity inclined 85 degrees, infilled (2mm thick) with a sheet flint, undulating and rough with many black specks and rare orangish brown surface staining. At 41.53m, with angular to subangular small nodular flint fragments (up to 20mm in size) with a 1mm thick cortex. At 41.70m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges).			1
41.50-43.00 41.97-42.42	41.50	100 84 C	0.88 0.03	75	(2)	At 41.90m and 42.13m, with light grey marl seams (up to 5mm thick) interwoven with marl partings (<1mm thick).			1
					(NI)	Between 42.67-42.85m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel and cobbles. With many subangular to subrounded small and medium nodular flint fragments (up to 100mm in size). At 42.95m, with a light grey wispy marl seam (5mm thick) with marl partings (<1mm thick).			1
43.00-44.50	43.00	100 100	0.43 0.06	90	(3)	At 43.19m, with a sheet-like inceramid bivalve fragment (up to 15mm in size). With occasional angular to subangular small nodular flint fragments (up to 30mm in size). Between 43.19-43.63m, with much orangish brown staining (up to 10mm in size). (Possible sponges). At 43.36m, with angular to subangular small nodular flint fragments (up to 30mm in size) with a 1mm thick cortex. At 43.63m, with a light grey marl seam (10mm thick) with marl partings (<1mm thick). Between 43.91-44.02m, with occasional orangish brown staining (up to 5mm in size)> (Possible sponges). Between 43.97-44.02m, discontinuity inclined 40 degrees, infilled (1mm thick) with marl, planar and striated with many black specks, rare orangish brown or light grey surface staining and slickenlines. At 44.40m, with occasional subhorizontal ribbed shell fragments (up to 10m in size). (Possibly platyceramus).			1 1 1 1
44.50-46.00 44.65-45.25	44.50	100 86 C	0.61 0.14	82		At 44.64m, with a sheet-like ribbed shell fragments (5mm thick). Between 44.71-44.76m, with grey marl seams (up to 10mm thick) with many interwoven grey marl partings (<1mm thick).			1 1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71806**
Project No **PC197626**
Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410249.0** E **141410.5** N
Ground Level **105.59** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 45.15-45.18m, with grey marl seams (10mm thick) with many interwoven grey marl partings (<1mm thick).			1
					(NI)	**Between 45.61-45.73m, non intact, recovered as a slightly silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.**			1
					(7)	**Between 45.90-46.00m, discontinuity is 45 degrees, clean, planar and rough with many black specks and rare orangish brown surface staining.**	**46.00**		
						End of Borehole	**(59.59)**		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
Checked by **CPL**
Figure **10 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71807
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410348.1 E 141413.1 N	Ground Level	100.61 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (100.61)		
						TOPSOIL : Soft brown slightly sandy slightly gravelly silt. Gravel is subangular to subrounded fine to coarse chalk and flint.	0.20 (100.41)		
0.20		B							
0.20		D							
0.20		ES							
0.20			PID=<0.1			**Structureless CHALK, composed of silty, locally very silty, angular to subangular fine to coarse GRAVEL with a low subangular cobble content. Clasts are very weak, low and medium density and white with many black specks and occasional orangish brown mottling. Matrix is cream. With occasional subangular to subrounded small and medium flints. [GRADE Dc]**			
0.50		B							
0.50		D							
0.50		ES							
0.50			PID=<0.1						
1.00		B							
1.00		ES							
1.00			PID=<0.1						
1.20- 2.50	1.20	54 5		0		**CHALK, recovered as silty, locally very silty, angular to subangular fine to coarse GRAVEL with a low subangular cobble content. Clasts are very weak, low density and white with many black specks and occasional orangish brown mottling. Matrix is white, locally cream. With occasional subangular to subrounded small and medium flints.**	1.20 (99.41)		
1.40- 1.50		C			(NI)	**Below 1.20m, with many angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.**			
						Between 2.01-2.50m, assumed zone of core loss.			
					(AZCL)				
2.50- 4.00	2.50	62 21	0.04 0.02	0					
					(NI)	**Between 2.90-3.00m, with angular to subangular small and medium nodular flint fragments (up to 80mm in size) with a 5mm thick cortex.**			
					(27)	**Between 3.10-3.25m, solid core. Discontinuities are inclined 30-35 degrees, very closely spaced (20/40/60), clean or infilled (0/1/1) with comminuted chalk, planar or undulating and rough**			
3.30- 3.40		C			(NI)	**with many black specks.**			
						Between 3.43-4.00m, assumed zone core loss.			
					(AZCL)				
4.00- 5.50	4.00	84 34	0.16 0.06	23	(NI)				
							4.25 (96.36)		
					(14)	**Very weak, locally weak, low and medium density, white with many black specks and rare orangish brown mottling CHALK.**			1 3
					(NI)	**Discontinuities are:**			
						Set 1 are 0-10 degrees, clean rarely infilled (0/0/1) with comminuted chalk, undulating and rough			3
					(17)	**with many black specks and rare orangish brown surface staining.**			
					(NI)	**Below 5.50m, Set 2 are 30-40 degrees, very closely to closely spaced (50/120/400), clean or infilled**			1
						(0/0/1) with comminuted chalk or rare greenish grey			3
					(11)	**marl, undulating or stepped and rough with many black specks and rare orangish brown surface**			1

Drilling / Progress / Groundwater

Drilling Depth	Hole Dia	Technique	Crew	Progress Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.20	0.50	Inspection Pit	Arch	G.L.			27/08/19	08:00						None observed during drilling, possibly masked by flush.
1.20	0.50	Inspection Pit	AW/PB	0.20	NIL	DRY	31/08/19	18:00						
46.00	0.12	Geobor S	AW/PB	0.20	NIL	DRY	28/08/19	08:00						
				1.20	NIL	DRY	28/08/19	18:00						
				1.20	NIL	DRY	29/08/19	08:00						
				29.50	29.50	29.00	29/08/19	18:00						

Remarks

Inspection pit hand excavated to 0.20m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
**** Drillers description.**
At 9.00m, the casing was pulled back to 7.00m to allow Falling Head Permeability tests to be undertaken.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Figure 1 of 10
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71807
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410348.1 E 141413.1 N	Ground Level	100.61 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	staining. Set 3 are 80-90 degrees, clean (0/0/0), stepped rarely undulating and rough with many black specks and rare orangish brown surface staining. Between 5.26-5.50m. assumed zone of core loss. [GRADE A3]			3
					(AZCL)				
5.50- 7.00	5.50	100 65	0.05 0.01	0	(NI)	Between 4.39-4.63m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many angular to subangular small and medium nodular flint fragments (up to 70mm) with a 1mm thick cortex. Between 4.75-4.90m, and 5.09-5.26m non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content. Between 5.50-5.78m, non intact, recovered as silty angular to subangular fine to coarse gravel with a medium cobble content. Clasts with rare orangish brown mottling.			2 2 2 1 2 2 2
					(12)				
6.38- 6.54		C							3
					(NI)	Between 6.68-7.00m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a medium subangular cobble content. Clasts with occasional greenish grey marl and rare orangish brown mottling.			2 2
7.00- 8.50	7.00	100 62	0.15 0.08	20	(7)				2
7.15- 7.30		C							1
					(NI)	Between 7.30-7.37m, non intact, recovered as a silty angular to subangular fine to coarse gravel. With many angular to subangular small nodular flint fragments (up to 30mm in size) with a <1mm thick cortex. Between 7.62-8.09m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content. Clasts with occasional orangish brown relic sponge bed traces and rare greenish grey wispy marl seams (<1mm thick).			1 2
					(8)				
					(NI)				
					(7)	At 8.31m, with many orangish brown relic sponge traces (up to 10mm in size).			1 3 1
8.50- 9.00	8.50	0		0	(NR)	Between 8.50-9.00m, no recovery. Driller notes chalk**.			
9.00-10.00	9.00	65 29	0.15 0.14	29	(7)				
					(NI)	Between 9.29-9.65m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a medium subangular cobble content. With many angular to subangular small nodular flint fragment (up to 50mm in size) with a 3mm thick cortex. Between 9.65-10.00m, assumed zone of core loss.			1 3
					(AZCL)				
						Very weak, low and medium density, white with many	10.00 (90.61)		

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
29.50	29.50	28.80	30/08/19	08:00
46.00	46.00	31.35	30/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-46.00m, Air/Mist, 100% return.

Logged by AB
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Figure 2 of 10
27/03/2020

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71807** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410348.1** E **141413.1** N Ground Level **100.61** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50 **10.08-10.41**	**10.00**	**79** **59** **C**	**0.17** **0.04**	**18**	**(9)**	**black specks CHALK.** **Discontinuities are:** **Set 1 are 40-50 degrees, very closely to medium spaced (20/210/500), clean (0/0/0), undulating, locally planar and rough with many black specks and rare orangish brown surface staining.** **Set 2 are 5-10 degrees, very closely to widely spaced (40/290/710), clean rarely infilled (0/0/1) with comminuted chalk, undulating or planar and rough with many black specks and rare orangish brown surface staining.** **Below 13.45m, Set 3 are 85 degrees, clean (0/0/0), undulating and rough with many black specks and occasional orangish brown surface staining.** **[GRADE A2]**	**10.00** **(90.61)**		1 2 1 1 2 1 1 1
					(NI)	**At 10.03m, with a thin grey wispy marl seam (5mm thick) and wispy marl partings (<1mm thick).** **Between 10.97-11.18m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many angular to subangular small and medium flint fragments (up to 40mm in size) with a 1mm thick cortex.**			
					(AZCL)	**Between 11.18-11.50m, assumed zone of core loss.**			
11.50-13.00	**11.50**	**85** **75**	**0.17** **0.02**	**36**	**(7)**	**At 11.80m, with occasional orangish brown relic sponge traces (up to 10mm in size).**			2 2 1 1
					(NI)	**Between 12.38-12.67, non intact, recovered as a silty angular subangular fine to coarse gravel. With many angular to subangular small and medium nodular flint fragments (up to 60mm in size) with a 2mm thick cortex.** **Between 12.67-13.00m, assumed zone of core loss.**			2 1
					(0)				
					(AZCL)				
13.00-14.50 **13.15-13.30**	**13.00**	**100** **91** **C**	**0.34** **0.07**	**73**	**(4)**	**At 13.38m, with orangish brown relic sponge traces (up to 25mm in size).**			2 3 2 3 2 1
14.50-16.00	**14.50**	**83** **42**	**0.18** **0.10**	**27**	**(7)**	**At 14.84m, with a subangular medium nodular flint (85mm in size, full diameter) with a 1mm flint cortex.**			2 2 2 3

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71807** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410348.1** E **141413.1** N Ground Level **100.61** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									3
						Between 15.19-15.30m, with angular to subangular small and medium nodular flint fragments (up to 65mm in size) with a 1mm thick cortex.			
					(NI)	**Between 15.19-15.74m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. Clasts with rare orangish brown mottling.**			
						Between 15.74-16.00m, assumed zone of core loss.			
					(AZCL)				
16.00-17.50	**16.00**	**81** **77**	**0.38** **0.08**	**63**					2
16.27-16.64		**C**							2
					(4)				2
						At 16.69m, with occasional orangish brown relic sponge traces (up to 10mm in size). **At 16.83m, with a subangular small nodular flint (30mm in size) with a 1mm thick cortex.**			2 1
						Between 17.22-17.50m, assumed zone of core loss.			
					(AZCL)				
17.50-19.00	**17.50**	**97** **88**	**0.36** **0.10**	**62**			**17.50** **(83.11)**		
					(5)	**Very weak, low and medium density, white with many black specks and rare orangish brown mottling CHALK.** **Discontinuities are:** **Set 1 are 0-10 degrees, very closely to widely spaced (50/280/820), clean rarely infilled (0/0/1) with comminuted chalk and rare grey marl, undulating, rarely planar and rough with many black specks and rare orangish brown surface staining.** **Set 2 are 80-90 degrees, clean (0/0/0), stepped or undulating and rough with many black specks and rare orangish brown surface staining.** **Set 3 are 40-50 degrees, clean, rarely infilled (0/0/1) with grey marl or comminuted chalk, undulating and rough with occasional black specks and rare orangish brown surface staining.** **[GRADE A2]** **At 17.85m, with an angular to subangular medium nodular flint (75mm in size) with a 3mm thick flint cortex.** **At 18.09m, with occasional orangish brown relic sponge traces (up to 15mm in size).**			1 1 1 1 1 2 3
19.00-20.50	**19.00**	**97** **83**	**0.47** **0.16**	**65**		**Between 18.14-18.20m, non intact, recovered as a silty angular to subangular fine to coarse gravel. With angular to subangular small nodular flint fragments (up to 35mm in size) with a 1mm thick cortex.**			
19.08-19.47		**C**			**(2)**				
					(NI)	**Between 19.47-19.62m, non intact, recovered as silty angular to subangular fine to coarse gravel. Clasts with rare orangish brown mottling. With many angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm flint cortex.**			1 1
						At 19.90m, with a light grey wispy grey marl seam (5mm thick) with interwoven grey marl partings (<1mm thick).			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **4 of 10**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71807**
Project No **PC197626**
Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410348.1** E **141413.1** N
Ground Level **100.61** m OD
Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(4)				1 1
20.50-22.00	20.50	100 91	0.31 0.07	67		At 20.75m and 21.52m, with angular to subangular small nodular flint fragments (up to 50mm in size) with a 1mm thick cortex.			1 1 3 1
					(5)	At 21.65m, with occasional orangish brown relic sponge traces (up to 10mm in size). At 21.70m, with a subangular small nodular flint fragment (30mm in size) with a 1mm thick cortex.			1 1 1
22.00-23.50	22.00	100 93	0.48 0.05	61	(NI)	Between 22.20-22.30m, non intact, recovered as a silty angular to subangular fine to coarse gravel. With many angular to subangular small nodular flint fragments (up to 50mm in size) with a 1mm thick cortex. At 22.50m, with occasional orangish brown relic sponge traces (up to 10mm in size). At 22.64m, with a subangular medium nodular flint fragment (60mm in size).			1 2 1
22.81-23.29		C							1
					(5)	At 23.02m, with orangish brown relic sponge traces (up to 10mm in size).			1 1 2 1
23.50-25.00	23.50	100 100	0.28 0.04	78		Between 23.60-23.63m, with angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.			3 1 2
					(NI)	Between 23.96-24.09m, non intact, recovered as a slightly silty angular medium to coarse gravel. Clasts with rare orangish brown mottling.			1 1 1
					(4)	At 24.86m, with orangish brown mottling (up to 10mm in size). (Probably sponge trace).			1 3 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
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Figure **5 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71807** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410348.1** E **141413.1** N Ground Level **100.61** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
25.00-26.50	**25.00**	**100 84**	**0.46 0.09**	**63**					1 3
25.28-25.74		**C**							
						At 25.57m, with occasional orangish brown relic sponge traces (up to 10mm in size).			
						Between 25.74-26.00m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many angular to subangular small and medium nodular flint fragments (up to 60mm in size) with a 1mm thick cortex.			1
					(NI)				
									3 2
					(6)				
									1
						Below 26.50m, Set 3 discontinuities closely to widely spaced (70/290/680).			
26.50-28.00	**26.50**	**100 97**	**0.20 0.02**	**67**		**[Grade A2]**			1 3
									3
						At 27.10m, with angular to subangular small nodular flint fragments (up to 40mm in size).			
						Between 27.10-27.35m, with many orangish brown relic sponge traces (up to 30mm in size).			1
					(7)				3
									3
						At 27.50m, with occasional orangish brown relic sponge traces (up to 20mm in size).			
									3
									3
									3
									1
28.00-29.50	**28.00**	**92 90**	**0.21 0.07**	**73**		**At 28.08m, with angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm flint cortex.**			1
									1
									1
						At 28.75m, with a wispy grey marl seam (6mm thick) and interwoven wispy marl partings (<1mm thick).			3
					(5)				1 3
						At 28.79m, with a relic burrow (15mm wide) infilled with grey marl.			
									3
29.12-29.38		**C**							1
						At 29.24m, with a wispy grey marl seam (3mm thick) and interwoven wispy marl partings (<1mm thick).			
						Between 29.38-29.50m, assumed zone of core loss.			
					(AZCL)				
							29.50 (71.11)		
29.50-31.00	**29.50**	**100 77**	**0.17 0.03**	**19**	**(9)**	**Very weak and weak, locally extremely weak, low and medium density, white with many black specks and rare orangish brown mottling CHALK.**			1 3 1
					(NI)	**Discontinuities where seen are:**			
						Set 1 are 0-10 degrees, very closely to medium spaced (30/235/400), clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining.			
						Set 2 are 40-50 degrees, closely to medium spaced			2 2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **6 of 10**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71807** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410348.1** E **141413.1** N Ground Level **100.61** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(14)	(30/230/830), clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining. Set 3 are 80-90 degrees, clean (0/0/0), stepped, rarely undulating, and rough with many black specks and rare orangish brown surface staining. Below 34.00m, Set 4 are 70 degrees, clean (0/0/0), stepped or undulating and rough with many black specks and rare orangish brown surface staining.			2 2 3
					(NI)				2
					(14)	[GRADE A2] Between 29.83-30.00m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low angular to subangular cobble content. Clasts with many black specks and rare orangish brown mottling.			2 2 2 1
31.00-32.50 31.00-31.12	31.00	100 57 C	0.16 0.03	17	(9)	Between 30.29-30.58m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low angular to subangular cobble content. Clasts with many black specks. Between 30.76-30.80m, discontinuity inclined 20 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining. At 31.00m, with occasional orangish brown relic sponge bed traces (up to 10mm in size). At 31.12m, clasts with rare orangish brown mottling. With a subangular small nodular flint fragment (35mm in size).			1 1 2 2 1 1 2
					(NI)	Between 31.78-32.50m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low angular cobble content. Clasts with rare orangish brown relic sponge traces (up to 10mm in size). With occasional angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex. At 32.18m, with many orangish brown relic sponge traces (up to 25mm in size).			
32.50-34.00	32.50	100 59	0.14 0.04	17	(10)				2 2 2
					(NI)	Between 32.91-33.05m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low angular cobble content. Clasts with rare orangish brown mottling. With occasional angular to subangular small nodular flint fragments (up to 30mm in size).			2
					(9)	At 33.32m, with a grey wispy marl seam (5mm thick) and interwoven wispy marl partings (<1mm thick).			2 2 1 1 2
					(NI)	Between 33.52-33.70m, non intact, recovered as a silty angular to subangular fine to coarse gravel. With many angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.			
					(3)	At 33.90m, with many orangish brown relic sponge traces (up to 15mm in size).			2
34.00-35.50 34.32-34.56	34.00	93 85 C	0.24 0.05	31		At 34.32m, with a wispy grey marl seam (5mm thick) and wispy marl partings (<1mm thick).			2 4 4 1 1
					(7)	At 34.83m, with many orangish brown relic sponge traces (up to 10mm in size).			4 2 2 4

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
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Figure **7 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71807** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410348.1** E **141413.1** N Ground Level **100.61** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									4 1
						Between 35.40-35.50m, assumed zone of core loss.			
					(AZCL)				4
35.50-37.00	35.50	100 75	0.11 0.02	7					2 4
						At 35.91m, with orangish brown relic sponge traces (up to 10mm in size). At 36.05m, with a circular trace fossil (25mm in size, with a 2mm thick shell).			4 2
					(11)				2
									3 1 2 2
						Between 36.62-37.00m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With many angular to subangular small nodular flint fragments (up to 30mm in size) with a 1mm thick cortex.			1 2
					(NI)				
37.00-38.50	37.00	90 72	0.26 0.06	37	(6)				3
						Between 37.17-37.29m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low angular to subangular cobble content. With many angular to subangular small nodular flint fragments (up to 20mm in size) with a 1mm thick cortex. At 37.92m, with an orangish brown relic sponge trace (10mm in size).			1 3
					(NI)				
					(7)	At 37.60m, with sheet-like shell fragments (up to 5mm thick). (Incremental bivalve - platyceramus).			1 4
						At 37.92m, with orangish brown relic sponge traces (up to 15mm in size). Between 37.98-38.08m, with angular to subangular small and medium nodular flint fragments (up to 70mm in size) with a 1mm thick cortex.			3
					(NI)				3
					(4)	At 38.19m, with a subangular small nodular flint (50mm in size) with a 1mm thick cortex. Between 38.35-38.50m, assumed zone of core loss.			
					(AZCL)				
38.50-40.00	38.50	97 97	0.67 0.04	58		Very weak, medium density, white with many black specks and rare orangish brown mottling CHALK. Discontinuities are: Set 1 are 0-10 degrees, very closely to widely spaced (40/300/1090), clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining. Below 40.00m, Set 2 are 40-50 degrees, closely to medium spaced (100/280/420), clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining.	38.50 (62.11)		2 1
39.18-39.57		C			(3)	[GRADE A2] At 39.02m, with a grey marl seam (8mm thick) with interwoven marl partings (<1mm thick). At 39.04m, with occasional subhorizontal sheet-like shell fragments (up to 5mm thick). (Possibly platyceramus). With a subangular small nodular flint (15mm in size). At 39.18m, with angular to subangular small nodular flint fragments (up to 30mm in size) with a 1mm thick cortex. At 39.31m, with many orangish brown relic sponge traces (up to 10mm in size).			1 1 1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **AB**
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Figure **8 of 10**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71807** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410348.1** E **141413.1** N Ground Level **100.61** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
40.00-41.50	**40.00**	**100** **100**	**0.52** **0.10**	**81**	**(5)**	**At 39.78m, 39.89, 39.95m and 40.03m, with a ribbed sheet-like incremental bivalve shell fragments (up to 10mm thick). (Platyceramus).** **At 40.10m, with a light grey marl seam (5mm thick) with interwoven marl partings (<1mm thick).** **At 40.12m, with orangish brown relic sponge traces (up to 15mm in size).** **At 40.26m, with occasional subhorizontal ribbed sheet-like shell fragments (up to 3mm thick). (Incremental bivalve - platyceramus)** **At 40.60m, with a subhorizontal sheet-like shell fragment (3mm thick). (Platyceramus)** **At 40.65m, with orangish brown relic sponge traces (5mm thick).** **At 40.76m, with angular to subangular small nodular flints (up to 35mm in size) with a 1mm thick cortex.** **At 41.05m, with angular to subangular small nodular flints (up to 20mm in size) with a 1mm thick cortex.**			1 1 1 2 1 2 1
41.26-41.50		**C**							
41.50-43.00	**41.50**	**91** **72**	**0.26** **0.02**	**34**	**(NI)** **(7)** **(NI)** **(AZCL)**	**Between 41.50-41.69m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subrounded cobble content. With many angular to subangular small and medium nodular flints (up to 40mm in size) with a 1mm thick cortex.** **Between 41.69-42.36m, discontinuity inclined 85 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining.** **Between 42.52-42.74m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks.** **Between 42.74-42.86m, non intact, recovered as a slightly silty angular to subangular medium to coarse gravel with a low subangular to subrounded cobble content. With occasional angular to subangular small nodular flints (up to 40mm in size).**			1 1 2 1 1
43.00-44.50	**43.00**	**100** **100**	**0.34** **0.02**	**57**	**(6)**	**Between 42.86-43.00m, assumed zone of core loss.** **At 43.15m and 43.19m, with a light grey marl seam (up to 5mm thick) and interwoven marl partings (<1mm thick).** **At 43.27m, with orangish brown relic sponge traces (up to 10mm in size).** **At 43.43m, with a subhorizontal ribbed sheet-like shell fragment (2mm thick). (Possibly platyceramus)** **At 43.59m, with a subangular medium nodular flint (60mm in size) with a 1mm thick cortex.** **At 43.80m, with a subangular small nodular flint (30mm in size) with a 1mm thick cortex.** **At 43.91m, with a wispy light grey marl seam (5mm thick) and marl partings (<1mm thick).** **Between 43.91-43.97m, discontinuity inclined 30 degrees, clean, undulating and striated with many black speck and occasional greenish grey surface stainings and slickenlines.** **At 44.19m and 44.30m, with orangish brown relic sponge traces (up to 10mm in size).**			1 1 1 2 2 1 2 2
44.50-46.00	**44.50**	**100** **100**	**0.26** **0.03**	**31**					2
44.74-45.00		**C**				**Between 44.74-45.00m, with many orangish brown relic sponge traces (up to 10mm in size).**			1 2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **9 of 10**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71807**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410348.1** E **141413.1** N
Ground Level **100.61** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(9)	At 45.11m, with a orangish brown relic sponge trace (5mm in size). At 45.28m, with wispy grey marl seam (3mm thick) and interwoven marl partings (<1mm thick). At 45.41m, with angular to subangular small nodular flint fragments (up to 20mm in size) with a 1mm thick cortex. Between 45.41-46.00m, discontinuity inclined 85 degrees, clean, stepped and rough with many black specks and rare orangish brown and grey surface staining. Between 45.-61.45.81m, with a subvertically inclined sheet-like flint (10mm thick) with a 2mm thick cortex. (Zoophycos burrow). At 45.79m, with a wispy grey marl seam (10mm thick) and interwoven marl partings (<1mm thick). Between 45.90-46.00m, with a wispy grey marl seam (5mm thick) and interwoven marl partings (<1mm thick).	46.00 (54.61)		2 2 2 1 1 2 1 1 2 2
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
Checked by **CPL**
Figure **10 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71808
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410386.0 E 141386.8 N	Ground Level	99.70 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L.		
0.00- 0.25		B				TOPSOIL : Grass over dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subrounded fine to coarse flint and quartzite.	(99.70)		
0.20		D					0.25		
0.20		ES					(99.45)		
0.25- 0.80		B							
0.20			PID=<0.1			Structureless CHALK, composed of cream slightly gravelly sandy SILT. Gravel is weak, high density, white with rare black specks, subangular to rounded and fine to coarse. With occasional small nodular flints (up to 40mm in size). [GRADE Dm]			
0.50		D							
0.50		ES							
0.50			PID=<0.1						
0.80- 1.20		B					0.80		
						Structureless CHALK, composed of slightly sandy silty angular fine to coarse GRAVEL. Clasts are very weak to weak, low to medium density, white with rare black specks. Matrix is light brown. Occasional small nodular flints (up to 40mm in size). [GRADE Dc]	(98.90)		
1.00		D							
1.00		ES							
1.00			PID=<0.1						
1.20- 2.20	1.20	0					1.20		
						Soft weathered CHALK**	(98.50)		
					(NR)				
2.20- 3.70	2.20	10			(NI)	Between 2.20-2.35m, non intact, recovered as angular to subangular small to large flint fragments (up to 100mm in size) with a 3mm thick cortex. (Driller reports flint lodged in core barrel shoe). Between 2.35-3.70m and 4.20-5.20m, assumed zone of core loss.			
		0							
					(AZCL)				
3.70- 5.20	3.70	33					3.70		
		0				CHALK, recovered as silty angular to subangular fine to coarse GRAVEL with a low subangular cobble content. Clasts are weak, low to medium density, white with occasional brown surface staining. Matrix is greyish brown. With occasional small to very large flint fragments (up to 150mm in length).	(96.00)		
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew
0.25	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	ED
45.00	0.12	Geobor S	SP/RC

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			02/09/19	08:00
0.25	NIL	DRY	06/09/19	18:00
0.25	NIL	DRY	03/09/19	08:00
24.70	24.70	23.90	03/09/19	18:00
24.70	24.70	DRY	04/09/19	08:00
44.20	44.20	40.80	04/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

AGS

Inspection pit hand excavated to 0.25m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
At 1.30m, 150mm diameter casing installed to 1.30m depth.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by SI
Checked by CPL
Figure 1 of 9
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geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71808
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410386.0 E 141386.8 N	Ground Level	99.70 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
5.20- 6.70	5.20	27 0			(AZCL)				
					(NI)				
6.70- 8.20	6.70	53 13	0.20	13	(AZCL)				
					(5)	Between 7.40-7.60m, intact section of core with a discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks.			
					(NI)	Between 7.60-7.70m, with angular to subangular small to medium nodular flint fragments (up to 100mm in size). At 7.83m, clasts with occasional orangish brown sponge traces (up to 3mm in size). Between 7.94-8.20m, clasts with many black specks and occasionally grey staining.			
							8.20 (91.50)		
8.20- 9.70	8.20	0 0		0	(NR)	Broken CHALK and flint**			
9.70-11.20	9.70	67 43	0.09 0.02	0	(AZCL)	Between 9.70-10.20m, assumed zone of core loss.			

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				44.20 45.00	44.20 45.00	29.20	05/09/19 05/09/19	08:00 18:00						

Remarks

AGS Stratigraphic Nomenclature Provided by the Client.
** Drillers description.
Flush: 1.20-45.00m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
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Figure 2 of 9
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71808 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410386.0 E, 141386.8 N | Ground Level: 99.70 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 10.20-10.30m, with angular to subangular small and medium nodular flint fragments (up to 70mm in size).	10.30 (89.40)		
					(8)	Extremely weak and very weak, low to medium density, white CHALK with occasional black specks. Discontinuities are: Set 1 are 20-40 degrees, very closely to closely spaced (40/85/140), clean or infilled (0/1/2/) with comminuted chalk, stepped or undulating with many black specks. Set 2 are 80-90 degrees, clean or infilled (0/1/1) with comminuted chalk, undulating or stepped and rough with many black specks.			
10.84-10.90		D			(11)				
					(NI)	[GRADE B3] Between 10.42-10.47m, with angular to subangular small and medium nodular flint fragments (up to 60mm in size).			
11.20-12.70	11.20	83 57	0.24 0.03	30	(6)	Between 10.47-10.55m, discontinuity inclined 50 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks. At 10.52m, with a sheet-like bivalve fossil (2mm thick). (Platyceramus) Between 10.90-11.00m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. Between 11.10-11.20m, non intact, recovered as angular to subangular fine to coarse gravel. Between 11.70-11.85m, discontinuity inclined 70 degrees, infilled (2mm thick) with comminuted chalk, stepped and rough with many black specks. Between 11.85-12.14m, non intact, recovered as angular to subangular fine to coarse gravel. At 12.00m, with angular to subangular small to medium nodular flint fragments (up to 80mm in size). At 12.30m, discontinuity inclined 0 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. Between 12.30-12.45m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts with many black specks. Between 12.45-12.70m, assumed zone of core loss. Between 12.70-12.84m, with angular to subangular small to medium nodular flint fragments (up to 90mm in size). At 12.84m, discontinuity inclined 0 degrees, infilled (1mm thick) with comminuted chalk, planar and smooth with many black specks. Between 12.88-13.07m, discontinuity inclined 60 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining. Between 13.05-13.14m, discontinuity inclined 50 degrees, infilled (1mm thick) with comminuted chalk, undulating and smooth with many black specks and occasional orangish brown surface staining. At 13.10m, with occasional subangular small nodular flint gravel (up to 60mm in size). Between 13.24-13.29m, discontinuity inclined 50 degrees, infilled (1mm thick) with comminuted chalk, undulating and smooth with many black specks and occasional orangish brown surface staining. Between 13.52-13.60m, discontinuity inclined 60 degrees, clean, stepped and rough with many black specks. At 13.52m, discontinuity inclined 5 degrees, clean, planar and smooth with many black specks and occasional orangish brown surface staining. Between 13.60-13.70m, discontinuity inclined 70 degrees, clean, stepped and rough with many black specks.			
11.62-11.70		C			(NI)				
					(13)				
					(NI)				
					(AZCL)				
12.70-14.20	12.70	93 47	0.22 0.02	0	(NI)		13.70 (86.00)		
					(14)				
14.20-15.70	14.20	40 0			(AZCL)	CHALK, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content. Clasts are weak, low to medium density and white. With occasional angular to subangular small to medium nodular flint fragments (up to 80mm in			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
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Figure 3 of 9
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71808 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410386.0 E, 141386.8 N | Ground Level: 99.70 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						size). At 13.70m, with occasional angular to subangular small nodular flint fragments (up to 30mm in size). Between 13.70-15.10m and 15.70-16.30m, assumed zone of core loss.			
					(NI)				
15.70-16.70	15.70	40 14	0.10 0.04	10					
					(AZCL)				
					(NI)				
16.60-16.70		C							
16.70-17.20	16.70	100 60	0.16 0.07	58					
16.87-17.00		C					16.87 (82.83)		
						Weak, locally very weak, medium and high density, white CHALK with many black specks and rare orangish brown mottling. Discontinuities are: Set 1 are 30-50 degrees, closely to medium spaced (20/160/340), clean and infilled (0/1/2) with comminuted chalk, stepped or undulating, rough, occasionally smooth with black specks.			1
17.20-18.70	17.20	97 45	0.21 0.05	17					1
					(8)				1
						[GRADE B3] At 17.00m, discontinuity inclined 5 degrees, infilled (2mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining. At 17.15m, with rare angular to subangular small nodular flint fragments (up to 30mm in size). At 17.93m, discontinuity inclined 7 degrees, infilled (2mm thick) with comminuted chalk, stepped and rough with many black specks. Between 18.04-18.20m, non intact, recovered as angular to subangular fine to coarse gravel. Between 18.20-18.29m, with rare angular to subangular small to medium nodular flint fragments (up to 60mm in size). Between 18.29-18.82m, non intact, recovered as angular to subangular fine to coarse gravel.			1
					(NI)				
18.70-20.20	18.70	100 57	0.24 0.02	20					
						Between 18.82-18.92m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining.			1 1
					(8)				
						Between 19.29-19.32m, discontinuity inclined 20 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. Between 19.49-19.51m, discontinuity inclined 10 degrees, clean, stepped and rough with many black specks.			1
					(NI)				
19.67-19.84		C				Between 19.57-19.67m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(5)	Between 19.81-19.86m, discontinuity inclined 20 degrees, infilled (1mm thick) with comminuted chalk, planar and smooth with many black specks and occasional orangish brown surface staining.			
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71808 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410386.0 E, 141386.8 N | Ground Level: 99.70 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 19.86-20.20m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts with many black specks.			
20.20-21.70	20.20	53 17	0.10 0.02	7	(AZCL)	Between 20.20-20.90m, assumed zone of core loss.			
					(NI)	Between 20.90-21.10m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(4)				1
					(NI)	Between 21.35-21.44m, with rare angular to subangular small to medium nodular flint fragments (up to 70mm in size). Between 21.44-21.70m, non intact, recovered as angular to subangular fine to coarse gravel.			
21.70-22.70	21.70	85 30	0.15 0.02	24	(AZCL)	Between 21.70-21.85m, assumed zone of core loss.			
					(NI)	Between 21.85-21.91m, non intact, recovered as angular to subangular fine to coarse gravel.			1
21.94-22.05		C			(5)	At 22.08m, with occasional orangish brown staining (up to 5mm in size). (Possible sponges). Between 22.23-22.42m, with many angular to subangular small to medium nodular flint fragments (up to 70mm in size).			1
					(NI)	Between 22.42-22.70m, non intact, recovered as angular to subangular fine to coarse gravel and a high subangular cobble content. Clasts with much brown staining.			
22.70-23.20	22.70	100 40	0.07 0.02	0	(10)	Between 22.80-22.85m, non intact, recovered as angular medium to coarse gravel.			1 1
					(NI)	Between 23.00-23.20m, non intact, recovered as angular to subangular fine to coarse gravel.			
23.20-24.70 23.20-23.33	23.20	100 51 C	0.13 0.04	20	(5)	Between 23.54-23.76m, discontinuity inclined 90 degrees, infilled (1mm thick) with comminuted chalk, undulating and smooth with occasional black specks.			1
						At 23.99m and 24.00m, discontinuities inclined 0 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many to occasional black specks.			1
					(NI)	Between 24.36-24.70m, non intact, recovered as angular to subangular fine to coarse gravel.			
24.70-26.20 24.95-25.18	24.70	100 60 C	0.27 0.02	45					

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 5 of 9
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71808** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410386.0** E **141386.8** N Ground Level **99.70** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(4)	Between 25.18-25.20m, discontinuity inclined 10 degrees, infilled (1mm thick) with comminuted chalk, planar and smooth with occasional black specks.			1 1
					(NI)	Between 25.60-25.70m, with angular to subangular small to medium nodular flint fragments (up to 60mm in size).			
					(0)	Between 25.82-25.90m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			
					(NI)	Between 25.90-26.12m, discontinuity inclined 90 degrees, clean, undulating and rough with many black specks.			
26.20-27.70	26.20	100 73	0.21 0.02	25					1
					(4)	Between 26.52-26.62m, discontinuity inclined 60 degrees, infilled (1mm thick) with comminuted chalk, undulating and smooth with many black specks. Between 26.55-26.74m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, undulating and smooth with many black specks. Between 26.83-26.92m, non intact, recovered as angular to subangular fine to coarse gravel. Clast with occasional orangish brown penetrative staining (up to 5mm depth). Between 26.92-27.13m, discontinuity inclined 90 degrees, clean, stepped and rough with many black specks and occasional orangish brown surface staining. (possible sponges). Between 27.18-27.34m, with much orangish brown staining (up to 30mm in size). (Possible sponges). Between 27.30-27.48m, discontinuity inclined 60 degrees, infilled (1mm thick) with comminuted chalk, undulating and smooth with much black specks and occasional orangish brown surface staining.			1
27.70-29.20 27.80-28.00	27.70	100 70 C	0.31 0.09	47	(NI) (0) (NI)	At 27.68m, with occasional orangish brown staining (up to 15mm in size). (Possible sponges). Between 27.70-28.00m, with angular to subangular gravel. Clasts with occasional brown staining.	27.80 (71.90)		
					(3)	Very weak, medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, closely to medium spaced (20/150/350) clean or infilled (0/1/2) with grey marl, stepped and rough with many black specks.			1
					(NI)	[GRADE B3] Between 28.00-28.15m, with angular to subangular small to medium nodular flint fragments (up to 100mm in size).			1 1 1
					(5)	Between 28.23-28.30m, discontinuity inclined 30 degrees, infilled (1mm thick) with grey marl, planar and smooth with many black specks. Between 28.42-28.53m, non intact, recovered as angular to subangular fine to coarse gravel. Between 28.56-28.59m and 28.62-28.69m, with a horizontal grey wispy marl seam (up to 10mm thick).			
29.20-30.70	29.20	100 73	0.24 0.03	57					
					(9)	Between 28.74-28.89m, discontinuity inclined 40 degrees, infilled (1mm thick) with grey marl, undulating and rough with many black specks. At 29.14m, with a grey marl seam (<1mm thick). At 29.32m, with a burrow (70mm in length) with stained brown.			1 1 1 1
					(NI)	Between 29.66-29.77m, with angular to subangular small to medium nodular flint fragments (up to 60mm in size). Between 29.77-29.9m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks.			

Drilling / Progress / Groundwater

Drilling Depth	Hole Dia	Technique	Crew	Progress Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **6 of 9**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71808**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410386.0** E **141386.8** N
Ground Level **99.70** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(3)				
30.70-32.20 30.73-30.97	30.70	44 27 C	0.25 0.03	17	(0)				1
					(NI)	Between 30.97-31.06m, non intact, recovered as angular to subangular fine to coarse gravel.			1
					(7)	Between 31.09-31.20m, discontinuity inclined 60 degrees, infilled (1mm thick) with marl, undulating and rough with many black specks.			1
					(NI)	Between 31.20-31.50m, with angular to subangular small to medium nodular flint fragments (up to 80mm in size).			
					(AZCL)	Between 31.50-32.20m, assumed zone of core loss.			
32.20-33.70 32.36-32.70	32.20	100 60 C	0.34 0.10	44	(NI)	Between 32.20-32.30m, with angular to subangular small to medium nodular flint fragments (up to 99mm in size). Between 32.30-32.70m, with occasional horizontal grey wispy marl seams (up to 5mm thick).			
					(3)				1
					(NI)	Between 32.90-33.10m, non intact, recovered as angular to subangular fine to coarse gravel. At 33.00m, with angular to subangular small nodular flint fragments (up to 50mm in size).			1
					(2)	At 33.40m, with a horizontal grey wispy marl seam (3mm thick). At 33.50m, with a horizontal grey wispy marl seam (4mm thick).			1
					(NI)	Between 33.60-33.70m and 33.80-33.88m, with angular to subangular small to medium nodular flint fragments (up to 80mm in size).			
33.70-35.20	33.70	100 67	0.35 0.10	30	(0)				
					(NI)				
					(1)				1
					(NI)	Between 34.62-34.83m, 35.42-35.50m and 35.70-35.83m, non intact, recovered as angular to subangular fine to coarse gravel.			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
Checked by **CPL**
Figure **7 of 9**
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71808
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410386.0 E 141386.8 N	Ground Level	99.70 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(3)				
35.20-36.70 35.20-35.35	35.20	93 42 C	0.20 0.02	27	(NI) (0) (NI) (3) (NI)	Between 35.83-35.90m, discontinuity inclined 40 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with rare black specks. Between 36.01-36.10m, discontinuity inclined 30 degrees, clean, undulating and smooth with occasional black specks. Between 36.20-36.70m, non intact, recovered as angular to subangular fine to coarse gravel.			
36.70-38.20	36.70	93 70	0.23 0.20	7	(0) (NI) (3) (NI) (4)	Between 36.82-36.88m, with angular to subangular small nodular flint fragments (up to 45mm in size). At 36.92m, with a horizontal grey wispy marl seam (10mm thick). At 37.02m, with angular to subangular small to medium nodular flint fragments (up to 60mm in size). Between 37.08-37.23m, discontinuity inclined 50 degrees, infilled (1mm thick) with grey marl, undulating and smooth with many black specks. Between 37.24-37.36m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 37.39-37.43m, discontinuity inclined 50 degrees, infilled (1mm thick) with grey marl, stepped and rough with many black specks. At 37.43m and 38.16m, with occasional angular to subangular small flint fragments (up to 40mm in size).			1 1
38.20-39.70 38.70-38.80	38.20	100 27 C		0		CHALK, recovered as silty angular to subangular fine to coarse GRAVEL and COBBLES. Clasts are very weak to weak, low to medium density and white. Matrix is white. With occasional angular to subangular small to medium nodular flint fragments (up to 80mm in size). Between 38.20-38.26m, with angular to subangular small to medium nodular flint fragments (up to 80mm in size). At 38.96m, with many angular to subangular small nodular flint fragments (up to 50mm in size). At 39.03m, with rare angular to subangular small nodular flint fragments (up to 50mm in size). At 39.13m, with an relic orangish brown sponge trace (5mm in size).	38.20 (61.50)		
39.70-41.20	39.70	100 60		0		Between 39.89-39.95m, with occasional horizontal grey wispy marl seams (up to 3mm thick).			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 8 of 9
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71808
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410386.0 E 141386.8 N	Ground Level	99.70 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 40.08-40.12m, with occasional orangish brown relic sponge traces (up to 10mm in size). Between 40.75-40.77m, with occasional subhorizontal sheet-like bivalve fossils (up to 2mm thick). (Possibly platyceramus). At 40.94m, with a horizontal grey wispy marl seam (10mm thick). At 41.00m, with rare angular to subangular small to medium nodular flint fragments (up to 80mm in size).			
41.20-42.70	41.20	100 13		0		Between 41.20-41.32m, with occasional angular to subangular small nodular flint fragments (up to 50mm in size). At 41.65m, with a horizontal grey marl seam (2mm thick). At 41.80m, with rare orangish brown relic sponge traces (up to 5mm thick). At 42.44m and 42.58m, with occasional sheet-like bivalve fossils (up to 3mm thick). (Possible platyceramus). At 42.68m, with a horizontal grey wispy marl seam (10mm thick).	42.70 (57.00)		
42.70-44.20	42.70	87 13		0	(NI)	CHALK, recovered as very silty angular to subangular fine to coarse GRAVEL and COBBLES. Clast are very weak to weak, low to medium density and light grey with much orangish brown surface penetrative staining (up to 10mm depth). Matrix is cream. With occasional angular to subangular small to medium nodular flint fragments (up to 60mm in size). Between 42.70-42.80m, with angular to subangular small to medium nodular flint fragments (up to 60mm in size). At 42.80m and 43.08m, with a sheet-like bivalve fossil (3mm thick). (Possibly platyceramus). At 43.18m, with a grey wispy marl seam (5mm thick).			
44.20-45.00	44.20	75 6		0		Between 44.20-45.00m, clasts with much orangish brown penetrative staining (up to 10mm depth).			
						End of Borehole	45.00 (54.70)		

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by SI
Checked by CPL
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geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71810 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410455.9 E, 141447.0 N | Ground Level: 99.01 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (99.01)		
0.00- 0.25		B				TOPSOIL: Dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subangular fine to coarse flint and chalk.			
0.20		D					0.25 (98.76)		
0.20		ES							
0.25- 0.70		B				Structureless CHALK, composed of cream slightly gravelly SILT. Clasts are very weak to weak, low and medium density, white with rare black specks, subangular to subrounded and fine to coarse. With occasional angular to subangular small nodular flints. [GRADE Dm]			
0.20			PID=<0.1						
0.50		D							
0.50		ES							
0.50			PID=<0.1						
0.70- 1.20		B							
1.00		D							
1.00		ES							
1.00			PID=<0.1						
1.20- 2.00	1.20	0			(NR)	CHALK with flints**	1.20 (97.81)		
2.00- 3.50	2.00	80	0.08	9	(NI)	Extremely weak and very weak, low density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-15 degrees, very closely to medium spaced (40/80/220), clean (0/0/0), undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE A3] Between 2.00-2.20m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subrounded small to medium nodular flints (up to 10mm in size). Between 2.20-2.31m, discontinuity inclined 80 degrees, clean, undulating and rough with occasional black specks and orangish brown surface staining. Between 2.38-2.57m, discontinuity inclined 85 degrees, clean, undulating and rough with rare black specks and much orangish brown surface staining. Between 2.61-2.64m, discontinuity inclined 35 degrees, clean, undulating and rough with rare black specks and much orangish brown surface staining.	2.00 (97.01)		1 1 1 1 1 1
		34	0.03		(18)				
2.51- 2.64		C					2.71 (96.30)		
					(NI)				
					(AZCL)				
3.50- 5.00	3.50	43				CHALK, recovered as slightly silty angular to subangular fine to coarse GRAVEL. Clasts are weak, high density, white with rare black specks. Matrix is white. With occasional angular to subangular small and medium flints (up to 60mm in size). Between 3.20-3.50m, assumed zone of core loss. Between 3.83-3.95m, clasts with occasional orangish relic brown sponge traces (up to 45mm in size). Between 4.15-5.00m, assumed zone of core loss.			
		0			(NI)				
					(AZCL)				

Drilling

Depth	Hole Dia	Technique	Crew
0.25	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	SP/PB
45.50	0.12	Geobor S	SP/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			27/08/19	08:00
0.25	NIL	DRY	03/09/19	18:00
0.25	NIL	DRY	28/08/19	08:00
18.50	18.50	18.10	28/08/19	18:00
18.50	18.50	DRY	29/08/19	08:00
20.00	20.00	17.80	29/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.25m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
** Drillers description.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574,

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR
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Figure 1 of 10
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71810
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410455.9 E 141447.0 N	Ground Level	99.01 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
5.00- 6.50	5.00	53 0			(NI)	Between 5.14-5.32m, 2 No. subangular to subrounded medium nodular flints (up to 95mm in size) with a 1mm thick cortex.			
5.65- 5.80		C				Between 5.57-5.62m, with rare relic burrows (up to 35mm in size) with orangish brown staining. Between 5.80-6.50m, assumed zone of core loss.			
					(AZCL)				
							6.50 (92.51)		
6.50- 8.00 6.50- 6.64	6.50	100 80 C	0.14 0.02	17	(13)	Very weak to weak, low to medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 5 degrees, very closely to widely spaced (20/80/760), clean (0/0/0), undulating and rough with many black specks. Set 2 are 40-45 degrees, very closely to closely spaced (30/100/180), clean (0/0/0), undulating and rough with many black specks.			3 3 2 1 2 1 3
					(NI)	Set 3 are 70-85 degrees, clean (0/0/0), undulating and rough with many black specks.			2 2
					(11)	[GRADE A3] Between 6.92-7.03m, with rare relic burrows (up to 20mm in size) with orangish brown staining.			2
					(NI)	Between 7.03-7.11m and 7.38-7.60m, non intact, recovered as angular to subangular fine to coarse gravel.			3
					(7)	Between 7.90-7.92m, with many orangish brown relic sponge traces (up to 60mm in size).			1 3
8.00- 9.50 8.22- 8.46	8.00	93 49 C	0.16 0.02	23	(11)	Between 7.92-8.00m, with a angular to subangular medium nodular flint (80mm in size) with a 2mm thick cortex. Between 8.00-8.09m, with occasional angular to subangular small flint fragments (up to 35mm in size).			2 2 2
					(NI)	Between 8.62-8.90m, non intact, recovered as angular to subangular fine to coarse gravel.			1 3 1
					(14)				3
					(NI)	Between 9.12-9.40m, non intact, recovered as silty angular to subangular fine to coarse gravel. With occasional angular to subangular small flint fragments (up to 45mm in size).			1 1
					(AZCL)	Between 9.40-9.50m, assumed zone of core loss.			
9.50-11.00	9.50	100 70	0.09 0.05	15	(NI)	Between 9.50-9.65m, non intact, recovered as angular to subangular fine to coarse gravel.			
							9.65 (89.36)		3
						Very weak locally weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-15 degrees, very closely to medium spaced (40/160/510), clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with			1 3 1 2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
20.00	20.00	18.90	30/08/19	08:00
30.50	30.50	27.50	30/08/19	18:00
30.50	30.50	29.90	02/09/19	08:00
45.50	45.50	31.70	02/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS 2002.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-45.50m, Air/Mist, 100% return.

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Figure 2 of 10
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71810 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410455.9 E, 141447.0 N | Ground Level: 99.01 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.05-10.18		C			(12)	many black specks and occasional brown or grey surface staining. Set 2 are 30-45 degrees, very closely to medium spaced (20/120/370), clean (0/0/0), undulating and rough with many black specks. Set 3 are 70-85 degrees, clean (0/0/0), undulating and rough with many black specks. [GRADE A3] Between 9.96-10.13m, with occasional orangish brown sponge traces (up to 25mm in size). Between 10.53-10.54m, with occasional relic burrows (up to 35mm in size) with orangish brown staining. At 10.65m, with a relic shell fragment (45mm in size). Between 10.70-11.00m and 11.33-11.42m, non intact, recovered as angular to subangular fine to coarse gravel.			2 1 2 3 2 1 1 1
					(NI)				
11.00-12.50	11.00	43 27	0.26 0.14	16	(6)				3 2 2 1
						Between 11.65-12.50m, assumed zone of core loss.			
					(AZCL)				
12.50-14.00 12.56-12.71	12.50	47 29 C	0.13 0.12	27	(7)	Between 12.50-12.56m, with occasional angular to subangular small flint fragments (up to 35mm in size). Between 12.68-12.94m, with many orangish brown sponge traces (up to 45mm in size). Between 12.68-12.75m, with rare relic burrows (up to 65mm in size) with orangish brown staining. Between 12.94-13.20m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subangular small to medium flint fragments (up to 95mm in size). Between 13.20-14.00m, assumed zone of core loss.			2 2 1
					(NI)				
					(AZCL)				
14.00-15.50	14.00	80 51	0.10 0.02	12	(10)	Between 14.20-14.31m, with an angular to subrounded large nodular flint (110mm in length, full diameter) with a 2mm thick cortex. Between 14.42-14.45m, with many angular to subangular small flint fragments (up to 25mm in size).			2 2 2 2 1 3
					(NI)	Between 14.63-14.80m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional small angular to subangular flint fragments (up to 15mm in size).			
					(14)	Between 14.80-14.82m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks.			2 3

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 3 of 10
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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71810
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410455.9 E, 141447.0 N
Ground Level: 99.01 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 14.94-15.20m, non intact, recovered as angular to subangular fine to coarse gravel. Between 15.01-15.06m, clasts with rare orangish brown relic sponge traces (up to 25mm in size).			3
					(AZCL)	Between 15.20-15.50m, assumed zone of core loss.			
15.50-17.00	15.50	53 29	0.27 0.17	17	(NI)	Between 15.50-15.63m, with angular to subangular large flint (140mm in length, full diameter). Between 15.63-15.86m, non intact, recovered as angular to subangular fine to coarse gravel. With rare angular to subangular small flint fragments (up to 35mm in size).			1
16.03-16.28		C			(7)	Between 15.86-15.94m, with occasional relic burrows (up to 80mm in size) with orangish brown staining. Between 16.03-16.13m, with rare relic burrows (up to 40mm in size) with orangish brown staining.			1
						Between 16.30-17.00m, assumed zone of core loss.			1
					(AZCL)				
17.00-18.50	17.00	84 81	0.33 0.09	35		Between 17.14-17.20m, with occasional orangish brown relic sponge traces (up to 25mm in size).			3
17.37-17.64		C							1 3
					(7)	Between 17.64-17.66m, with rare orangish brown relic sponge traces (up to 15mm in size).			1
									1 3
						Between 17.95-18.00m, non intact, recovered as angular to subangular fine to coarse gravel.			2 1
						Between 18.26-18.50m, assumed zone of core loss.			1
					(AZCL)				
18.50-20.00	18.50	100 90	0.49 0.06	60	(6)	Between 18.50-18.56m and 18.63-18.66m, with rare relic burrows (up to 45mm in size) with orangish brown staining.			
						At 18.82m, with a subhorizontal brown marl seam (1mm thick).			1 1
					(NI)	Between 18.86-19.01m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subangular small flint fragments (up to 45mm in size).			3
					(22)				1
19.15-19.65		C			(NI)	Between 19.10-19.25m, non intact, recovered as angular to subangular fine to coarse gravel.			1 3 1
					(3)	Between 19.56-19.60m, with occasional orangish brown relic burrows (up to 65mm in size) with orangish brown staining.			1
						Between 19.77-19.96m, with occasional orangish brown relic sponge traces (up to 25mm in size).			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Figure 4 of 10
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71810** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410455.9** E **141447.0** N Ground Level **99.01** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
20.00-21.50	**20.00**	**100** **57**	**0.48** **0.16**	**23**		**Between 20.00-20.05m, with many angular to subangular small flint fragments (up to 35mm in size).**			1
					(6)				1 3
						At 20.59m, with angular to subangular small flint fragments (10mm in size).			3
						Between 20.80-20.97m and 21.12-21.50m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)				
					(7)				1
					(NI)				
						At 21.50-21.78m, very high density.			1
21.50-23.00	**21.50**	**80** **71**	**0.60** **0.09**	**45**		**Between 21.60-21.63m, with rare orangish brown relic sponge traces (up to 25mm in size).**			
21.50-21.78		**C**				**Between 21.74-21.78m, with occasional orangish brown relic sponge traces (up to 25mm in size).**			
						Between 21.78-21.86m, with a angular to subrounded medium nodular flint (80mm in length, full diameter).			1
					(5)	**At 22.01m and 22.07m, with angular to subangular small flint fragment (up to 15mm in size).**			1
									1
									2
									2
						Between 22.54-22.70m, non intact, recovered as angular to subangular fine to coarse gravel. With rare angular to subangular medium flint fragments (up to 65mm in size).			
					(NI)				
					(AZCL)	**Between 22.70-23.00m, assumed zone of core loss.**			
23.00-24.50	**23.00**	**85** **64**	**0.34** **0.04**	**17**					3
					(12)	**Between 23.23-23.31m, with rare orangish brown relic sponge traces (up to 10mm in size).**			1 1 1
						Between 23.32-23.37m, discontinuity inclined 30 degrees, clean, stepped and rough with many black specks.			
						Between 23.41-23.81m and 23.85-24.06m, non intact, recovered as angular to subangular fine to coarse gravel.			3
					(NI)	**Between 23.81-23.85m, intact section of core.**			
									1
					(6)				1
					(AZCL)	**Between 24.28-24.50m, assumed zone of core loss.**			
24.50-26.00	**24.50**	**87** **31**	**0.08** **0.03**	**11**	**(4)**				3
						Between 24.76-25.10m, and 25.42-25.80m, non intact, recovered as angular to subangular fine to coarse gravel.			
24.86-25.13		**C**			**(NI)**				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **5 of 10**
27/03/2020

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71810 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410455.9 E, 141447.0 N | Ground Level: 99.01 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(16)				1 2 2 1 2
					(NI)				
					(AZCL)	Between 25.80-26.00m, assumed zone of core loss.			
26.00-27.50	26.00	93 93	0.20 0.04	68					1 1 1
					(5)	Between 26.47-26.54m, with occasional orangish brown relic sponge traces (up to 20mm in size).			
					(5)	Very weak locally weak, medium density, white with rare black specks CHALK with rare light grey marl seams (up to 1mm thick). Discontinuities are: Set 1 are 0-15 degrees, closely to widely spaced (70/340/810), clean or infilled (0/0/1) with comminuted chalk or grey marl, undulating and rough with many black specks and occasional orangish brown surface staining. Between 27.50-30.00m, Set 2 are 20-35 degrees, closely to medium spaced (150/270/390), clean (0/0/0), undulating and rough with many black specks.	26.60 (72.41)		1
26.80-27.15		C							
					(AZCL)	[GRADE A2]			
27.50-29.00	27.50	83 60	0.34 0.03	42		Between 26.60-26.95m, with rare orangish brown relic sponge traces (up to 25mm in size). Between 27.40-27.50m, assumed zone of core loss.			1 1 1 1
					(6)				
						Between 28.07-28.19m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks.			2 2 1
					(NI)	Between 28.40-28.75m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small to medium flint gravel (up to 65mm in size).			
					(AZCL)	Between 28.75-29.00m, assumed zone of core loss.			
29.00-30.50	29.00	100 100	0.31 0.06	73		Between 29.00-29.12m, with many grey marl seams (up to 1mm thick).			
29.00-29.55		C							1 2 1 2
					(5)	At 29.87m, with a grey marl seam (1mm thick). At 29.95m, with a angular to subangular small flint fragment (25mm in size).			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71810** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410455.9** E **141447.0** N Ground Level **99.01** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 30.20-30.31m, with rare orangish brown relic sponge traces (up to 10mm in size).			1
30.50-32.00	**30.50**	**93** **93**	**0.17** **0.16**	**80**		**At 30.63m, with a relic shell fragment (25mm in size).**			1 1
					(2)				1
						At 31.52m and 31.67m, with a angular to subangular small flint fragment (up to 15mm in size).			1
						Between 31.73-31.80m, with occasional orangish brown relic sponge traces (up to 15mm in size).			1
					(AZCL)	**Between 31.80-31.90m, assumed zone of core loss.**			
32.00-33.50	**32.00**	**94** **94**	**0.28** **0.11**	**89**		**Between 32.20-32.23m, with rare orangish brown relic sponge traces (up to 25mm in size).**			1
						At 32.47m and 32.55m, with a angular to subangular small flint fragment (15mm in size). **Between 32.56-32.63m, with rare orangish brown relic sponge traces (up to 5mm in size).** **At 32.74m, with a angular to subrounded small nodular flint (15mm in size).** **Between 32.86-32.96m, with many subhorizontal grey marl seams (up to 1mm thick).**			1 1
					(3)				1
33.15-33.50		**C**				**At 33.04m, with a angular to subangular small flint fragment (7mm in size).**			1
						At 33.45m, with a subhorizontal grey marl seam (1mm thick).			
33.50-35.00	**33.50**	**87** **77**	**0.40** **0.13**	**56**		**Between 33.50-33.88m, with many subhorizontal grey marl seams (up to 1mm thick).** **Between 33.50-33.96m, with many orangish brown relic sponge traces (up to 85mm in size).** **Between 33.65-33.79m, discontinuity inclined 65 degrees, clean, undulating and rough with many black specks and brown surface staining.**			1
					(NI)	**Between 33.82-33.88m, with occasional angular to subangular small flint fragments (up to 20mm in size).**			1
					(3)	**Between 33.96-34.06m, non intact, recovered as angular to subrounded fine to coarse gravel. With many angular to subangular small to medium flint fragments (up to 85mm in size).** **At 34.41m, with a subhorizontal grey marl seam (1mm thick).** **At 34.50m, with a relic burrow (20mm in size) with orangish brown staining.** **At 34.60m, with a subhorizontal grey marl seam (1mm thick).**			1
					(NI)	**Between 34.75-34.80m, non intact, recovered as silty angular to subangular fine to medium gravel. With many angular to subangular small flint fragments (10mm in size).**			
					(AZCL)	**Between 34.80-35.00m, assumed zone of core loss.**	**35.00** **(64.01)**		

Drilling | Progress | Groundwater

Drilling Depth	Hole Dia	Technique	Crew	Progress Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **JR**
Checked by **CPL**
Figure **7 of 10**
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geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71810** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410455.9** E **141447.0** N Ground Level **99.01** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
35.00-36.50	**35.00**	**100** **100**	**0.19** **0.02**	**82**		**Very weak, medium density, white with rare black specks CHALK.** **Discontinuities are:** **Set 1 are 0-15 degrees, very closely to widely spaced (40/510/200) clean or infilled (0/0/1) with grey marl or comminuted chalk, undulating and rough with many black specks and grey or brown surface staining.** **Set 2 are 60-75 degrees, closely to widely spaced (180/210/1040), clean (0/0/0), undulating and rough with many black specks and orangish brown surface staining.** **[GRADE A2]**	**35.00 (64.01)**		2 2 1 2
					(4)	**At 35.16m and 35.57m, with a subhorizontal grey marl seam (1mm thick).** **Between 35.57-35.63m, with rare orangish brown relic sponge traces (up to 35mm in size).** **Between 35.63-35.74m, with many angular to subangular small sheet flint fragments (up to 35mm in size).**			
36.32-36.50		**C**				**Between 35.84-35.89m, with a 75 degree inclined sheet flint (35mm thick).**			1
36.50-38.00	**36.50**	**100** **92**	**0.55** **0.04**	**78**		**Between 35.89-36.27m, with occasional angular to subangular small flint fragments (up to 15mm in size).** **Between 36.17-36.21m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks.**			1
						At 36.66m, with a relic burrow (35mm in size) with orangish brown staining. **Between 36.81-36.94m, with many grey marl seams (1mm thick).**			1 1
					(NI)	**Between 36.97-37.82m, with rare angular to subangular small flint fragments (up to 10mm in size).** **Between 36.97-37.18m, with occasional orangish brown relic sponge traces (up to 25mm in size).** **Between 37.18-37.30m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subangular small to medium flint fragments (up to 85mm in size).**			1
						At 37.71m, with a subhorizontal grey marl seam (1mm thick).			
38.00-39.50	**38.00**	**100** **100**	**1.39** **0.05**	**93**					
						Between 38.41-38.45m, with rare orangish brown relic sponge traces (up to 35mm in size).			
					(1)	**Between 38.62-38.79m, with many angular to subrounded small to medium nodular flints (up to 75mm in size).**			
39.00-39.47		**C**				**At 38.84m, with a angular to subrounded small nodular flint (25mm in size).**			
39.50-41.00	**39.50**	**100** **95**	**0.50** **0.19**	**65**		**Between 39.50-39.63m, with many angular to subrounded medium nodular flints (up to 85mm in size).** **At 39.66m, with a subhorizontal grey marl seam (1mm thick).**			1 1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **JR**
Checked by **CPL**
Figure **8 of 10**
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geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71810 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410455.9 E, 141447.0 N | Ground Level: 99.01 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 39.95-40.12m, with occasional angular to subangular small flint fragments (up to 45mm in size). Between 40.19-40.27m, non intact, recovered as angular to subangular fine to coarse gravel. With angular to subangular small flint fragments (up to 25mm in size).			1
					(2)				1
41.00-42.50	41.00	100 90	0.90 0.10	68	(NI)	Between 41.15-41.30m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional angular to subangular small flint fragments (up to 15mm in size). At 41.33m, with a angular small flint (45mm in size). At 41.40m, with a angular to subangular small flint fragment (20mm in size). Between 41.40-41.43m, discontinuity inclined 20 degrees, clean, stepped and rough with many black specks and occasional orangish brown surface staining. Between 41.58-41.65m, with a relic burrow (50mm in size) with orangish brown staining.			2
42.00-42.47		C			(2)	At 41.81m, with a subhorizontal grey marl seam (1mm thick). Between 42.00-42.11m, with many angular to subrounded small to medium nodular flints (up to 80mm in size). Between 42.06-42.20m, with much orangish brown relic sponge traces (up to 25mm in size).			
42.50-44.00	42.50	100 79	0.47 0.03	61	(NI)	Very weak locally weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 45 degrees, clean (0/0/0), undulating and rough with many black specks. Set 2 are 70-75 degrees, clean (0/0/0), undulating and rough with many black specks and grey and brown surface staining. At 4.250m, discontinuity inclined 5 degrees, clean, undulating and rough with many black specks and occasional orangish brown surface staining. Between 42.98-43.06m, with rare relic burrows (up to 35mm in size) with orangish brown staining. Between 43.20-43.22m, with many relic shell fragments (up to 15mm in size). Between 43.22-43.34m, non intact, recovered as angular to subangular fine to coarse gravel. With a angular to subrounded large flint (full diameter). Between 43.45-43.63m, non intact, recovered as angular to subangular fine to coarse gravel. Between 43.63-43.72m, with many relic shell fragments (up to 25mm in size).	42.50 (56.51)		1
					(3)				1
44.00-45.50	44.00	100 90	0.96 0.14	77	(NI)	Between 44.00-44.10m, non intact, recovered as angular to subangular fine to coarse gravel. Between 44.18-44.23m, with many subhorizontal grey marl seams (up to 5mm thick). Between 44.23-44.28m, with occasional subangular to subrounded small nodular flints (up to 25mm in size). Between 44.48-44.58m and 44.62-44.80m, with occasional orangish brown relic sponge traces (up to 35mm in size).			2
44.21-44.80		C			(1)	At 44.81m and 44.90m, with a subhorizontal grey marl seam (1mm thick).			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by JR
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71810
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410455.9 E 141447.0 N	Ground Level	99.01 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discont-inuity
					(NI)	Between 45.45-45.50m, non intact, recovered as angular to subangular fine to coarse gravel. With a angular sheet flint (10mm thick).	45.50 (53.51)		2
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR
Checked by CPL
Figure 10 of 10
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71811
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410524.0 E 141429.0 N	Ground Level	99.95 m OD

Drilling		Properties/Sampling				Strata			Scale 1:25
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
0.00- 0.30		B				TOPSOIL: Firm dark brown slightly sandy slightly gravelly clay with many rootlets. Gravel is angular to subangular fine to coarse chalk and flint.	G.L. (99.95)		
0.10		D							
0.10		ES							
0.10			PID=<0.1						
0.40- 0.70		B				Brown and white gravelly silty SAND. Gravel is angular to subangular fine to coarse flint and chalk.	0.35 (99.60)		
0.50		D							
0.50		ES							
0.50			PID=<0.1						
0.90- 1.20		B				Structureless CHALK, composed of white slightly sandy gravelly SILT. Clasts are very weak, low density, white with rare brown surface staining, angular to subangular and fine to coarse. [GRADE Dm]	0.90 (99.05)		
1.00		ES							
1.00			PID=<0.1						
1.20- 2.20	1.20	30					1.20 (98.75)		
		0							
1.20		D				CHALK, recovered as silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low to medium density, white with rare black specks. Matrix is white. Between 1.20-1.90m, assumed zone of core loss.			
1.20- 1.65	NIL	D			S36 (AZCL)				
					(NI)	Between 2.20-2.95m, assumed zone of core loss.			
2.20- 3.20	2.20	25							
		0							
2.20- 2.65	2.20	D			S14 (AZCL)				
					(NI)	Between 3.20-3.85m, assumed zone of core loss.			
3.20- 4.20	3.20	35							
		0							
3.20- 3.65	3.20	D			S15 (AZCL)				
					(NI)	Between 4.00-4.20m, with occasional angular to subangular small and medium nodular flint fragments (up to 70mm in size). Between 4.20-5.20m, no recovery. Driller notes white chalk with flints**			
4.20- 5.20	4.20	0							
4.20- 4.65	4.20	D			S16 (NR)				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.90	0.50	Inspection Pit	Arch	G.L.			27/08/19	08:00	35.50					Water strike
1.20	0.50	Inspection Pit	RT/AC	0.90	NIL	DRY	17/09/19	18:00						
50.70	0.12	Geobor S	RT/AC	G.L.			04/09/19	08:00						
				7.00	7.00	DRY	04/09/19	18:00						
				7.00	7.00	DRY	05/09/19	08:00						
				13.00	13.00	DRY	05/09/19	18:00						

Remarks

Inspection pit hand excavated to 0.90m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
** Drillers description.
At 7.00m, 150mm diameter casing installed to 1.20m depth, at 26.50m, this casing was progressed to 2.20m depth and at 28.00m, progressed to 3.70m depth.
At 7.00m, the casing was removed to allow 2 No. Packer Permeability tests to be undertaken.
At 13.00m, the casing was pulled back above 10.00m and at 19.00m, the casing was pulled back above 16.00m to allow Packer Permeability tests to be undertaken.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR/LC
Checked by CPL
Figure 1 of 11
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71811
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410524.0 E, 141429.0 N
Ground Level: 99.95 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 5.20-6.00m, assumed zone of core loss.			
5.20- 6.20	5.20	20 0							
5.20- 5.65	5.20	D			S47				
					(AZCL)				
					(NI)	Below 6.00m, with many subangular to subrounded small and medium flint fragments (up to 60mm in size). Between 6.20-6.80m, assumed zone of core loss.			
6.20- 7.00	6.20	25 0							
6.20- 6.65	6.20	D			S56				
					(AZCL)				
					(NI)				
7.00- 8.00	7.00	0				Between 7.00-8.00m, no recovery. Driller notes white chalk, occasional flint gravel band**			
7.00- 7.45	7.00	D			S33				
					(NR)				
						Between 8.00-8.75m, assumed zone of core loss.			
8.00- 9.00	8.00	25 0							
8.00- 8.45	8.00	D			S37				
					(AZCL)				
					(NI)				
						Between 9.00-9.30m, assumed zone of core loss.			
9.00-10.00	9.00	70 0			(AZCL)				
9.00- 9.45	9.00	D			S70				
					(NI)				
						Between 10.00-10.25m, assumed zone of core loss.			
10.00-10.45	10.00	D			S48				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
13.00	13.00	DRY	06/09/19	08:00
13.00	13.00	DRY	06/09/19	18:00
13.00	13.00	12.10	09/09/19	08:00
19.00	19.00	18.20	09/09/19	18:00
19.00	19.00	18.30	10/09/19	08:00
22.00	22.00	21.30	10/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS

The Geobore liner became jammed during the 19.00-20.50m core run, the 20.50-22.00m core run and the 23.50-25.00m core run.
The SPT at 22.00m damaged SPT hammer.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by: JR/LC
Checked by: CPL
Figure: 2 of 11
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71811 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410524.0 E, 141429.0 N | Ground Level: 99.95 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	10.00	83 50	0.11 0.07	7	(AZCL)				
					(NI)				
					(5)	Very weak locally weak, medium density, white with rare black specks CHALK.	10.60 (89.35)		1
					(NI)	Discontinuities where seen are: Set 1 are 85 degrees, clean (0/0/0), undulating and rough with many black specks.			
					(9)	Set 2 are 0-5 degrees, closely spaced (390/440/490), clean (0/0/0), undulating and rough with many black specks. Set 3 are 45-50 degrees, closely to medium spaced (100/310/520), clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining. Set 4 are 60-75 degrees, clean (0/0/0), undulating and rough with many black specks and occasional orangish brown surface staining.			2 3 4
11.30-11.40		C							1 2
11.50-13.00	11.50	90 44	0.09 0.05	0	(AZCL)	[GRADE A2]			
11.50-11.95	11.50	D			S88	Between 10.80-10.95m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With occasional angular to subangular small flint fragments (up to 40m in size).			
					(NI)	Between 11.35-11.40m, with rare orangish brown staining (up to 40mm in size). (Possible Sponge traces) Between 11.50-11.65m, assumed zone of core loss.			
					(7)	Between 11.65-12.05m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subangular small flint fragments (up to 60mm in size). Between 12.15-12.28m, non intact, recovered as very silty angular to subangular fine to medium gravel. With rare angular small flint fragments (up to 15mm in size).			3 1
12.90-13.00		C			(NI)	Between 12.73-13.00m, non intact, recovered as angular to subangular fine to coarse gravel.			3
13.00-14.50	13.00	87 57	0.22 0.03	25	(AZCL)	Between 13.00-13.20m, assumed zone of core loss.			
13.00-13.45	13.00				C59	Between 13.20-13.55m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse chalk. With occasional angular to subangular small flint fragments (up to 15mm in size). Between 13.55-13.65m, with rare orangish brown relic sponge traces (up to 25mm in size).			
					(NI)				2 1
					(6)				4 4
					(NI)	Between 14.40-14.50m, non intact, recovered as angular to subangular fine to coarse gravel.			2
14.50-16.00	14.50	85 38	0.25 0.06	8	(AZCL)	Between 14.50-14.73m, assumed zone of core loss.			
14.50-14.77	14.50				C100/ 125	Between 14.73-14.88m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)				3
					(4)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
22.00	22.00	20.80	11/09/19	08:00
31.00	31.00	30.20	11/09/19	18:00
31.00	31.00	29.75	12/09/19	08:00
43.00	43.00	41.50	12/09/19	18:00
43.00	43.00	29.25	13/09/19	08:00
46.00	46.00	40.50	13/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks AGS

Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-50.50m, Air/Mist, 100% return.

Logged by JR/LC
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Symbols and abbreviations are explained on the accompanying key sheet.

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71811 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410524.0 E, 141429.0 N | Ground Level: 99.95 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 15.11-15.26m, non intact, recovered as angular to subangular fine to coarse gravel. With an angular to subrounded medium flint (80mm in size) with a 3mm thick cortex.			
					(6)				2
					(NI)	Between 15.44-15.60m, non intact, recovered as angular to subangular fine to coarse gravel.			
15.60-15.76		C			(13)	Between 15.70-15.76m, with rare relic burrows (up to 35mm in size) with orangish brown staining.			3 3
					(NI)	Between 15.76-16.00m, non intact, recovered as angular to subangular fine to coarse gravel.			
16.00-17.50	16.00	90 35	0.24 0.06	27	(AZCL)	Between 16.00-16.15m, assumed zone of core loss.			
16.00-16.41	16.00				C100/ 260	Between 16.15-16.61m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to medium chalk.			
					(NI)	Between 16.40-16.61m, with many angular to subrounded fine and medium flints (up to 100mm in size).			1
16.79-17.02		C			(7)				2 3
					(NI)	Between 17.14-17.50m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional orangish brown relic sponge traces (up to 25mm in size).			
17.50-19.00	17.50	68 55	0.12 0.04	8		Between 17.50-17.98m, assumed zone of core loss.			
17.50-17.85	17.50				(AZCL) C100/ 200				
					(NI)	Between 17.98-18.18m, non intact, recovered as angular to subangular fine to coarse gravel. With rare angular to subangular small flint fragments (up to 25mm in size). Between 18.12-18.25m, with rare relic burrows (up to 35mm in size) with orangish brown staining.			4
18.60-18.73		C			(5)				2 4
									1
19.00-20.50	19.00	33 24	0.12 0.10	24		Between 19.00-20.00m, assumed zone of core loss.			
19.00-19.26	19.00				C100/ 125				
					(AZCL)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
46.00	46.00	29.55	16/09/19	08:00
50.70	50.50	30.60	16/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR/LC
Checked by CPL
Figure 4 of 11
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71811
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410524.0 E, 141429.0 N
Ground Level: 99.95 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 20.00-20.14m, non intact, recovered as angular to subangular small flint fragments (up to 20mm in size). Between 20.14-20.22m, with many orangish brown relic sponge traces (up to 45mm in size).			
20.38-20.50		C			(0)				
							20.50 (79.45)		
20.50-22.00	20.50	13 0				CHALK, recovered as white gravelly SILT. Clasts are weak, medium density, white with rare black specks, angular to subangular and fine to coarse. With rare angular to subangular small flint fragments (up to 45mm in size). Between 20.50-21.80m, assumed zone of core loss.			
20.50-20.75	20.50				C100/ 105				
					(AZCL)				
					(NI)				
22.00-23.50	22.00	87 67	0.20 0.04	33	(AZCL)	Between 22.00-22.20m, assumed zone of core loss.			
22.00-22.25	22.00				C100/ 125				
					(NI)				
							22.50 (77.45)		
22.91-23.11		C			(10)	Weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, medium spaced (200/390/570), clean (0/0/0), undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 35-45 degrees, closely to medium spaced (90/280/470), clean (0/0/0), undulating and rough with many black speck and orangish brown surface staining. Set 3 are 65-70 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks and orangish brown surface staining. [GRADE A2]			1 3 1 2 3 3 1 2 2
							23.50 (76.45)		
23.50-25.00	23.50	10 0				Between 22.70-22.71m, discontinuity inclined 50 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks and rare orangish brown surface staining. Between 22.89-23.03m, with occasional orangish brown relic sponge traces (up to 35mm in size).			
23.50-23.87	23.50				C75/ 215				
						CHALK, recovered as white slightly gravelly SILT. Clasts are weak, medium density, white with rare black specks, angular to subangular and fine to coarse. Between 23.50-24.85m, assumed zone of core loss.			
					(AZCL)				
					(NI)				
						Between 25.00-25.15m, assumed zone of core loss.			

Drilling / Progress / Groundwater

Drilling: Depth	Hole Dia	Technique	Crew	Progress: Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater: Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by JR/LC
Checked by CPL
Figure 5 of 11
27/03/2020

geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71811 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410524.0 E, 141429.0 N | Ground Level: 99.95 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
25.00-26.50	25.00	90 69	0.34 0.08	49	(AZCL)				
25.00-25.13	25.00				C100/ 80		25.15 (74.80)		
					(NI)	Very weak, locally weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, closely to widely spaced (190/480/680), clean or infilled (0/0/1) with comminuted chalk or marl, undulating and rough with many black specks and rare orangish brown surface staining. Set 2 are 80-90 degrees, clean (0/0/0), undulating and rough with many black specks. Set 3 are 35-45 degrees, clean (0/0/0), undulating and rough with many black specks. [GRADE A2]			2 3
					(10)				1
					(NI)				1
26.11-26.26		C			(4)	Between 25.15-25.30m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With occasional angular to subangular small flint fragments (up to 45mm in size). Between 25.16-26.15m, with occasional relic burrows (up to 35mm in size) with orangish brown staining. Between 25.50-25.67m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subangular small flint fragments (up to 15mm in size).			1
26.50-28.00	26.50	93 75	0.18 0.06	45	(AZCL)				
26.50-26.87	26.50				C100/ 215	Between 26.50-26.61m, assumed zone of core loss.			
					(NI)	Between 26.61-26.71m, non intact, recovered as angular to subangular fine to medium gravel. With many angular to subangular small flint fragments (up to 10mm in size).			1
					(1)				
					(NI)	Between 27.15-27.25m, non intact, recovered as angular to subangular fine to coarse gravel. Between 27.25-27.46m, discontinuity inclined 70 degrees,clean, undulating and rough with many black specks.			1 3
					(9)				2
						Between 27.84-27.95m, discontinuity inclined 70 degrees, clean, undulating and rough with many black specks.			2 1
28.00-29.50	28.00	75 49	0.22 0.05	44		Between 28.00-28.38m, assumed zone of core loss.			
28.00-28.32	28.00				(AZCL) C90/ 170				
					(NI)	Between 28.38-28.70m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse chalk. With occasional angular to subangular small flint fragments (up to 10mm in size). Between 28.70-28.79m, with occasional orangish brown relic sponge traces (up to 25mm in size).			
					(4)	Between 28.91-28.98m, with many orangish brown relic sponge traces (up to 35mm in size). Between 28.98-29.06m, non intact, recovered as angular to subangular fine to coarse gravel. Clasts with many orangish brown relic sponge traces (up to 30mm in size). Between 29.20-29.29m, with occasional relic burrows (up to 35mm in size) with orangish brown staining. At 29.25m, with an angular to subangular small flint fragment (8mm in size).			1 3 3
29.50-31.00	29.50	77 71	0.40 0.09	65		Between 29.38-29.50m, with many orangish brown relic sponge traces (up to 35mm in size). Between 29.50-29.85m, assumed zone of core loss.			
29.50-29.80	29.50				(AZCL) C100/ 150				
					(NI)	Between 29.85-29.94m, non intact, recovered as angular to subangular fine to coarse gravel.			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR/LC
Checked by CPL
Figure 6 of 11
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71811 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410524.0 E, 141429.0 N | Ground Level: 99.95 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
30.05-30.33		C			(2)	Between 30.33-30.53m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks.			
					(3)	Very weak and weak, medium density, white with black specks CHALK. Discontinuities are: Set 1 are 0-15 degrees, closely to medium spaced (100/250/540), clean, rarely infilled (0/0/1) with marl or comminuted chalk, undulating and rough with many black specks and rare orangish brown surface staining. [GRADE A2] Between 30.75-30.90m, with occasional relic burrows (up to 45mm in size) with orangish brown staining. Between 31.00-31.17m, assumed zone of core loss. Between 31.30-31.45m, with rare relic burrows (up to 45mm in size) with orangish brown staining.	30.60 (69.35)		1 1
31.00-32.50	31.00	89	0.30	67	(AZCL)				
31.00-31.24	31.00	89	0.06		C100/ 85				1
					(3)				1 1
						Between 32.38-32.40m, with many orangish brown relic sponge traces (up to 10mm in size).			1
32.50-34.00	32.50	88	0.55	64	(AZCL)	Between 32.50-32.68m, assumed zone of core loss.			
32.50-32.73	32.50	73	0.04		C100/ 125	Between 32.68-32.80m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			
					(NI)	Between 32.92-33.08m, with rare orangish brown relic sponge traces (up to 25mm in size).			
					(4)	Between 33.17-33.23m, with many orangish brown relic sponge traces (up to 40mm in size).			1 1 1
					(NI)	Between 33.55-33.66m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subrounded small and medium flint fragments (up to 65mm in size).			
33.66-34.00		C			(0)				
34.00-35.50	34.00	81	0.31	64		Between 34.00-34.28m, assumed zone of core loss.			
34.00-34.33	34.00	75	0.08		(AZCL) C100/ 180				
					(NI)	Between 34.28-34.38m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular to subangular small flint fragments (up to 60mm in size). At 34.44m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks. At 34.60m, with an angular to subrounded small nodular flint (up to 35mm in size). Between 34.81-34.92m, with occasional orangish brown relic sponge traces (up to 10mm in size).			1 1 1
					(4)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 7 of 11
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geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71811
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410524.0 E 141429.0 N	Ground Level	99.95 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
35.27-35.50		C				Between 35.03-35.19m, with rare orangish brown relic sponge traces (up to 15mm in size). At 35.19m, with a subangular to rounded small flint (20mm in size). Between 35.27-35.42m, with many orangish brown relic sponge traces (up to 35mm in size). Between 35.42-35.00m, with many grey marl seams (up to 1mm thick).			1
35.50-37.00	35.50	87 73	0.43 0.23	73	(AZCL)	Between 35.50-35.70m, assumed zone of core loss.		▽	
35.50-35.81	35.50				C100/160 (NI)	Between 35.70-35.84m, non intact, recovered as very silty angular to subangular fine to coarse gravel. At 35.78m, with occasional angular to subangular small flint fragments (up to 30mm in size).			
					(2)	At 36.00 and 36.07m, with a wispy grey marl seam (1mm thick) and wispy marl partings (<1mm thick).			1
					(NI)	At 36.40 and 36.42m, with grey marl seams (up to 1mm thick) and wispy marl partings (<1mm thick). Between 36.50-36.59m, non intact, recovered as subangular to subrounded medium to coarse gravel. With an angular small flint (40mm in size). At 36.85m, with an orangish brown relic sponge trace (up to 10mm in size). At 36.95m, with a marl seam (3mm thick) and wispy marl partings (<1mm thick).			
37.00-38.50	37.00	100 87	0.24 0.06	63		Between 37.00-37.25m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			
37.00-37.29	37.00				C100/170	At 37.35m, with an orangish brown relic sponge trace (up to 10mm in size).			
					(3)	Between 37.70-37.90m, with many orangish brown relic sponge traces (up to 20mm in size).			1
37.74-37.98		C							1
					(5)	Very weak and weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-5 degrees, closely to widely spaced (120/400/930), clean or infilled (0/1/5) with comminuted chalk, marl or zoophycos, undulating and rough with many black specks and occasional orangish brown surface staining.	37.98 (61.97)		2
38.50-40.00	38.50	87 77	0.45 0.12	77	(AZCL)	Between 37.90-41.50m, Set 2 are 50-70 degrees, closely to medium spaced (110/150/200), clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining. Below 46.06m, Set 3 are 45 degrees, clean or infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks and occasional orangish brown, rare grey, surface staining. [GRADE B2] Between 37.98-38.05m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks. At 38.05 and 38.40m, with an orangish brown relic sponge trace (up to 15mm in size). Between 38.50-38.70m, assumed zone of core loss. Between 38.70-38.84m, non intact, recovered as very silty angular to subangular fine to coarse gravel. Between 39.00-39.18m, with many orangish brown relic sponge bed traces (up to 60mm in size). At 39.07 and 39.02m, with a grey marl seam (<1mm thick). At 39.35m, with a grey marl seam (<1mm thick). At 39.50m, with occasional angular small flint fragments (up to 25mm in size). Between 40.00-40.25m, assumed zone of core loss.			2
38.50-38.84	38.50				C100/200 (NI)				2
					(3)				1
									1
									1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR/LC
Checked by CPL
Figure 8 of 11
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71811 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410524.0 E, 141429.0 N | Ground Level: 99.95 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
40.00-41.50	40.00	83 70	0.64 0.10	70	(AZCL) C100/ 160	At 39.60m, with rare angular to subangular small flint fragments (up to 20mm in size).			
40.00-40.31	40.00					Between 40.25-40.45m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)	At 40.45m, with rare subangular to subrounded small flints (up to 20mm in size).			
						At 40.52m, with many angular small flint fragments (up to 30mm in size).			1
40.74-41.10		C				At 40.60m, with an orangish brown relic sponge trace (50mm in size).			2
						At 40.72m, with an orangish brown relic sponge trace (20mm in size).			
					(3)	At 40.93m, with mineralised vein (5mm in size). (Possible fossil shell).			
						Between 41.00-41.23m, with many orangish brown relic sponge traces (up to 30mm in size).			
						At 41.03m, with an orangish brown relic sponge trace (10mm in size).			
						At 41.32m, with a marl seam (5mm thick) and wispy marl partings (<1mm thick).			1
						At 41.43m, with a subrounded small flint (45mm in size).			
41.50-43.00	41.50	96 88	0.59 0.08	88	(NI)	At 41.47m, with many orangish brown relic sponge traces (up to 15mm in size).			
41.50-41.73	41.50				C100/ 85	Between 41.50-41.64m, non intact, recovered as silty angular to subangular fine to coarse gravel.			1
						Between 41.60-41.81m, with many orangish brown relic sponge bed traces (up to 40mm in size).			1
						At 41.89m, with a subangular to subrounded small flint fragment (up to 25mm in size).			
						Between 42.10-42.20m, with many grey marl seams (<1mm thick).			
					(2)	At 42.27 and 42.40m, with orangish brown relic sponge traces (up to 15mm in size).			
						At 42.50m, with an orangish brown vein (1mm thick).			1
						At 42.70m, with a mineralised vein (1mm thick). (Possible shell).			
						At 42.95m, with a marl seam (5mm thick) and many wispy marl partings (<1mm thick).			
43.00-44.50	43.00	100 72	0.22 0.18	72	(NI)	Between 43.00-43.20m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			
43.00-43.17	43.00				C100/ 80	With many angular small flint fragments (up to 40mm in size).			
					(0)	Between 43.41-43.60m, non intact, recovered as subangular to subrounded cobbles.			
					(NI)				
43.85-44.08		C				At 43.90m, with an orangish brown relic sponge trace (up to 10mm in size).			1
					(3)	At 44.15 and 44.18m, with grey stylolites, stained dark orangish brown in places.			1
						At 44.29m, with a grey marl seam (1mm thick).			1
						At 44.38m, with an angular to subrounded small flint (20mm in size).			
						Between 44.45-44.50m, with many orangish brown relic sponge traces (up to 10mm in size).			
44.50-46.00	44.50	53 16	0.24	16		Between 44.50-45.20m, assumed zone of core loss.			
44.50-44.67	44.50				C100/ 80 (AZCL)				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR/LC
Checked by CPL
Figure 9 of 11
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** | Engineer **AECOM** | Borehole **R71811** | Project No **PC197626**

Client **HIGHWAYS ENGLAND** | National Grid Coordinates **410524.0** E **141429.0** N | Ground Level **99.95** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 45.20-45.45m, non intact recovered as very silty angular to subangular fine to coarse gravel.			
					(0)				
					(NI)	Between 45.69-45.80m, with many subangular to subrounded medium flints (up to 90mm in size) with a 1mm thick cortex. Between 45.80-46.06m, non intact, recovered as silty angular to subangular fine to coarse gravel. Clast with much orangish brown staining. With many angular to subangular small and medium flints (up to 70mm in size).			
46.00-47.50	46.00	100 87	0.35 0.12	87	C100/ 60	At 46.17m, with occasional dark orangish brown relic sponge traces (up to 20mm in size). At 46.18m, with a subangular small flint (20mm in size). At 46.47m, with an orangish brown relic sponge trace (up to 10mm in size).			3 1
46.00-46.13	46.00								
46.60-46.82		C			(5)	Between 46.48-46.55m, discontinuity inclined 80 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining. At 46.50 and 47.06m, mineralised veins (1mm thick). (Possible shells). Below 46.60m, high density.			1 1
						Between 47.11-47.16m, non intact, recovered as very silty subangular to subrounded fine to coarse gravel.			
						Between 47.33-47.46m, discontinuity inclined 80 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with rare black specks and occasional orangish brown surface staining.			1
47.50-49.00	47.50	97 78	0.50 0.09	69	(NI)	Between 47.48-47.60m, with many grey marl seams up to 7mm thick) with wispy grey marl partings (<1mm thick).			
47.50-47.63	47.50				C100/ 60	Between 47.50-47.72m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 47.76-47.90m, with many grey wispy marl seams (up to 5mm thick) with many wispy marl partings (<1mm thick). Between 47.85-47.95m, discontinuity inclined 80 degrees, clean, undulating and smooth with occasional black specks and orangish brown surface staining and slickensides. At 48.20m, with a grey marl seam (2mm thick).			3 1
					(3)				1
49.00-50.50	49.00	97 78	0.40 0.08	53	(NI)	Between 49.00-49.15m, non intact, recovered as very silty angular to subangular fine to coarse gravel with occasional small zoophycos flints (up to 1mm thick).			
49.00-49.09	49.00				C100/ 55	Between 49.20-49.27m, non intact, recovered as subangular to subrounded fine to coarse gravel. Between 49.20-49.35m, with occasional orangish brown relic sponge traces (up to 10mm in size). At 49.50m, with occasional angular to subangular small flint fragment (up to 15mm in size). At 49.54m, with occasional orangish brown relic sponge traces (up to 20mm in size). Between 49.54-49.73m, non intact, recovered as angular to subangular fine to coarse gravel. At 49.59m, with a mineral vein (1mm thick). (Possible zoophycos). At 49.80m, with a rounded small flint (20mm in size).			1 3 3 1 3
					(10)				
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **JR/LC**
Checked by **CPL**
Figure **10 of 11**
27/03/2020

geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71811**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410524.0** E **141429.0** N
Ground Level **99.95** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
50.05-50.50		C			(3)	At 49.81m, with a grey marl seam (2mm thick) with wispy marl partings (<1mm thick). Between 49.85-50.13m, with many grey marl seams (up to 5mm thick) with many wispy marl partings (<1mm thick). At 50.00m, with a finger flint (20mm in size). At 50.05m, with a finger flint fragment (up to 30mm in size). At 50.15m, with a grey marl seam (1mm thick).			3
50.50-50.70	50.50				C100/ 95		50.70 (49.25)		
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **JR/LC**
Checked by **CPL**
Figure **11 of 11**
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71812
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410547.7 E 141518.5 N	Ground Level	98.58 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (98.58)		
						TOPSOIL: Soft brown slightly sandy slightly gravelly silt. Gravel is subangular to subrounded fine to coarse chalk and flint.			
0.20		B							
0.20		D							
0.20		ES					0.30 (98.28)		
0.20			PID=<0.1			**Structureless CHALK, composed of silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low and medium density and white. Matrix is white. With occasional subangular to subrounded small and medium flint fragments.**			
0.50		B							
0.50		D							
0.50		ES							
0.50			PID=<0.1			**[GRADE Dc]**			
1.00		B							
1.00		D							
1.00		ES							
1.00			PID=<0.1						
1.20- 2.50	1.20	92 23	0.13 0.02	8	(NI)				
						Very weak, locally weak, medium density, white with occasional black specks CHALK.	1.40 (97.18)		
						Discontinuities are:			
					(11)	**Set 1 are 60 degrees, very closely to closely spaced (40/100/160), clean (0/0/0), stepped or undulating and rough with many black specks and occasional orangish brown surface staining.**			
						At 1.69m Set 2 are 40 degrees, very closely spaced (30/30/30), clean (0/0/0), planar and smooth with			
2.05- 2.12		C				**many black specks and occasional orangish brown surface staining.**			
							2.12 (96.46)		
					(NI)	**[GRADE A3]**			
						At 1.40m, with angular to subangular small nodular flint fragments (up to 40mm in size).			
						Between 1.67-1.68m, discontinuity inclined 10 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and			
					(AZCL)	**rare orangish brown surface staining.**			
2.50- 4.00	2.50	60 30	0.21 0.04	0					
					(NI)	**At 1.92m, subhorizontal discontinuity, clean, stepped and rough with occasional black specks.**			
						CHALK, recovered as silty angular to subangular fine to coarse GRAVEL with a medium subangular cobble content. Clasts are very weak, low density and white. Matrix is white. With occasional subangular to subrounded small and medium flint fragments.			
					(13)	**Between 2.40-2.50m, assumed zone of core loss.**			
						Between 2.80-2.85m, with angular to subangular small to medium nodular flint fragments (up to 60mm in size).			
					(0)	**Between 2.80-3.40m, solid core. Discontinuities are 35-40 degrees, very closely to closely spaced (40/90/120), infilled (1/1/1) with comminuted**			
						chalk, stepped and rough with many black specks and orangish brown surface staining.			
					(AZCL)	**At 2.85m, clasts with orangish brown staining (up to 15mm in size). (Possibly sponge).**			
						Between 3.00-3.31m, subvertical discontinuity, infilled (1mm thick) with comminuted chalk,			
4.00- 5.50	4.00	80 40	0.20 0.05	13	(5)	**stepped, rough with occasional black specks and rare orangish brown surface staining.**	4.00 (94.58)		
						Between 3.40-4.00m, assumed zone of core loss.			
					(NI)				
						Very weak and weak, low and medium density, white with rare black specks CHALK.			
					(10)	**Discontinuities where seen are:**			
						Set 1 are 0-10 degrees, very closely to widely			
					(NI)	**spaced (20/180/550), clean or infilled (0/0/1) with comminuted chalk or marl, stepped and rough with**			
						many black speck and occasional orangish brown surface staining.			
					(11)	**Set 2 are 40-50 degrees, very closely to widely spaced (20/240/560), clean or infilled (0/1/2) with**			
4.90- 4.98		C				**comminuted chalk or marl, stepped and planar and rough with many black specks and occasional orangish brown surface staining.**			

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.30	0.50	Inspection Pit	Arch	G.L.			27/08/19	08:00						None observed during drilling, possibly masked by flush.
1.20	0.50	Inspection Pit	AW/PB	29.50	29.50	28.80	27/08/19	18:00						
46.00	0.12	Geobor S	AW/PB	29.50	29.50	29.00	28/08/19	08:00						
				46.00	46.00	29.70	28/08/19	18:00						

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 1 of 10
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71812 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410547.7 E, 141518.5 N | Ground Level: 98.58 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Set 3 are 85-90 degrees, clean (0/0/0), stepped and rough with occasional black specks and rare orangish brown surface staining. [Grade A2/3]			
					(AZCL)	Between 4.20-4.30m, non intact, recovered as with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			
5.50- 7.00	5.50	99 40	0.12 0.02	8	(10)	Between 4.30-4.40m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, planar and rough with occasional black specks.			2 2
					(NI)	At 4.40m, with a trace fossil (1mm thick) stained orangish brown.			2
					(12)	Between 4.50-4.62m, non intact, recovered as with angular to subangular small to medium flint fragments (up to 98mm in size).			1 3
						Between 4.97-5.20m, non intact, recovered as angular to subangular gravel.			1
					(NI)	Between 5.20-5.50m, assumed zone of core loss.			3
					(5)	Between 5.70-5.80m and 6.13-6.20m, non intact, recovered as angular to subangular fine to coarse gravel.			
						At 6.18m, with angular to subangular small nodular flint fragments (up to 5mm in size).			
						Between 6.40-7.18m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(NI)				3
7.00- 8.50	7.00	93 60	0.09 0.06	0		At 7.15m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			2
7.42- 7.50		C							
					(7)	Between 7.50-7.78m, discontinuity inclined 70 degrees, infilled (1mm thick) with grey marl, undulating and rough with many black specks.			3 1 2
						Between 8.00-8.50m, non intact, recovered as angular to subangular gravel and cobbles.			2
					(NI)				
8.50-10.00	8.50	93 60	0.41 0.02	37		Between 8.50-8.57m, with angular to subangular small to medium flint fragments (up to 70mm in size).			1
					(7)	At 8.82m, with a orangish brown sponge trace (20mm in size).			2 2 1
						Between 9.30-9.63m, non intact, recovered as angular to subangular fine to coarse gravel.			2
					(NI)				
						At 9.58m, with angular to subangular small flint fragments (up to 30mm in size).			
									2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-46.00m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 2 of 10
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71812** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410547.7** E **141518.5** N Ground Level **98.58** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	**10.00**	**93** **73**	**0.40** **0.10**	**42**	**(1)**				2
10.28-10.53		**C**							
					(NI)	**Between 10.64-10.70m and 10.93-11.00m, with angular to subangular small to medium nodular flint fragments (up to 60mm in size).**			2
					(4)				1
					(NI)				
					(0)	**Between 11.15-11.25m, non intact, recovered as angular to subangular fine to coarse gravel.**			1
					(NI)				
					(2)				
11.50-13.00	**11.50**	**100** **63**	**0.40** **0.02**	**57**					1
					(25)	**Between 11.91-11.94m, discontinuity inclined 30 degrees, infilled (2mm thick) with a Platyceramus fossil, stepped and rough with occasional black specks and orangish brown surface staining.** **Between 11.98-12.00m, discontinuity inclined 18 degrees, infilled (1mm thick) with comminuted chalk, planar and smooth with many black specks.** **At 12.25m, with orangish brown surface staining (up to 10mm in size). (Possibly sponges).**			1 1
					(3)	**Between 12.62-12.79m, with angular to subangular small to medium nodular flint fragments (up to 99mm in size).** **At 12.90m, with orangish brown surface staining (up to 15mm in size). (Possible sponges).**			2 1 1
					(NI)	**Between 12.94-13.00m, non intact, recovered as angular to subangular gravel.**			
13.00-14.50	**13.00**	**100** **79**	**0.29** **0.03**	**53**					2 2
13.40-13.53		**C**			**(5)**				
					(NI)	**Between 13.70-13.75m, discontinuity inclined 65 degrees, infilled (2mm thick) with comminuted chalk, planar and smooth with many black specks.** **Between 13.80-13.92m, non intact, recovered as silty angular to subangular fine to coarse gravel. With angular to subangular small to medium nodular flint fragments (up to 90mm in size).** **Between 14.06-14.18m, discontinuity inclined 60 degrees, infilled (2mm thick) with grey marl, stepped and rough with many black specks and occasional orangish brown surface stained.**			1
					(2)				
14.50-16.00	**14.50**	**100** **92**	**0.27** **0.06**	**50**					
14.50-14.77		**C**				**Between 14.85-14.89m, with trace fossils (2mm thick) stained orangish brown.**			2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
Checked by **CPL**
Figure **3 of 10**
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71812
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410547.7 E 141518.5 N	Ground Level	98.58 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									1
									1 3
						Between 15.32-15.35m and 15.41-15.42m, discontinuity inclined 20 degrees, infilled (1mm thick) with marl, stepped and smooth with many black specks and rare to occasional orangish brown surface staining. Between 15.39-15.47m, discontinuity inclined 70 degrees, infilled (1mm thick) with grey marl, planar and smooth with many black specks and occasional orangish brown surface staining. At 15.90m, with a trace fossil (2mm thick) staining orangish brown.			
					(5)				
16.00-17.50	16.00	73 60	0.35 0.05	45					
							16.35 (82.23)		2
16.50-16.60		C				Very weak, locally weak, low and medium density, white with many black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, very closely to widely spaced (20/400/1280), clean or infilled (0/1/3) with comminuted chalk or marl, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 20-35 degrees, clean or infilled (0/1/2) with comminuted chalk or rare marl, stepped and planar and rough with many black specks and occasional orangish brown surface staining. Set 3 are 80-90 degrees, clean or infilled (0/0/1) with comminuted chalk or grey marl, undulating or stepped and rough with many black specks and occasional orangish brown surface staining. [GRADE B2]			1 2 1
					(9)				2
					(AZCL)				
17.50-19.00	17.50	100 73	0.37 0.10	67		Between 16.75-16.83m, discontinuity inclined 50 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks, occasional orangish brown surface staining and relic sponge traces. Between 16.89-17.00m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks, orangish brown surface staining and sponge traces. Between 17.10-17.50m, assumed zone of core loss.			1 3
17.50-17.70		C							
					(4)				1
									1
					(NI)	Between 18.55-18.66m and 18.84-19.00m, non intact, recovered as angular to subangular gravel.			1
					(6)				1
					(NI)				1
19.00-20.50	19.00	100 81	0.47 0.14	65		Between 19.00-19.19m, non intact, recovered as angular to subangular gravel. Clasts with orangish brown penetrating staining (up to 20mm thick). (Possibly sponges).			1
						At 19.43m, with angular to subangular small nodular flint fragments (up to 50mm in size). Between 19.50-19.56m, with angular to subangular small nodular flint fragments (up to 45mm in size). Between 19.58-19.66m, discontinuity inclined 35 degrees, infilled 21mm thick) with comminuted chalk, stepped and rough with many black specks and orangish brown surface staining.			
					(3)	At 19.86m, with occasional grey wispy marl seams (up to 2mm thick).			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 4 of 10
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71812** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410547.7** E **141518.5** N Ground Level **98.58** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 20.10-20.14m, with many trace fossils (2mm thick) stained orangish brown.			1
20.28-20.50		**C**				**At 20.33m, with occasional trace fossils (up to 2mm thick) stained orangish brown.**			
20.50-22.00	**20.50**	**87** **60**	**0.15** **0.10**	**53**	**(NI)**	**Between 20.65-20.88m, with a possible flint band, recovered as angular to subangular small to medium nodular flint fragments (up to 80mm in size).**			1 1 2 3
					(7)	**Between 21.50-21.61m, discontinuity inclined 50 degrees, clean, stepped and smooth, locally rough with many black specks.**			3
					(NI)	**Between 21.68-21.80m, non intact, recovered as angular to subangular fine to coarse gravel and cobbles.**			
					(AZCL)	**Between 21.80-22.00m, assumed zone of core loss.**			
22.00-23.50	**22.00**	**100** **73**	**0.30** **0.02**	**47**	**(5)**				1 1 1
22.53-22.83		**C**				**At 22.60m, with occasional trace fossils (2mm thick), with orangish brown staining.**			2
					(NI)	**Between 22.80-22.95m, non intact, recovered as angular to subangular fine to coarse gravel.**			
23.50-25.00	**23.50**	**100** **93**	**0.54** **0.18**	**73**	**(3)**	**At 23.50m, with angular and subangular small nodular flint fragments (up to 40mm in size).**			1 1 1 2 1
						Between 24.72-24.84m, discontinuity inclined 50 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks and occasional orangish brown surface staining.			2
						Between 24.90-29.50m, with occasional relic burrows (up to 50mm in size) with grey marl infill (up to 5mm thick).			
25.00-25.35		**C**							

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
Checked by **CPL**
Figure **5 of 10**
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71812
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410547.7 E 141518.5 N	Ground Level	98.58 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
25.00-26.50	25.00	100 83	0.50 0.02	80		Between 25.10-25.28m, with occasional orangish brown surface relic sponge traces (up to 3mm in size).			
					(NI)	Between 25.36-25.48m, with angular to subangular small and medium nodular flint fragments (up to 90mm in size). Between 25.36-25.60m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(2)	Between 25.86-25.93m, with occasional relic burrows (up to 50mm in size) with grey marl infill.			1 1
26.50-28.00	26.50	87 73	0.30 0.07	51	(NI)	Between 26.50-26.64m, non intact, recovered as silty angular fine to coarse gravel. With many angular to subangular small to medium nodular flint fragments (up to 99mm in size).			
26.80-27.04		C							1
					(5)				1 2
					(AZCL)	Between 27.50-27.65m, discontinuity inclined 60 degrees, infilled (1mm thick) with grey marl, stepped and rough with many black specks and orangish brown surface staining. At 27.65m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size). Between 27.80-28.00m, assumed zone of core loss.			1
28.00-29.50	28.00	100 76	0.48 0.09	70					
28.12-28.48		C							
					(4)	Between 28.59-28.90m, with much orangish brown staining (up to 15mm in size). (Possibly sponges). Between 28.70-28.00m, assumed zone of core loss.			1 2
					(NI)	Between 29.07-29.20m, non intact, recovered as angular to subangular fine to coarse gravel.			1 3 2
									1
29.50-31.00	29.50	87 70	0.34 0.19	50		Between 29.50-29.63m, with occasional relic burrows (up to 30mm in size) with grey marl infilled (up to 3mm thick). At 29.78m and 30.25m, with trace fossils (up to 2mm thick), stained orangish brown.			1
					(3)	Very weak, locally weak, medium density, white with	30.00 (68.58)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 6 of 10
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71812 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410547.7 E, 141518.5 N | Ground Level: 98.58 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						many black specks CHALK. Discontinuities are: Above 38.08m, Set 1 are 0-10 degrees, medium to widely spaced (350/500/660), clean or infilled (0/1/1) with comminuted chalk or grey marl, stepped or undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 20-35 degrees, clean or infilled (0/1/1) with comminuted chalk or grey marl, stepped and planar and rough with many black specks and occasional orangish brown surface staining. Set 3 are 80-90 degrees, clean or infilled (0/1/1) with comminuted chalk, undulating or stepped and rough with many black specks and occasional orangish brown surface staining.	30.00 (68.58)		1
					(AZCL)	[GRADE B2]			
31.00-32.50	31.00	90 50	0.25 0.02	40	(NI)	Between 30.45-30.65m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with many black specks. Between 30.80-31.00m, assumed zone of core loss. Between 31.00-31.10m, non intact, recovered as angular to subangular gravel. Between 31.47-31.55m, discontinuity inclined 50 degrees, infilled (1mm thick) with comminuted chalk, stepped and smooth with many black specks.			1 3 3 3 3 3 2 1
					(10)				
					(2)	At 31.98m and 32.00, with trace fossils (up to 2mm thick), stained orangish brown.			1 3
					(AZCL)	Between 32.35-32.50m, assumed zone of core loss.			
32.50-34.00	32.50	100 67	0.50 0.02	64	(0)				
					(NI)	Between 32.76-32.92m, non intact, recovered as angular to subangular fine to coarse gravel. At 32.80m, with angular to subangular small nodular flint fragments (up to 30mm in size).			
					(0)				
					(NI)	Between 33.14-33.26m, non intact, recovered as angular to subangular fine to coarse gravel. With angular to subangular small to medium nodular flint fragments (up to 70mm in size).			
33.48-33.92		C			(3)				2 1
					(NI)	Between 33.92-34.00m, non intact, recovered as angular to subangular fine to coarse gravel. At 34.00m, with angular to subangular small nodular flint fragments (up to 20mm in size).			
34.00-35.50	34.00	100 87	0.67 0.05	73					
						Between 34.39-34.46m, with angular to subangular small nodular flint fragments (up to 40mm in size).			1
					(3)				
						At 34.82m and 35.10m, with a grey wispy marl seam (<1mm thick).			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by SI
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Figure 7 of 10
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geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71812** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410547.7** E **141518.5** N Ground Level **98.58** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 35.18-35.24m, discontinuity inclined 40 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks.			1
									2
35.50-37.00	**35.50**	**90** **72**	**0.36** **0.10**	**61**	**(NI)**	**Between 35.50-35.73m, non intact, recovered as angular to subangular fine to coarse gravel.** **At 35.65m, with angular to subangular small nodular flint fragments (up to 20mm in size).** **Between 35.73-35.85m, with occasional trace fossils (3mm thick), stained orangish brown.**			
						Between 36.02-36.08m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			
					(2)				
36.43-36.64		**C**				**Between 36.43-36.50m, with occasional trace fossils (<1mm thick), stained orangish brown.**			2
						Between 36.64-36.85m, discontinuity inclined 70 degrees, infilled (8mm thick) with a sheet flint, planar and rough with many brick specks and occasional orangish brown surface staining. **Between 36.85-37.00m, assumed zone of core loss.**			
					(AZCL)				
37.00-38.50	**37.00**	**100** **77**	**0.33** **0.10**	**67**					3
					(3)				1
						Between 37.68-37.75m, with angular to subangular small to medium nodular flint fragments (up to 60mm in size).			
					(2)	**At 37.99m, with angular to subangular small nodular flint fragments (up to 15mm in size).** **At 38.05m, with a horizontal grey wispy marl seam (4mm thick).** **At 38.07m, with a grey marl seam (<1mm thick).**			1
					(NI)	**Between 38.38-38.50m, non intact, recovered as angular to subangular fine to coarse gravel.** **At 38.45m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).** **At 38.67m, with occasional trace fossils (2mm thick), stained orangish brown.**			
38.50-40.00 **38.50-39.03**	**38.50**	**100** **92** **C**	**0.86** **0.60**	**92**		**At 38.92m, with a sheet-like bivalve fossil (3mm thick). (Platyceramus)** **At 39.08m, with occasional trace fossils (2mm thick), stained orangish brown.**			
					(1)	**Between 39.36-39.40m, with angular to subangular small to medium nodular flint fragments (up to 80mm in size).** **At 39.50m and 39.62m, with a grey marl seam (<1mm thick).**			1
						Between 39.90-39.93m, with occasional grey wispy marl seams (up to 2mm thick). **At 40.05m, with a grey wispy marl seam (2mm thick).**			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **8 of 10**
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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71812 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410547.7 E, 141518.5 N | Ground Level: 98.58 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
40.00-41.50	40.00	93 79	0.72 0.10	71	(NI)	Between 40.09-40.10m, with a horizontal grey wispy marl seam (4mm thick). Between 40.10-40.24m, non intact, recovered as angular to subangular fine to coarse gravel. With angular to subangular small to medium nodular flint fragments (up to 90mm in size).			
41.22-41.48		C			(2)	At 40.94m, with a horizontal sheet-like bivalve fossil (3mm thick). (Platyceramus) Between 40.96-41.06m, discontinuity inclined 70 degrees, infilled (8mm thick) with a sheet flint, stepped and rough with many black specks and occasional orangish brown surface staining. Between 41.06-41.14m, with many grey wispy marl seams (up to 5mm thick). At 41.21m, with a grey marl seam (<1mm thick).			2
41.50-43.00	41.50	80 70	0.58 0.05	44	(AZCL)	Between 41.78-41.88m, with a 80 degree inclined sheet flint (up to 6mm thick). Between 42.00-42.03m, with occasional sheet-like bivalve (3mm thick). (Platyceramus) At 42.04m, with angular to subangular small nodular flint fragments (up to 50mm in size). Between 42.24-42.34m, with occasional trace fossils (2mm in size), stained orangish brown. Between 42.27-42.70m, discontinuities inclined 40-60 degrees, closely spaced (70/100/120), clean or infilled (0/1/2) with grey marl, stepped and rough with many black specks and occasional orangish brown surface staining. Between 42.70-43.00m, assumed zone of core loss.			1
43.00-44.50 43.00-43.24	43.00	100 70 C	0.24 0.10	25	(1) (NI) (3) (NI)	Between 43.45-43.54m, non intact, recovered as angular to subangular fine to coarse gravel. Between 43.73-43.90m, discontinuity inclined 50 degrees, infilled (1mm thick) with grey marl, stepped and rough with many black specks and occasional orangish brown surface staining. Between 43.90-43.92m, with angular to subangular small to medium nodular flint fragments (up to 90mm in size). Between 43.92-44.05m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content. Between 44.30-44.35m, with occasional trace fossils (2mm thick), stained orangish brown. Between 44.35-44.50m, non intact, recovered as angular to subangular fine to coarse gravel.			3
44.50-46.00	44.50	99 78	0.60 0.25	67	(0) (NI)	Between 44.62-44.68m, with angular to subangular small nodular flint fragments (up to 45mm in size). Between 44.75-44.85m, non intact, recovered as angular to subangular fine to coarse gravel. Between 45.04-45.10m, with many grey wispy marl seams (up to 10mm thick).			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
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Figure 9 of 10
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71812
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410547.7 E 141518.5 N	Ground Level	98.58 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
45.50-45.90		C			(1)	At 45.16m, with a grey marl seam parting (1mm thick). At 45.34m, with occasional relic burrows (up to 20mm in size) with grey marl infill (up to 3mm thick). Between 45.50-45.63m, with many trace fossils (up to 3mm thick), stained orangish brown. At 45.69m and 45.85m, with occasional sheet-like bivalve fossil (3mm thick). (Platyceramus) Between 45.93-45.98m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			4
					(NI)	Between 45.98-46.00m, assumed zone of core loss.	46.00 (52.58)		
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Figure 10 of 10
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71814 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410663.1 E, 141496.1 N | Ground Level: 97.45 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (97.45)		
0.10- 0.20		B				TOPSOIL: Soft dark brown slightly sandy slightly gravelly silt. Gravel is angular to subangular fine to coarse flint and chalk.			
0.20		D							
0.20		ES							
0.20			PID=<0.1						
							0.40 (97.05)		
0.50- 0.70		B				Structureless CHALK, composed of sandy silty angular to subangular fine to coarse GRAVEL. Clasts are weak, low and medium density and white. Matrix is greyish brown. With occasional angular to subangular small and medium flints. [GRADE Dc]			
0.50		D							
0.50		ES							
0.50			PID=<0.1						
1.00- 1.20		B							
1.00- 1.20		D							
1.00- 1.20		ES							
1.00- 1.20			PID=<0.1						
							1.20 (96.25)		
1.20- 2.65	1.20	21				CHALK, recovered as sandy silty angular to subangular fine to coarse GRAVEL. Clasts are very weak and weak, low and medium density and white. Matrix is greyish brown. With occasional angular to subangular small and medium flints. Between 1.20-2.35m, assumed zone of core loss.			
1.20- 2.65		0 C			(AZCL)				
						Below 2.35m, slightly silty. Matrix is white.			
					(NI)				
						Between 2.65-2.85m, assumed zone of core loss.			
2.65- 4.15	2.65	87 7	0.07 0.02	0	(AZCL)				
					(NI)				
						Between 3.20-3.45m, solid core. Discontinuities at 3.25m and 3.40m are inclined 5 degrees, clean (0/0/0), planar and rough with many black specks. Discontinuities at 3.20 and 3.35m, are inclined 85 degrees, clean, planar and rough with many black specks.			
					(>25)				
3.80- 3.90		C				Between 3.80-3.90m, solid core. Discontinuities are inclined 5 degrees, clean, planar and rough with many black specks.			
					(NI)				
4.15- 5.65	4.15	73 53	0.07 0.03	0					
							4.45 (93.00)		2
						Very weak to weak, low to medium density, white with rare black specks CHALK. Discontinuity are: Set 1 are 10 degrees, closely spaced (70/70/70), clean (0/0/0), planar and rough with many black specks. Set 2 are 85 degrees, clean (0/0/0), planar and rough with many black specks. [GRADE A3]			2 1 1 1
					(>25)				

Drilling

Depth	Hole Dia	Technique	Crew
0.40	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AC/KH
46.15	0.12	Geobor S	AC/KH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			20/08/19	08:00
1.20	NIL	DRY	20/08/19	18:00
1.20	NIL	DRY	23/08/19	08:00
11.65	11.65	DRY	23/08/19	18:00
11.65	11.65	DRY	27/08/19	08:00
46.15	46.15	30.10	27/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.40m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR
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Figure 1 of 10
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71814
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410663.1 E 141496.1 N	Ground Level	97.45 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 4.84-4.88m, with rare greyish brown surface staining on clasts (up to 30mm in size). Between 5.01-5.13m, discontinuity inclined 65 degrees, clean, planar and rough with many black specks. Between 5.25-5.65m, assumed zone of core loss.			
					(AZCL)				
5.65- 7.15	5.65	73 21	0.08 0.03	0	(NI)	Between 5.65-5.96m, non intact, recovered as silty angular to subangular fine to coarse gravel.			
							5.96		
5.99- 6.07		C			(24)	Very weak and weak, medium density, white with rare black specks CHALK. Discontinuity are: Set 1 are 0-15 degrees, very closely to medium spaced (30/125/430), clean rarely infilled (0/0/1) with comminuted chalk or marl, planar rarely undulating and rough with many black specks and rare dark grey surface staining. Set 2 are 70-85 degrees, clean (0/0/0), planar and rough with many black specks. Set 3 are 30-45 degrees, clean or infilled (0/0/2) with comminuted chalk, planar and rough with many black specks and rare orangish brown surface staining. [GRADE A3]	(91.49)		1 1 1 1 1 1 1 1 1 2
					(NI)				
					(5)				
					(AZCL)	Between 6.39-6.54m, non intact, recovered as angular to subangular fine to coarse gravel. With rare subangular small flint fragments (up to 25mm in size). Between 6.69-6.74m, with a marl seam (1mm thick) inclined at 45 degrees. Between 6.75-7.20m, assumed zone of core loss. Between 7.20-7.35m, non intact, recovered as angular to subrounded medium to coarse gravel.			
7.15- 8.65	7.15	97 37	0.14 0.10	16	(NI)				
					(3)	Between 7.50-7.68m, with rare orangish brown surface staining on clasts (up to 20mm in size). (Possible sponge trace)			1
					(NI)	Between 7.68-7.81m, 7.99-8.14m and 8.24-8.39m, non intact, recovered as angular to subangular fine to coarse gravel.			2
					(6)				
					(NI)				
8.14- 8.24		C			(20)				1
					(NI)				1
					(13)				1 3
						Between 8.55-9.08m, non intact, recovered as angular to subangular medium to coarse gravel.			1
8.65-10.15	8.65	93 32	0.13 0.03	25	(NI)				1
					(14)				1 2
					(NI)	Between 9.30-9.40m, non intact, recovered as angular to subangular fine to medium gravel. With many subangular small flint fragments (up to 25mm in size).			1
					(10)				1 3
					(NI)	Between 9.70-10.05m, non intact, recovered as silty angular to subangular fine to coarse gravel. With rare subangular small flint fragments (up to 20mm in size). Between 10.05-10.30m, assumed zone of core loss.			1 2

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks AGS Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-46.15m, Air/Mist, 100% return.

Logged by JR
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Figure 2 of 10
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71814 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410663.1 E, 141496.1 N | Ground Level: 97.45 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.15-11.65	10.15	90 55	0.32 0.16	25	(AZCL) (NI)	Between 10.25-10.33m, with many small to medium flint fragments (up to 65mm in size). Between 10.30-10.52m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular to subrounded small flints (up to 30mm in size).			3 2
10.74-10.88		C			(5)	Between 10.74-11.45m, with rare very small flint fragments (up to 7mm in size).			1 1 1 1
11.65-13.15	11.65	93 63	0.09 0.01	41	(AZCL) (NI)	Between 11.65-11.75m, assumed zone of core loss. Between 11.75-12..00m, non intact, recovered as silty angular to subangular fine to coarse gravel. With many subangular small flint fragments (up to 25mm in size).	12.00 (85.45)		
					(6)	Very weak and weak, medium density, white with rare black specks CHALK. Discontinuity are: Set 1 are 0-10 degrees, very closely to medium spaced (20/190/450), clean or infilled (0/0/1) with comminuted chalk or marl, planar rarely stepped and rough with many black specks. Set 2 are 30-50 degrees very closely to medium spaced (40/260/530), clean rarely infilled (0/0/1) with marl, planar and rough with many black specks. Between 12.00-12.34m and 15.60-15.70m, Set 3 are 20 degrees, very closely spaced (20/30/50), clean or infilled (0/1/1) with comminuted chalk, planar and rough with many black speck. [Grade A2/3]			3 3 3 2 2 2
13.15-14.65 13.20-13.33	13.15	100 73 C	0.33 0.05	33	(NI) (7) (NI)	Between 12.13-12.19m, with rare relic burrows (45mm in size) stained orangish brown. At 12.58m, with a subhorizontal grey marl seam (1mm thick). Between 13.00-13.15m, non intact, recovered as angular to subangular medium to coarse gravel. Between 13.45-13.70m, non intact, recovered as angular to subangular fine to coarse gravel.			2 1 1 1
					(9)	At 14.43m, with a angular small nodular flint (50mm in size).			1 1 1 1 1
14.65-16.15	14.65	90 63	0.07 0.03	53	(NI) (AZCL) (NI)	Between 14.50-14.65m, non intact, recovered as angular to subangular coarse gravel. Between 14.65-14.80m, assumed zone of core loss. Between 14.80-15.08m and 15.15-15.37m, non intact, recovered as angular to subangular fine to coarse gravel. With many subangular small to medium flint fragments (up to 65mm in size).			1 2

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 3 of 10
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71814** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410663.1** E **141496.1** N Ground Level **97.45** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(>25)				1 1
					(NI)	Between 15.37-15.54m, discontinuity inclined 80 degrees, clean, planar and rough with many black specks. Between 15.47-15.54m, with many relic burrows (up to 55mm thick) stained orangish brown.			1 3 3
					(8)	Between 15.98-16.03m, with a marl seam (1mm thick) inclined at 45 degrees.			1 2
16.15-17.65	16.15	97 40	0.24 0.05	33	(NI)	Between 16.15-16.38m, non intact, recovered as angular to subangular fine to coarse gravel. With rare subangular small flint fragments (up to 30mm in size).			
					(7)	Between 16.45-16.76m, discontinuity inclined 70 degrees, clean, planar and rough with many black specks. Between 16.65-16.69m, with occasional relic burrows (up to 45mm in size) stained orangish brown.			1 2 2
17.08-17.29		C							1
					(NI)	At 17.25m, with a small subrounded nodular flint (up to 35mm in size). Between 17.29-17.50m, non intact, recovered as angular to subangular fine to coarse gravel with occasional small to medium flint fragments (up to 65mm in size).			1 1
17.65-19.15	17.65	100 67	0.19 0.03	33	(5)	At 17.80m, with a subhorizontal grey marl seam (1mm thick). Between 18.02-18.15m, with much orangish brown relic sponge traces (up to 35mm in size).			1 1 1 2
					(NI)	Between 18.40-18.50m, non intact, recovered as angular to subangular fine to coarse gravel. At 18.51m, with a subangular small flint fragment (25mm in size). Between 18.67-19.05m, discontinuity inclined 70 degrees, clean, planar and rough with occasional black specks.			1 1 1
					(5)	Between 19.05-19.33m, with much orangish brown relic sponge traces (up to 65mm in size).			
19.15-20.65	19.15	100 80	0.29 0.04	33	(NI)	Between 19.33-19.40m, non intact, recovered as angular to subangular fine to coarse silty gravel. With rare angular to subangular small flint fragments (up to 15mm in size).			1
19.52-19.81		C							1 2 1
					(6)				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **4 of 10**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71814** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410663.1** E **141496.1** N Ground Level **97.45** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 20.50-20.65m, non intact, recovered as angular to subangular flint to coarse gravel. With rare subangular small flint fragments (up to 25mm in size).			1 2 2
20.65-22.15	20.65	83 84	0.41 0.04	72		At 20.60m, with a subrounded medium nodular flint (100mm in size).			
					(4)				
21.45-22.76		C				Between 21.53-21.90m, with occasional grey marl seams (up to 1mm thick) and rare subangular small flint fragments (up to 20mm in size). At 21.65m, with a subhorizontal grey marl seam (1mm thick). Between 21.81-21.90m, discontinuity inclined 65			1 1 3
					(20)	degrees, clean, planar and rough with many black specks and occasional grey surface staining.	21.83 (75.62)		
					(AZCL)	Very weak and weak, medium density, white with rare black specks CHALK. Discontinuity are:			
22.15-23.65	22.15	100 69	0.22 0.03	37	(NI)	Set 1 are 0-15 degrees, very closely to widely spaced (30/320/860), clean or infilled (0/1/2) with comminuted chalk, planar and rough with occasional			1
					(10)	to many black specks. Between 24.54-25.38m, Set 2 are 30-45 degrees, clean rarely infilled (0/0/1) with comminuted			1
					(NI)	chalk, planar and rough with many black specks. Set 3 are 65-85 degrees, clean (0/0/0), planar and			
					(9)	rough with many black specks. [GRADE B2] Between 21.90-22.15m, assumed zone of core loss.			1
					(NI)	Between 22.15-22.34m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 25mm in size). Between 22.54-22.66m, non intact, recovered as angular to subangular fine to coarse gravel. Between 22.66-22.98m, with occasional orangish brown relic sponge traces (up to 45mm in size). Between 22.99-23.10m, non intact, recovered as angular to subangular fine to coarse gravel. With many subangular to subrounded small to medium flint fragments (up to 65mm in size).			3 1 1 1 3 1
23.65-25.15	23.65	100 93	0.30 0.02	84		Between 23.20-23.21m, discontinuity inclined 45 degrees, clean, planar and rough with many black specks and occasional grey surface staining. At 23.56m, with a angular small nodular flint (35mm in size). Between 23.83-23.88m, with occasional light grey circular staining (up to 10mm in size). Between 23.93-23.97m, with occasional relic burrows (up to 15mm in size) stained orangish brown. Between 24.24-24.40m, with many subangular small flint fragments (up to 45mm in size).			1
						Between 24.43-24.50m, with much orangish brown relic sponge traces (up to 35mm in size).			1 2 2 3 1
24.80-25.00		C							3

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **5 of 10**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71814** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410663.1** E **141496.1** N Ground Level **97.45** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									3
25.15-26.65	25.15	100 93	0.16 0.14	57	(5)	Between 25.25-25.29m, with occasional orangish brown relic sponge traces (up to 20mm in size). Between 25.72-25.79m, with rare relic burrows (up to 35mm in length) stained orangish brown. At 26.24m, with a subhorizontal grey marl seam (1mm thick). At 26.38m, with a subangular small nodular flint (45mm in size).			2 2 3 1 1 3
26.65-28.15	26.65	93 87	0.39 0.16	72		At 27.30m, with a subangular small flint fragment (25mm in size).			1 1 1
27.60-27.90		C				Between 27.70-27.90m, with much orangish brown relic sponge traces (up to 35mm in size).			1
					(NI)	Between 27.99-28.15m, non intact, recovered as angular to subangular medium to coarse gravel. With a subangular small nodular flint (40mm in size)			3 1
28.15-29.65	28.15	93 84	0.31 0.03	81	(2)	Very weak and weak, medium density, white with rare black specks CHALK. Discontinuity are: Set 1 are 0-15 degrees, very closely to very widely spaced (50/490/2290), clean or infilled (0/0/2) with comminuted chalk or rare marl, planar rarely undulating and rough with occasional to many black specks and occasional brown surface staining. Set 2 are 60-85 degrees, clean (0/0/0), planar and rough with occasional to many black specks and occasional brown or grey surface staining. [GRADE A2] At 28.57m, with an undulating grey marl seam (60mm in length). Between 28.67-28.77m, with rare relic burrows (up to 35mm in size) stained orangish brown. At 29.10m, with a subrounded small nodular flint (45mm in size).	28.15 (69.30)		2 1
29.37-29.55		C				Between 29.34-29.37m, with much orangish brown relic sponge traces (up to 70mm in size). At 29.48m, with an angular small flint fragment (5mm in size).			2
29.65-31.15	29.65	100 77	0.58 0.17	39	(1)	Between 29.85-29.91m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular to subrounded small flint fragments (up to 35mm in size). Between 29.71-29.82m, with occasional orangish brown relic sponge traces (up to 25mm in size).			

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **6 of 10**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71814** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410663.1** E **141496.1** N Ground Level **97.45** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									1
					(NI)	Between 30.33-30.50m, non intact, recovered as angular to subangular fine to coarse gravel. With many grey marl seams (1mm thick) on clasts.			
30.50-36.80		C				At 30.68m, with a subhorizontal grey marl seam (5mm thick).			2
					(3)				2 1
						Between 31.10-31.15m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 31.15-31.30m, with occasional subangular small flint fragments (up to 5m in size). Below 31.30m, with occasional light grey marl seams (3mm thick). Between 31.47-31.52m, with a 45 degree relic burrow (45mm in length) stained brown.			1
31.15-32.65	31.15	100 100	0.75 0.15	100	(NI)				1
						Between 32.56-32.60m, with rare orangish brown relic sponge traces (up to 15mm in size). Between 32.60-32.65m, discontinuity inclined 30 degrees, clean, planar and rough with many black specks.			1
32.65-34.15	32.65	100 96	0.43 0.15	87		Between 32.90-32.93m, discontinuity inclined 20 degrees, clean, planar, and rough with many black specks and occasional orangish brown surface staining (up to 25mm in size). At 33.13m, with a subangular small nodular flint (35mm in size).			2 1
33.16-33.50		C				Between 33.45-33.47m, with occasional orangish brown relic sponge traces (up to 25mm in size). Between 33.50-33.60m, with rare orangish brown relic sponge traces (up to 10mm in size). At 33.76m, with a subangular small flint fragment (10mm in size). At 33.92m, with a a subrounded medium flint fragment (90mm in size). Between 33.96-34.15m, with rare subangular small flint fragments (up to 5mm in size).			1
					(3)				1
34.15-35.65	34.15	100 89	0.42 0.05	78		At 34.50m, with a relic burrow (25mm in size) stained brown. At 34.75m, with a subangular small flint fragment (25mm in size). At 34.97m and 35.02m, with subhorizontal grey marl seams (1mm thick).			1 1 2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **7 of 10**
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71814** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410663.1** E **141496.1** N Ground Level **97.45** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 35.10-35.15m, discontinuity inclined 30 degrees, clean, planar and rough with many black specks. **At 35.33m, with a subangular small flint fragment (35mm in size).**			2 1 1
35.65-37.15 **35.65-36.15**	**35.65**	**100** **93** **C**	**0.40** **0.33**	**87**		**Between 35.75-35.79m, with many grey marl seams (up to 1mm thick).** **Between 35.96-36.10m, with many orangish brown relic sponge traces (up to 45mm in size).** **At 36.00m, with a subrounded small flint fragment (25mm in size).** **Between 36.15-36.20m, with a subangular large nodular flint (80mm in size).** **Between 36.23-36.37m, with occasional orangish brown relic sponge traces (up to 40mm in size).**			1 2 1
37.15-38.65	**37.15**	**57** **33**	**0.76** **0.65**	**33**	**(NI)** **(2)** **(NI)** **(AZCL)**	**Between 37.15-37.28m, non intact, recovered as angular to subrounded medium to coarse gravel.** **Between 37.55-37.61m and 37.84-38.00m, non intact, recovered as silty angular to subangular fine to corse gravel. With many subangular to subrounded small flint fragments (up to 25mm in size).** **Between 38.00-38.65m, assumed zone of core loss.**			2
38.65-40.15 **39.10-39.39**	**38.65**	**100** **68** **C**	**0.45** **0.09**	**68**	**(3)**	**At 39.29m, with a subhorizontal grey marl seam (1mm thick).** **Between 39.39-39.45m, non intact, recovered as angular to subangular fine to coarse gravel with occasional small nodular flint fragments (up to 45mm in size).** **At 39.50m, with a subangular small flint fragment (25m in size).** **Between 39.66-39.74m, with rare relic burrows (15mm in size) stained orangish brown.** **Between 39.90-40.15m, non intact, recovered as angular to subangular fine to coarse gravel. With many subangular small flint fragments (up to 25mm in size).**			2 1 2 2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **JR**
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Figure **8 of 10**
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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71814 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410663.1 E, 141496.1 N | Ground Level: 97.45 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)				
40.15-41.65	40.15	100 97	0.62 0.13	75		Between 40.15-40.21m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 40.29-40.34m, with rare subangular small flint fragments (up to 30mm in size). Between 40.29-40.39m, with many orangish brown relic sponge traces (up to 25mm in size).			1
						At 40.95m, with a orangish brown relic sponge trace (15mm in size). At 41.00m, with a subhorizontal grey marl seam (1mm thick). Between 41.03-41.07m, with many subhorizontal grey marl seams (up to 3mm thick).			2 2 2
41.65-43.15	41.65	100 100	0.53 0.10	77		Between 41.96-42.17m, with a large sheet flint (190mm in length, 10mm thick). Between 42.17-42.89m, with occasional subangular small flint fragments (up to 10mm in size). Between 42.17-142.23m, with a grey marl seam (2mm thick) inclined at 45 degrees.			2
42.30-42.70		C			(2)				
						At 42.80m, with a relic bivalve shell fragment (5mm in size). Between 43.02-43.10m, with occasional subhorizontal grey marl seams (1mm thick).			1 1 1 1
43.15-44.65	43.15	100 87	1.12 0.12	80		At 43.41m, with a relic fossil fragment (10mm in size). Between 43.93-44.00m, with many relic burrows (25mm in size) stained orangish brown. At 44.55m, with a relic bivalve shell fragment (7mm in size). Between 44.65-44.77m, non intact, recovered as angular to subrounded medium coarse gravel.			1 1
44.65-46.15	44.65	100 73	0.26 0.07	57	(NI)				
44.94-45.35		C							1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by JR
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Figure 9 of 10
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71814
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410663.1 E 141496.1 N	Ground Level	97.45 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(4)	Between 45.50-45.55m, non intact, recovered as angular to subangular fine to corse gravel. With many subangular to subrounded small flint fragments (up to 25mm in size). Between 45.57-45.85m, with a large sheet flint (209mm in length, 10mm thick). At 45.97m, with a subhorizontal grey marl seam (1mm thick).			2 2 2
						End of Borehole	46.15 (51.30)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by JR
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Figure 10 of 10
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geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71815 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410664.4 E, 141562.4 N | Ground Level: 97.36 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (97.36)		
0.10- 0.20		B				TOPSOIL: Soft dark brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subangular fine to coarse chalk and flint.			
0.20		D							
0.20		ES							
0.20			PID=<0.1			From 0.20m, with a low cobble content of subangular flint.	0.30 (97.06)		
0.30		B					0.40 (96.96)		
0.30		D				Dark brown, locally orangish brown, slightly sandy very silty GRAVEL of angular to subangular fine to coarse chalk and flint.			
0.60- 0.80		B							
0.60		D							
0.60		ES							
0.60			PID=<0.1			Structureless CHALK, composed of very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low and medium density and white. Matrix is white, locally cream. With occasional subangular to subrounded small nodular flints. [GRADE Dc]			
1.00- 1.20		B							
1.00		D							
1.00		ES							
1.00			PID=<0.1				1.20 (96.16)		
						CHALK with flint**			
2.00- 3.50	2.00	67 13		0		CHALK, recovered as sandy silty angular to subangular fine to coarse GRAVEL with a low subangular cobble content. Clasts are weak, low density and white with occasional orangish brown surface staining. Matrix is cream. With occasional angular to subangular small to medium nodular flints.	2.00 (95.36)		
					(NI)	Between 2.45-2.51m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			
						Between 2.51-2.70m, solid core.			
						At 2.51-2.64m, discontinuity inclined 80 degrees, clean, stepped and rough with rare black specks.			
2.93- 3.00		C				At 2.64-2.70m, discontinuity inclined 40 degrees, clean, stepped and rough with rare orangish brown surface staining.			
						Between 3.00-3.50m, assumed zone of core loss.			
					(AZCL)				
3.50- 5.00	3.50	67 27	0.07 0.02	0		Between 3.50-4.35m, solid core. Discontinuities are inclined 10 degrees, closely spaced (60/65/70), clean (0/0/0), stepped and rough with rare black specks and occasional orangish brown surface staining.			
						Between 3.80-4.06m, discontinuity inclined 70 degrees, clean, stepped and rough with occasional orangish brown surface staining.			
					(5)				
						Between 4.35-4.50m, with many angular to subangular small to medium nodular flint fragments (up to 80mm in size).			
					(NI)	Between 4.50-5.00m, assumed zone of core loss.			
					(AZCL)				

Drilling

Depth	Hole Dia	Technique	Crew
0.40	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	Arch
2.00	0.12	Rotary Open Hole	SP/PB
12.70	0.12	Geobor S	SP/PB
44.65	0.12	Geobor S	AC/KH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			20/08/19	08:00
1.20	NIL	DRY	20/08/19	18:00
1.20	NIL	DRY	22/08/19	08:00
6.50	6.50	DRY	22/08/19	18:00
6.50	6.50	DRY	23/08/19	08:00
9.00	9.00	DRY	23/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None observed during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.40m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
At 1.70m, 150mm diameter casing installed to 1.70m depth.
At 9.00m, the casing was pulled back to 8.00m to allow Falling Head Permeability tests to be undertaken.
The SPT split spoons were damaged undertaking the 17.65m test. Instructed to use CPT for remaining tests. CPT at 32.02m damaged SPT hammer pins.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
Checked by CPL
Figure 1 of 9
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71815 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410664.4 E, 141562.4 N | Ground Level: 97.36 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
5.00- 6.50	5.00	40 0			(NI)	At 5.59m, with a subangular small flint (40mm in size). Between 5.60-6.50m, assumed zone of core loss.			
					(AZCL)				
6.50- 8.00	6.50	50 27	0.09 0.02	0	(0)	CHALK recovered as angular to subangular fine to coarse medium density gravel. With many angular to subangular small to medium nodular flint fragments.	6.50 (90.86)		
					(NI)				
6.82- 6.88		C			(10)	Between 6.80-7.03m, intact section. At 6.82m, horizontal discontinuity, infilled (1mm thick) with grey marl, planar and smooth with occasional black specks.			
					(NI)	Between 7.03-7.14m, with many angular to subangular small to medium nodular flint fragments (up to 60mm in size).			
					(0)	Between 7.25-8.20m, assumed zone of core loss.			
					(AZCL)				
8.00- 9.00	8.00	80 38	0.10 0.02	10					
8.00- 8.45		D			(NI)	Between 8.20-8.30m, with occasional angular to subangular small nodular flint fragments (up to 40mm in size).			
					(0)	Between 8.30-8.67m, intact section. Discontinuities are inclined 0-10 degrees, extremely closely to very closely spaced (10/30/70) clean, rarely infilled (0/0/1) with grey marl, stepped or planar and rough with occasional black speck and rare orangish brown surface staining.			
					(>25)	At 8.50m, with much orangish brown surface staining (up to 10mm in size). (Possible sponges).			
					(NI)	Between 8.67-9.00m, clasts with occasionally orangish brown surface staining (possible sponges) and occasional grey marl seams (up to 1mm thick).			
9.00-10.00	9.00	60 40	0.13 0.05	23	(AZCL)	Between 9.00-9.40m, assumed zone of core loss.			
9.00- 9.15	9.00				S100/ 65				
					(NI)	Weak, medium density, white with rare black specks CHALK. Discontinuities where seen are: Set 1 are 0 degrees, closely spaced (70mm), clean or infilled (0/1/2) with grey marl, stepped and rough with rare black specks and orangish brown surface staining.	9.40 (87.96)		
9.87-10.00		C			(5)	Between 9.40-9.60m, non intact, recovered as subangular coarse gravel and cobbles. Between 10.00-10.50m, assumed zone of core loss.			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
9.00	9.00	DRY	27/08/19	08:00
12.70	12.70	12.60	27/08/19	18:00
12.70	12.70	DRY	28/08/19	08:00
17.65	17.65	DRY	28/08/19	18:00
17.65	17.65	DRY	29/08/19	08:00
28.15	28.15	27.30	29/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 2.00-28.15m, Air/Mist, 100% returns; 28.15-37.15m, Air/Mist, 75% returns;

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Figure 2 of 9
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71815 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410664.4 E, 141562.4 N | Ground Level: 97.36 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.20	10.00	58 17	0.06 0.02	0		Between 9.82-9.85m, discontinuity inclined 20 degrees, clean, stepped and rough with rare black specks.			
					(AZCL)				
10.00-10.13	10.00				S100/ 50				
					(NI)	Between 10.50-10.80m, non intact, recovered as angular to subangular fine to coarse gravel. With many angular small to medium nodular flint fragments (up to 60mm in size).			1
					(10)				1
					(NI)	Between 11.00-11.08m, with a angular to subangular medium nodular flint (up to 80mm in size) with a 1mm thick cortex.			
					(0)	Between 11.14-11.20m, with subangular to subrounded medium nodular flint fragments (up to 60mm in length, full diameter).			
11.20-12.70	11.20	87 63	0.42 0.10	37	(NI)	Between 11.20-11.40m, assumed zone of core loss.			
					(AZCL)		11.40		2
11.20-11.40	11.20				C100/ 115	Very weak and weak, medium density, white with many black specks CHALK.	(85.96)		2
						Discontinuities where recorded are:			1
11.65-12.07		C			(NI)	Set 1 are 0-10 degrees, closely to widely spaced (120/480/800), clean or infilled (0/1/1) with comminuted chalk or rare grey marl, stepped or undulating and rough with many black specks and occasional orangish brown surface staining.			1
					(>25)	Set 2 are 40-50 degrees, clean, rarely infilled (0/0/1) of comminuted chalk, stepped and rough with many black specks.			
					(NI)	Set 3 are 85-90 degrees, clean or infilled (0/1/1) with comminuted chalk, undulating and rough with occasional black specks and orangish brown surface staining.			2
					(4)	Below 15.30m, Set 4 are 20-30 degrees, clean or infilled (0/1/1) with comminuted chalk or rare grey marl, stepped and rough with many black specks and occasional orangish brown surface staining. [GRADE B2]			1
12.70-13.15	12.70	51 0			(NI)	Between 11.40-11.48m and 11.58-11.65m, non intact, recovered as silty angular to subangular fine to coarse gravel.			3
12.70-13.10	12.70				C100/ 245	Between 11.70-12.10m, with much orangish brown relic sponge staining (up to 20mm in size).			
					(AZCL)	At 12.20m and 12.35m, with angular to subangular small to medium nodular flint fragments (up to 60m in size).			
13.15-14.65	13.15	97 67	0.30 0.08	40	(0)	Between 12.70-12.81m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With many angular to subangular small to medium nodular flint fragments (up to 80mm in size).			
					(NI)	Between 12.81-12.93m, non intact, recovered as silty angular to subangular fine to coarse gravel.			3
					(7)	Between 12.93-13.15m, assumed zone of core loss.			
					(NI)	Between 13.15-13.20m, with much orangish brown relic sponge staining (up to 15mm in size).			
						At 13.23m, with orangish brown sponge trace fossils (5mm in size).			3
						Between 13.40-13.55m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional angular to subangular small nodular flint fragments (up to 60mm in size).			1
					(4)	Between 13.70-13.84m, non intact, recovered as cream mottled orangish brown silt.			
14.51-14.62		C							1
						Between 14.65-14.85m, assumed zone of core loss.			
14.65-16.15	14.65	87 59	0.36 0.03	53	(AZCL)				
14.65-15.10	14.65	D			S74	Between 14.85-15.10m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse.			
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
28.15	28.15	27.40	30/08/19	08:00
31.15	31.15	30.00	30/08/19	18:00
31.15	31.15	28.30	02/09/19	08:00
38.65	38.65	32.40	02/09/19	18:00
38.65	38.65	28.40	03/09/19	08:00
44.65	44.65	28.75	03/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks: AGS 37.15-44.65m, Air/Mist, 100% return.

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Figure 3 of 9
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71815
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410664.4 E, 141562.4 N
Ground Level: 97.36 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
									2
15.50-15.83		C			(6)				4 1
					(NI)	Between 15.88-16.15m, non intact, recovered as with angular to subangular fine to coarse gravel. With a subangular small nodular flint (30mm in size). At 16.00m, with angular to subangular small to medium nodular flint fragments (up to 80mm in size). Between 16.15-16.75m, assumed zone of core loss.			1 4
16.15-17.65	16.15	60 33	0.41 0.02	33					
16.15-16.60	16.15	D			S82 (AZCL)				
					(NI)	Between 16.75-17.04m, non intact, recovered as silty angular to subangular fine to coarse gravel. At 16.79m, with angular to subangular small nodular flint fragments (up to 60mm in size). Between 16.90-16.98m, with many angular to subangular small to medium nodular flint fragments (up to 60mm in size).			3
					(2)				
17.65-19.15	17.65	87 63	0.30 0.14	67	(AZCL)	Between 17.65-17.85m, assumed zone of core loss. Between 17.65-17.92m, high density.			
17.65-17.92	17.65	D			S100/ 145	Between 17.85-18.07m, non intact, recovered as very silty angular to subangular gravel.			
					(NI)	Between 18.07-18.17m, with angular to subangular small to medium nodular flint fragments (up to 90mm in size). Between 18.25-18.60m, with much orangish brown relic sponge staining (up to 25mm in size).			4
18.34-18.60		C							
					(3)	At 18.65m, with occasional relic burrows (15mm in length) with brown staining. Between 18.76-19.15m, with many orangish brown sponge trace fossils (up to 15mm in size).			4 1
						Between 19.15-19.37m, assumed zone of core loss.			
19.15-20.65	19.15	85 71	0.59 0.23	72	(AZCL)	Between 19.37-19.57m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			
19.15-19.54	19.15				C100/ 235	At 19.53m, with occasional angular to subangular small nodular flint fragments (up to 60mm in size). At 19.60m, with a trace fossil (3mm thick) stained orangish brown.			
					(NI)	At 19.90m, with occasional relic burrow (15mm in length) with brown staning.			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71815** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410664.4** E **141562.4** N Ground Level **97.36** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(2)				
						At 20.49m, with a subangular small nodular flint fragment (30mm in size).			1
						Between 20.65-21.05m, assumed zone of core loss.			
20.65-22.15	20.65	73 49	0.45 0.18	45					
20.65-20.84	20.65				(AZCL) C100/ 105	Between 21.05-21.38m, non intact, recovered as silty angular to subangular fine to coarse gravel.			
					(NI)				
						At 21.63m, with a subangular small nodular flint fragment (30mm in size).			1
21.70-22.02		C			(1)				
						Between 22.15-22.25m, assumed zone of core loss.			
22.15-23.65	22.15	93 67		60	(AZCL)	Between 22.25-22.40m, non intact, recovered as very silty angular to subangular fine to coarse gravel.			
22.15-22.53	22.15				C100/ 226 (NI)	At 22.25m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			
					(0)	Between 22.60-22.70m, with a subangular medium nodular flint fragment (90mm in size).			
					(NI)				
					(0)	At 23.00m, with occasional relic burrow (20mm in length) with brown infill (5mm thick).			
					(NI)	Between 23.38-23.49m, non intact, recovered as angular to subangular medium to coarse gravel.			
					(0)	Between 23.65-23.84m, assumed zone of core loss.			
23.65-25.15	23.65	87 69	0.29 0.20	56	(AZCL)	Between 23.84-24.10m, non intact, recovered as very silty angular to subangular gravel.			
23.65-24.10	23.65				C64				
					(NI)				
									2
									1
					(3)				1
24.85-25.15		C							

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71815 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410664.4 E, 141562.4 N | Ground Level: 97.36 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
25.15-26.65	25.15	34 17		0		CHALK, recovered as sandy very silty angular to subangular fine to coarse GRAVEL with a low subangular cobble content. Clasts are weak, locally very weak, medium density, white occasionally stained orangish brown. Matrix is cream. With many angular to subangular small to large flint fragments. Between 25.15-26.14m, assumed zone of core loss.	25.15 (72.21)		
25.15-25.60	25.15				C78 (AZCL)				
					(NA)	Between 26.14-26.32m, recovered as slightly sandy gravelly silt. Gravel is angular to subangular fine to coarse.			
					(NI)	Between 26.40-26.45m, with angular small and medium flint fragments (up to 70mm in size). Between 26.55-26.65m, with a subangular to subrounded small nodular flint (40mm in size). Between 26.65-27.55m, assumed zone of core loss.			
26.65-28.15	26.65	40 11	0.17 0.17	11					
26.65-27.00	26.65				C100/ 200 (AZCL)				
					(NI)				
					(6)	Between 27.88-27.97m, with subangular to subrounded small and medium nodular flint fragments (up to 80mm in size). Between 27.98-28.15m, flint (full diameter). Between 28.15-28.65m, assumed zone of core loss.			
28.15-29.65	28.15	67 53	0.40 0.07	47					
28.15-28.42	28.15				(AZCL) C100/ 160				
					(13)	Very weak, medium, occasionally high density, white with occasional black specks CHALK. Discontinuities where noted are: Set 1 are 0-10 degrees, closely to medium spaced (140/260/450), infilled (1/1/9) with grey marl, comminuted chalk or rare sheet flints, undulating or stepped and rough with many black specks and occasional orangish brown surface staining.	28.65 (68.71)		1
28.88-29.23		C							1
					(1)	[GRADE B2] Between 28.77-28.83m, discontinuity inclined 50 degrees, infilled (1mm thick) with grey marl, undulating and smooth with many black specks and occasional orangish brown surface staining.			1
						Between 29.65-29.85m, assumed zone of core loss.			
29.65-31.15	29.65	87 68	0.45 0.15	67	(AZCL)				
29.65-29.96	29.65				C100/ 155	Between 29.85-30.00m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse.			
					(NI)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71815** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410664.4** E **141562.4** N Ground Level **97.36** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
					(2)				1
						At 30.76m, with patches of orangish brown surface staining (up to 10mm in size). (Possible sponges).			
						At 30.98m, with a horizontal grey wispy marl seam (2mm thick).			1
						Between 31.15-31.60m, assumed zone of core loss.			
31.15-32.65	31.15	70 52	0.25 0.10	53					
31.15-31.38	31.15				(AZCL) C100/ 150				
					(NI)	Between 31.60-31.70m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse.			
					(0)	At 31.70m, with angular to subangular small nodular flint fragments (up to 40mm in size).			
32.10-32.22		C							
					(NI)	Between 32.22-32.33m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			
					(3)				
						Between 32.65-32.95m, assumed zone of core loss.			1
32.65-34.15	32.65	80 60	0.21 0.14	47					
32.65-32.85	32.65 (32.02)				(AZCL) C100/ 100				
					(NI)	Between 32.95-33.04m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse.			
						At 33.25m and 33.45m, with a horizontal grey marl seam (1mm thick).			1
					(4)				
						Between 33.69-33.70m, discontinuity inclined 20 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with occasional black specks.			1
					(NI)	At 33.75m, with a grey wispy marl seam (2mm thick).			
					(0)	Between 33.86-34.03m, with angular to subangular small to medium nodular flint fragments (up to 130mm in length).			
						Between 34.15-34.35m, assumed zone of core loss.			
34.15-35.65	34.15	87 59	0.24 0.12	52	(AZCL)				
34.15-34.45	34.15 (32.60)				C100/ 200	Between 34.35-34.50m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse.			
					(NI)	At 34.54m and 34.60m, with grey wispy marl seams (up to 4mm thick).			
					(0)	Between 34.66-34.73m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			
					(NI)				
						Between 34.88-34.93m, discontinuity inclined 40 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with occasional black specks and orangish brown surface staining.			

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
Checked by **CPL**
Figure **7 of 9**
27/03/2020

geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71815 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410664.4 E, 141562.4 N | Ground Level: 97.36 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
35.12-35.27		C			(4)	Between 34.95-35.48m, with much orangish brown surface staining (up to 15mm in size). (Possible sponges).			1
					(NI)	Between 35.40-35.53m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size).			1
					(0)	Between 35.65-35.95m, assumed zone of core loss.			
35.65-37.15	35.65	80	0.40	60					
35.65-35.97	35.65 (34.50)	66	0.11		(AZCL) C100/ 195 (NI)	Between 35.95-36.04m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse.			
					(1)	At 36.40m, with angular to subangular small nodular flint fragments (up to 20mm in size). At 36.43m, with a grey marl seam (1mm thick).			1
						At 36.90m, with a horizontal grey wispy marl seam (5mm thick).			
						Between 37.15-37.45m, assumed zone of core loss.			
37.15-38.65	37.15	80	0.50	60					
37.15-37.33	37.15 (29.00)	60	0.12		(AZCL) C100/ 100 (NI)	Between 37.45-37.59m, non intact, recovered as silty angular to subangular fine to coarse gravel. At 37.55m, with angular to subangular small nodular flint fragments (up to 20mm in size). Between 37.65-37.78m, with occasional relic burrow (50mm in length) with brown staining.			
37.59-37.89		C							
					(1)	At 37.95m, with angular to subangular small to medium nodular flint fragments (up to 50mm in size).			1
						At 38.39m, with a subhorizontal sheet-like bivalve fossils (up to 3mm in size). (Platyceramus) Between 38.40-38.50m, with occasional orangish brown surface staining (up to 10mm in size). (Possibly sponges). Between 38.65-38.80m, assumed zone of core loss.			
38.65-40.15	38.65	90	0.40	67	(AZCL)	Between 38.80-38.93m, non intact, recovered as silty angular to subangular fine to coarse gravel.			
38.65-38.87	38.65 (32.40)	67	0.15		C100/ 115 (NI)	Between 38.93-38.98m, with angular to subangular small to medium nodular flint fragments (up to 55mm in size). At 39.00m, with a grey marl seam (1mm thick).			
						Between 39.25-39.45m, with occasional orangish brown surface staining (up to 15mm in size). (Possible sponges).			
					(1)	At 39.66m and 39.72m, with grey wispy marl seams (up to 3mm thick). At 39.75m, with angular to subangular small nodular flint fragments (up to 40mm in size). Between 39.90-40.10m, with occasional orangish brown surface staining (up to 20mm in size). (Possible sponges).			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by SI
Checked by CPL
Figure 8 of 9
27/03/2020

geotechnics

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71815 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410664.4 E, 141562.4 N | Ground Level: 97.36 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 40.15-40.58m, assumed zone of core loss.			
40.15-41.65	40.15	71 53	0.56 0.15	40					
40.15-40.36	40.15 (29.10)				(AZCL) C100/ 110				
					(NI)	**Between 40.58-40.69m, non intact, recovered as silty angular to subangular fine to coarse gravel. At 40.68m, with angular to subangular small nodular flint fragments (up to 40mm in size). At 40.79m and 4.087m, with angular to subangular small nodular flint fragments (up to 30mm in size). At 40.90m, with a horizontal grey wispy marl seam (up to 3mm thick). Between 40.93-40.98m, with occasional grey wispy marl seams (up to 40mm thick).**			
41.24-41.49		C			(1)	**At 41.05m, 41.10m and 41.60m, with a sheet-like bivalve fossils (up to 3mm thick). (Platyceramus)** **At 41.42m, with occasional orangish brown surface staining (up to 10mm in size). (Possible sponges).**			1
						Between 41.65-42.15m, assumed zone of core loss.			
41.65-43.15	41.65	67 56		56					
41.65-41.88	41.65 (31.00)				(AZCL) C100/ 100				
					(NI)	**Between 42.15-42.25m, non intact, recovered as gravelly silt. Gravel is angular to subangular fine to coarse. At 42.30m, 42.60m and 42.64m, with a sheet-like bivalve fossil (up to 3mm thick). (Platyceramus)**			
42.73-43.15		C			(0)	**At 42.78m, with angular to subangular small nodular flint fragments (up to 30mm in size). At 42.85m, with a sheet-like bivalve fossils (2mm thick). (Platyceramus)** **At 43.08m, with orangish brown surface staining (up to 10mm in size). (Possible sponges).**			
43.15-44.65	43.15	87 49		47	(AZCL)	**Between 43.15-43.35m, assumed zone of core loss.** **Between 43.35-43.44m, non intact, recovered as angular to subangular fine to coarse gravel.**			
43.15-43.38	43.15 (33.55)				C100/ 76				
					(NI)	**At 43.50m, with orangish brown sponge trace fossils (up to 3mm in size).**			
43.63-43.79		C			(0)	**Between 43.79-43.90m, with angular to subangular small to medium nodular flint fragments (up to 80mm in size).**			
					(NI)	**Between 43.90-44.04m, non intact, recovered as angular to subangular fine to coarse gravel and cobbles. Between 44.04-44.10m, with occasional grey wispy marl seams (up to 3mm thick). At 44.24m, with a sheet-like bivalve fossil (3mm thick). (Platyceramus)**			
					(0)	**Between 44.30-44.42m, with angular to subangular medium to coarse gravel.**			
					(NI)	**Between 44.31-44.37m, with a medium flint fragment (60mm in length, full diameter).**			
					(0)	**At 44.50m, with occasional relic burrows (80mm in length) with brown staining.**			
44.65-44.76	44.65 (28.75)				C100/ 65		44.65 (52.71)		
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
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Figure 9 of 9
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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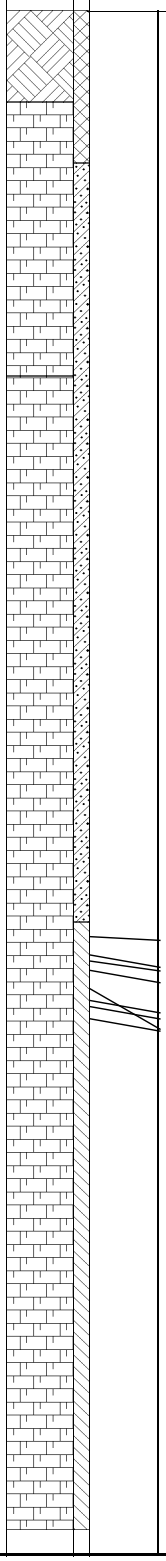
BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71816
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410736.9 E 141542.3 N	Ground Level	95.74 m OD

Scale 1:25

Drilling: Core Run/Depth (Core Dia/Time)	Drilling: Depth Cased & (to Water)	Properties/Sampling: Type TCR/SCR%	Properties/Sampling: Length Max/Min	Properties/Sampling: RQD %	Properties/Sampling: (FI)	Strata: Description	Depth (Level)
						TOPSOIL: Soft brown slightly sandy slightly gravelly silt with a low subangular cobble content of flint and many roots and rootlets. Gravel is angular to subangular fine to coarse chalk and flints.	G.L. (95.74)
0.20		B					
0.20		D					
0.20		ES					
0.20			PID=<0.1			**Below 0.50m, gravelly.**	0.30 (95.44)
0.50- 0.70		B					
0.50- 0.70		D					
0.50- 0.70		ES				**Structureless CHALK, composed of sandy silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, low and medium density and white. Matrix is light yellowish brown. With many subangular to subrounded small and medium nodular flint fragments (up to 75mm in size). [GRADE Dc]**	
0.50- 0.70			PID=<0.1				
1.00- 1.20		B					
1.00- 1.20		D					
1.20- 2.50	1.20	92 0				**CHALK, recovered as a silty angular to subangular fine to coarse GRAVEL with a medium subangular cobble content. Clasts are very weak, low and medium density and white with rare orangish brown mottling. Matrix is cream. With occasional angular to subangular small flints.**	1.20 (94.54)
1.20		ES					
1.20			PID=<0.1				
1.60- 1.70		C				**At 1.35m, with angular to subangular small nodular flint fragments (up to 20mm in size).**	
					(NI)		
						At 2.10m, with orangish brown mottling on clasts (<15mm in size). (Possible sponge beds)	
						At 2.40m, with angular to subangular small nodular flints (up to 20mm in size) with a 1mm thick cortex.	
					(AZCL)	**Between 2.40-2.50m, assumed zone of core loss.**	
2.50- 4.00	2.50	77 24	0.05 0.02	0			
					(NI)	**At 2.71m, with orangish brown relic sponge bed traces (up to 15mm in size).**	
						Between 3.05-3.40m, solid core. Discontinuities inclined 0-10 degrees, very closely to closely spaced (20/45/100), clean or infilled (0/1/2) with comminuted chalk, undulating or planar and rough with occasional black specks and orangish brown surface staining.	
					(23)	**At 3.22m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks.**	
3.40- 3.50		C					
					(NI)	**At 3.45m, with angular to subangular small nodular and finger flints (up to 50mm in size).**	
						Between 3.65-4.00m, assumed zone of core loss.	
					(AZCL)		
4.00- 5.50	4.00	32 11		0			
					(NI)	**At 4.25m, with a orangish brown relic sponge trace (10mm in size).**	
						Between 4.35-4.48m, with a large nodular flint (full core diameter) with a 5mm thick cortex.	
						Between 4.48-5.50m, assumed zone of core loss.	
					(AZCL)		

Legend / Discontinuity: 

Drilling

Depth	Hole Dia	Technique	Crew
0.30	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AW/PB
45.20	0.12	Geobor S	AW/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			20/08/19	08:00
1.20	NIL	DRY	20/08/19	18:00
1.20	NIL	DRY	22/08/19	08:00
38.50	38.50	34.70	21/08/19	18:00
38.50	38.50	25.40	23/08/19	08:00
45.20	45.20	37.30	23/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by AB
Checked by CPL
Figure 1 of 10
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71816
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410736.9 E, 141542.3 N
Ground Level: 95.74 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)				
5.50- 7.00	5.50	90 36	0.13 0.02	9		Between 5.50-5.70m, with occasional angular to subangular small nodular and finger flints (up to 30mm in size) with a 1mm thick cortex.	5.70 (90.04)		2
6.15- 6.23		C			(11)	Weak, locally extremely weak, low and medium, density, white with rare black specks and orangish brown mottling CHALK. Discontinuities are: Set 1 are 0-10 degrees, very closely to medium spaced (20/90/330), clean or infilled (0/0/2) with comminuted chalk, planar, locally undulating and rough with many black specks and occasional orangish brown surface staining. Set 2 are 80-85 degrees, clean (0/0/0), undulating locally stepped and rough with many black specks and rare orangish brown surface staining. Below 9.42m, Set 3 are 40-50 degrees, medium to widely spaced (500/610/720), clean or infilled (0/1/1) with comminuted chalk, undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE A3]			1 1 1 1 2 1 1 1
					(NI)				
					(AZCL)	Between 6.50-6.85m, non intact, recovered as silty angular to subangular fine to coarse gravel and cobbles. Clasts with rare orangish brown mottling. Between 6.85-7.00m, assumed zone of core loss.			
7.00- 8.50	7.00	87 47	0.13 0.05	15	(7)	At 7.28m, with a angular to subangular medium nodular flint (80mm in size) with a 3mm thick cortex.			1 1 3
					(NI)	Between 7.44-7.56m, non intact, recovered as silty angular to subangular fine to coarse gravel and cobbles.			
					(20)	At 7.76m and 7.81m, discontinuity inclined 30 degrees, clean, planar and rough with occasional black specks.			1 1 1
					(NI)	Between 7.81-8.09m, non intact, recovered as a silty angular to subangular fine to coarse gravel and cobble. With occasional small tabular flints (up to 50mm in size).			
					(5)	Between 8.30-8.50m, assumed zone of core loss.			2
					(AZCL)				
8.50-10.00	8.50	92 64	0.16 0.02	30	(NI)	Between 8.50-8.64m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content.			1 3
8.88- 9.04		C							1 1 1
					(12)	At 9.11m, with a small subrounded nodular flint (50mm in size) with a 2mm thick cortex.			1 1 1 1
						At 9.42m, with s orangish brown relic sponge bed trace (10mm in size).			3
					(NI)	Between 9.64-9.88m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content.			1
					(AZCL)	Between 9.88-10.00m, assumed zone of core loss.			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-45.20m, Air/Mist, 100% return.

Logged by: AB
Checked by: CPL
Figure: 2 of 10
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71816** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410736.9** E **141542.3** N Ground Level **95.74** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
10.00-11.50	**10.00**	**97** **61**	**0.10** **0.02**	**14**	**(NI)**	**Between 10.00-10.35m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content.** **At 10.13m, with a subhorizontal sheet flint (10mm thick), recovered as angular to subangular small fragments with a 2mm thick cortex.**			3
					(13)				1
					(NI)	**Between 10.50-10.83m, non intact, recovered as silty angular to subangular fine to coarse gravel.** **Between 10.60-10.70m, with many angular to subangular small and medium nodular flint fragments (up to 60mm in size).**			1 3
					(10)	**Between 11.02-11.08m, discontinuity inclined 30 degrees, clean, undulating locally stepped and rough with rare black specks.**			1 1 1
11.50-13.00	**11.50**	**92** **70**	**0.22** **0.02**	**33**	**(7)**	**Very weak, locally extremely weak, low and medium density, white with many black specks CHALK.** **Discontinuities are:** **Set 1 are 0-10 degrees, closely to medium spaced (60/180/390), clean or infilled (0/0/1) with comminuted chalk or marl, undulating and rough with many black specks and rare orangish brown staining.** **Set 2 are 85-90 degrees, clean (0/0/0), stepped, locally undulating and rough with many black specks and rare orangish brown mottling.** **Set 3 are 40-50 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks and rare orangish brown staining.**	**11.50** **(84.24)**		1 2 1 1
12.34-12.52		**C**				**[GRADE A3]** **At 11.53m, with a subhorizontal sheet-like ribbed bivalve (5mm thick). (Platyceramus).**			1 1 3
					(NI)	**At 12.20m, with many subangular to subrounded small and medium nodular flint fragments (up to 70mm in size).** **At 12.37m, with orangish brown relic sponge bed traces (up to 15mm in size).**			
					(AZCL)	**Between 12.63-12.88m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content.** **Between 12.88-13.00m, assumed zone of core loss.**			
13.00-14.50	**13.00**	**97** **63**	**0.20** **0.04**	**23**	**(7)**	**At 13.12m, with orangish brown relic sponge bed traces (up to 10mm in size).**			1 1
					(NI)	**Between 13.41-13.56m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content. With angular to subangular small nodular flints (up to 40mm in size) with a 1mm thick cortex.**			3 2 1
					(14)	**Between 13.85-14.50m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content.**			1 1
					(NI)	**At 14.10m, with a marl seam (5mm thick) with interwoven wispy marl partings (<1mm thick).** **At 14.22m, with orangish brown relic sponge traces (up to 10mm in size). With angular to subangular small nodular flint fragments (up to 30mm in size).** **At 14.40m, with a marl seam (5mm thick) with wispy marl partings (<1mm thick).**			
14.50-16.00	**14.50**	**77** **56**	**0.47** **0.06**	**39**		**At 14.60m, with orangish brown mottling (10mm in size).**			3 1 2
14.85-15.10		**C**			**(7)**				1 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
Checked by **CPL**
Figure **3 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71816
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410736.9 E 141542.3 N	Ground Level	95.74 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 15.32-15.65m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular to subrounded cobble content. With angular to subangular small nodular flint fragments (up to 60mm in size) with a 1mm thick cortex.			
					(AZCL)	At 15.32m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining. Between 15.65-16.00m, assumed zone of core loss.			
16.00-17.50	16.00	54 54	0.28 0.06	26	(4)	At 16.05m, with a subangular medium nodular flint (70mm in size).			3 1
						At 16.30m, with orangish brown relic sponge bed traces (up to 10mm in size).			
						At 16.65m and 16.71m, with marl seams (up to 10mm thick) with interwoven wispy marl partings (<1mm thick).			1
					(AZCL)	Between 16.81-17.50m, assumed zone of core loss.			
17.50-19.00	17.50	83 69	0.27 0.09	45	(NI)	Between 17.50-17.63m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 17.60-17.63m, with angular to subangular small nodular flint fragment (up to 20mm in size).			
17.97-18.16		C			(4)				1 1 2 1 1
					(AZCL)	Between 18.75-19.00m, assumed zone of core loss.			
19.00-20.50	19.00	82 68	0.29 0.04	39	(4)	Between 19.00-19.14m, with angular to subangular small nodular flint fragments (up to 25mm in size).			3 1 1 1
						Between 19.90-20.23m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular to subrounded cobble content.			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by AB
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Figure 4 of 10
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71816
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410736.9 E, 141542.3 N
Ground Level: 95.74 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	At 20.07m, with a subangular small nodular flint (40mm in size). Between 20.23-20.50m, assumed zone of core loss.			
					(AZCL)				
20.50-22.00 20.50-20.72	20.50	83 73 C	0.31 0.05	53	(5)	At 21.11m, with a angular small nodular flint (15mm in size). Between 21.40-21.53m, with orangish brown relic sponge traces (up to 10mm in size). Between 21.53-21.75m, non intact, recovered as silty angular to subangular fine to coarse gravel with a medium subangular cobble content. Between 21.60-21.75m, with angular to subangular small and medium nodular flint fragments (upto 75mm in size).			1 3 1 3 1
					(NI)				
					(AZCL)	Between 21.75-22.00m, assumed zone of core loss.			
22.00-23.50	22.00	93 55	0.22 0.07	29	(4)	Between 22.34-22.42m, discontinuity inclined 30 degrees, clean, undulating and rough with many black specks. At 22.49m, with a marl seam (5mm thick) with interwoven marl partings (<1mm thick). At 22.50-22.60m, with a large nodular flint (full core diameter). Between 22.60-22.67m and 23.28-23.40m, non intact, recovered as a silty angular to subangular fine to coarse gravel. At 22.82m, with angular to subangular small nodular flint fragments (up to 20mm in size).			1
					(NI)				
					(0)				
					(NI)				
					(0)	Between 23.40-23.50m, assumed zone of core loss.			
					(AZCL)		23.50 (72.24)		
23.50-25.00 24.34-24.67	23.50	81 81 C	0.84 0.04	78	(2)	Very weak, locally medium strong, medium, locally high density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, very closely to widely spaced (50/310/840), clean, rarely infilled (0/0/1) with marl, undulating, locally planar and rough with many black specks and rare orangish brown surface staining. Set 2 are 40-50 degrees, closely to medium spaced (100/360/620),clean (0/0/0), undulating, locally planar and rough with many black specks. [GRADE A2] Between 23.66-23.72m, with angular to subangular small nodular flint fragments (up to 25mm in size). At 23.92m, with a subhorizontal shell fragment (3mm thick - possibly platyceramus).			1
					(AZCL)	At 24.69m, with a small subangular nodular flint (40mm in size) with a 2mm thick cortex. Between 24.71-25.00m, assumed zone of core loss.			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71816** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410736.9** E **141542.3** N Ground Level **95.74** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
25.00-26.50	**25.00**	**100** **71**	**0.58** **0.06**	**60**					
					(2)	**At 25.58m, with rare orangish brown relic sponge traces (up to 10mm in size).**			1 2
					(NI)	**Between 25.96-26.36m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content.** **At 26.11m, with a subrounded large nodular flint (100mm in size) with a 2mm thick cortex.**			1
26.50-28.00	**26.50**	**100** **100**	**0.80** **0.08**	**90**		**Between 26.50-26.79m, with much orangish brown relic sponge bed traces (up to 15mm in size).**			
						At 27.02m, with subangular small nodular flint fragments (up to 20mm in size).			1
					(2)	**At 27.21m, 27.62m and 28.00m, with orangish brown relic sponge bed traces (up to 15mm in size).**			
27.50-27.84		**C**							1 1
28.00-29.50	**28.00**	**100** **77**	**0.49** **0.07**	**57**					
					(NI)	**Between 28.14-28.26m, non intact, recovered as a silty angular to subangular fine to coarse gravel.**			2 1
					(4)				1 2
					(NI)	**Between 29.23-29.34m, non intact, recovered as a silty angular to subangular fine to coarse gravel. Clasts with occasional orangish brown mottling.**			
					(7)	**Between 29.45-29.50m, with a large nodular flint (full core diameter) with a 2mm thick cortex.**			1
29.50-31.00	**29.50**	**93** **89**	**0.37** **0.18**	**76**					
						Between 29.81-30.71m, with much orangish brown relic sponge traces (up to 25mm in size).			
29.87-30.21		**C**							1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
Checked by **CPL**
Figure **6 of 10**
27/03/2020

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

geotechnics

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71816** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410736.9** E **141542.3** N Ground Level **95.74** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(3)				1
									1
									1
						Between 30.90-31.00m, assumed zone of core loss.			
					(AZCL)				
31.00-32.50	31.00	91 69	0.26 0.05	55		Between 31.19-31.26m, non intact, recovered as a silty angular to subangular fine to coarse gravel. At 31.34m and 31.37m, with angular to subangular small nodular flint fragments (up to 50mm in size) with a 2mm thick cortex.			1
					(5)				1
									1
									1
						At 32.24m, with orangish brown relic sponge traces (up to 20mm in size). Between 32.37-32.50m, assumed zone of core loss.			1
					(AZCL)				
32.50-34.00	32.50	93 85	0.54 0.12	63		Between 32.51-32.53m, with angular to subangular small nodular flint fragments (up to 40mm in size).			
						At 32.81m, with a marl seam (5mm thick) with interwoven marl partings (<1mm thick).			1
									1
						At 33.08m, with orangish brown relic sponge traces (up to 15mm in size).			
					(4)				
33.52-33.72		C				Between 33.52-33.72m, high density. At 33.54m and 33.66m, with marl seams (up to 3mm thick) and interwoven marl partings (<1mm thick).			1
						At 33.81m, with angular to subangular small nodular flint fragments (up to 20mm in size). Between 33.90-34.00m, assumed zone of core loss.			1
					(AZCL)	At 34.00m, with angular to subangular small nodular flint fragments (up to 50mm in size).			
34.00-35.50	34.00	43 43	0.64	41					
					(2)	At 34.33m, with a marl seam (5mm thick) and many interwoven marl partings (<1mm thick). At 34.44m, with a subrounded small nodular flint (30mm in size) with a 1mm thick cortex. At 34.50m, with orangish brown relic sponge traces (up to 10mm in size). Between 34.64-35.50m, assumed zone of core loss.			1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
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Figure **7 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71816
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410736.9 E 141542.3 N	Ground Level	95.74 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(AZCL)				
35.50-37.00 35.66-36.12	35.50	100 61 C	0.62 0.02	53	(2)	At 35.62m, with a subangular medium nodular flint (80mm in size) with a 1mm thick cortex. At 35.70m, with orangish brown relic sponge traces (up to 20mm in size).			1
					(NI)	Between 36.31-36.50m and 36.66-37.00m, non intact, recovered as a silty angular to subangular fine coarse gravel with a low subangular cobble content.			1
					(13)				2
					(NI)	Between 36.66-36.73m, with angular to subangular small and medium nodular flint fragments (up to 60mm in size).			2
37.00-38.50	37.00	77 65	0.25 0.13	59	(4)	At 37.00m and 37.13m, with a wispy light grey marl seam (up to 10mm thick) and many wispy marl partings (<1mm). At 37.21m, with angular to subangular fine to coarse small nodular flints (up to 40mm in size) with a 1mm thick cortex.			1
									1
									1
					(NI)	At 37.77m, with orangish brown relic sponge traces (up to 10mm in size). Between 37.77-37.98, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular to subrounded cobble content.			1
					(6)	With angular to subangular small nodular flints (up to 50mm in size) with a 1mm thick cortex.			
					(AZCL)	Between 38.15-38.50m, assumed zone of core loss.			
38.50-40.00 38.65-38.85	38.50	47 43 C	0.33 0.06	27	(6)	At 38.87m, with a subhorizontal sheet flint (10mm thick) with <1mm thick cortex.			1
						Between 39.10-39.20m, discontinuity inclined 85 degrees, clean, undulating and rough with many black specks.			2
						Between 39.20-40.00m, assumed zone of core loss.			1
					(AZCL)				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71816 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410736.9 E, 141542.3 N | Ground Level: 95.74 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
40.00-41.50	40.00	100 65	0.26 0.08	45	(4)	At 40.09m, with a wispy light grey marl seam (5mm thick) with occasional interwoven wispy marl partings (<1mm thick).			1 1
					(NI)	Between 40.48-41.11m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a low subangular cobble content. With angular to subangular small and medium flint fragments (up to 70mm) with 1mm thick cortex.			
					(5)	At 41.11m, with orangish brown relic sponge traces (up to 10mm in size).			1 1
41.50-43.00 41.50-41.73	41.50	93 79 C	0.33 0.15	70	(3)	At 41.50m, with angular to subangular medium nodular flint fragments (up to 100mm in size) with a 3mm thick cortex. At 41.73m, with orangish brown relic sponge traces (up to 15mm in size).			1 1 1
					(NI)	Between 42.39-42.54m, non intact, recovered as a silty angular to subangular fine to coarse gravel with a medium subangular to subrounded cobble content. With angular to subangular small and medium nodular flint fragments (up to 60mm in size) with a 1mm thick cortex.			1 1
					(6)	Between 42.90-43.00m, assumed zone of core loss.			
					(AZCL)				
43.00-44.50	43.00	100 94	0.33 0.07	89	(0)	Between 43.20-43.28m, non intact, recovered as silty angular to subangular fine to coarse gravel. With many angular to subangular small nodular flint fragments (up to 50mm in size) with a 1mm thick cortex.			
					(NI)	At 43.72m, with a subrounded small nodular flint (30mm in size) with a 1mm thick cortex. At 43.80m, with a wispy light grey marl seam (3mm thick) and interwoven grey marl partings (<1mm thick). At 43.85m, with orangish brown relic sponge traces (up to 10mm in size).			1 1 1
44.16-44.46		C			(3)	Between 44.29-44.39m, with subhorizontal sheet-like shell fragments (up to 30mm in size). (Platyceramus).			1
44.50-45.20	44.50	100 69	0.15 0.08	40	(7)				1 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71816**
Project No **PC197626**
Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410736.9** E **141542.3** N
Ground Level **95.74** m OD
Scale 1:25

Drilling		Properties/Sampling				Strata			
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Below 44.92m, non intact, recovered as silty angular to subangular fine to coarse gravel with a medium subangular cobble content. With angular to subangular small and medium nodular flints (up to 80mm in size) with a 1mm thick cortex. At 45.20m, clasts with orangish brown relic sponge bed traces (up to 10mm in size).	45.20 (50.54)		
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
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Figure **10 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71818 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410819.1 E, 141600.7 N | Ground Level: 96.50 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (96.50)		
						TOPSOIL: Soft brown slightly sandy slightly gravelly silt. Gravel is subangular to subrounded fine to coarse chalk and flint.			
0.20		B							
0.20		D							
0.20		ES							
0.20			PID=<0.1				0.35 (96.15)		
0.50		B				**Structureless CHALK, composed of slightly sandy silty subangular to subrounded fine to coarse GRAVEL. Clasts are very weak, low and medium density and white. Matrix is white mottled brown. With occasional angular to subangular fine to coarse flint gravel. [GRADE Dc] Below 0.80m, matrix is white.**			
0.50		D							
0.50		ES							
0.50			PID=<0.1						
1.00		B							
1.00		D							
1.00		ES							
1.00			PID=<0.1				1.20 (95.30)		
1.20- 2.50	1.20	77	0.05	0		**CHALK, recovered as a very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density and white. Matrix is white, locally cream. With occasional angular to subangular small nodular flint fragments.**			
		12	0.04						
1.50- 1.60		C			(NI)	**At 1.64m, with a subangular medium nodular flint fragment with a 6mm thick cortex.**			
							1.90 (94.60)		
					(10)	**Very weak, locally extremely weak, low to medium density white CHALK. Discontinuities at 2.04m and 2.08m are 35 degrees, infilled (1/1/1) with comminuted chalk, planar and rough with occasional black speck and orangish brown surface staining. Between 1.94-1.99m, discontinuity inclined 35 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks.**	2.20 (94.30)		
					(AZCL)				
2.50- 4.00	2.50	75		0		**CHALK, recovered as a very silty angular to subangular fine to coarse GRAVEL and COBBLES. Clasts are very weak, medium and high density and white with occasional black specks. Matrix is white. Between 2.20-2.50m and 3.62-4.00, assumed zones of core loss.**			
		11							
					(NI)				
3.10- 3.20		C							
					(AZCL)				
4.00- 5.50	4.00	62		0		**Between 4.00-4.05m, with angular to subangular small nodular flint fragments with a 3mm thick cortex.**			
		6							
					(NI)	**Between 4.45-4.54m, solid core. No natural discontinuities observed.**			
4.45- 4.54		C							
						Between 4.93-5.50m, assumed zone of core loss.			

Drilling

Depth	Hole Dia	Technique	Crew
0.35	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	AW/PB
46.00	0.12	Geobor S	AW/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			19/08/19	08:00
1.20	NIL	DRY	19/08/19	18:00
1.20	NIL	DRY	20/08/19	08:00
26.50	26.50	DRY	20/08/19	18:00
26.50	26.50	DRY	21/08/19	08:00
46.00	46.00	35.00	21/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.35m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Figure 1 of 10
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71818
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410819.1 E 141600.7 N	Ground Level	96.50 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(AZCL)				
5.50- 7.00	5.50	81 0				At 5.87m and 6.58m, with angular to subangular small nodular flint fragments (up to 25mm in size).			
					(NI)				
						Between 6.72-7.00m, assumed zone of core loss.			
					(AZCL)				
7.00- 8.50	7.00	95 17	0.10 0.04	7		CHALK, recovered as a silty, locally very silty, angular to subangular fine to coarse GRAVEL and COBBLES. Clasts are very weak, low to medium density and white with many black specks. Matrix is white, locally cream. At 7.12m, with angular to subangular small nodular flint fragments with a <5mm thick cortex.	7.00 (89.50)		
7.55- 7.62		C			(NI)	Between 7.55-7.71m, solid core. Discontinuities are: At 7.55m, inclined 2 degrees, infilled (3mm thick) with comminuted chalk, planar and rough with rare black specks and at 7.62-7.66m, inclined 35 degrees, infilled (1mm thick) with comminuted chalk, planar and rough with occasional black specks and orangish brown surface staining. At 7.62m, with occasional orangish brown staining of clasts (up to 5mm in size). (possible sponge traces).			
						At 8.40m, with angular to subangular small nodular flint fragments with a <2mm thick cortex.	8.50 (88.00)		
8.50-10.00	8.50	82 34	0.09 0.02	0		Very weak, locally extremely weak, low to medium density white CHALK. Discontinuities are: Set 1 are 0-10 degrees, very closely to closely spaced (20/50/90), infilled (1/1/3) with comminuted chalk, planar locally undulating and rough with rare black specks and occasional orangish brown surface staining. Set 2 are 20-37 degrees, closely spaced (70/95/120), clean or infilled (0/1/1) with comminuted chalk, undulating or stepped and rough with rare black specks and rare orangish brown surface staining. [Grade B3/4] Between 8.83-8.94m, discontinuity inclined 80 degrees, clean, undulating and rough with many black specks. Between 8.92-8.99m, discontinuity inclined 50 degrees, clean, undulating and rough with occasional black specks. Between 8.99-9.25m, non intact, recovered as a silty, locally very silty, angular to subangular fine to coarse gravel and cobbles.			1 1 1 2 1 2 1 2 2 1
8.70- 8.77		C			(16)				
					(NI)				
					(25)				
					(NI)				
					(AZCL)		10.00 (86.50)		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-46.00m, Air/Mist, 100% return.

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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71818** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410819.1** E **141600.7** N Ground Level **96.50** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							10.00 (86.50)		
10.00-11.50	10.00	87	0.13	0	(14)	At 9.08m, with angular to subangular small nodular flint fragments (up to 40mm in size) with a 3mm thick cortex. At 9.25m, with angular to subangular small nodular flint fragments (up to 40mm in size). Between 9.41-9.73m, non intact, recovered as a silty, locally very silty, angular to subangular fine to coarse gravel with a low subangular cobble content. At 9.55m, with angular to subangular small nodular flint fragments (up to 30mm in size) with a 2mm thick cortex. At 9.65m, with orangish brown relic sponge trace (10mm in size). At 9.73m, with angular to subangular small nodular flint fragments (up to 50mm in size). Between 9.73-10.00m, assumed zone of core loss.			
10.10-10.17		29 C	0.02		(NI)				
					(>25)				
					(NI)				
					(20)				
					(NI)	Weak, locally very weak, low to medium density, white with many black specks CHALK. Discontinuities are: Set 1 are 0-15 degrees, very closely to medium spaced (20/140/540), clean or infilled (0/1/2) with comminuted chalk or rare marl, undulating, locally planar and rough with many black specks and occasional orangish brown surface staining. Set 2 are 75-90 degrees, clean, rarely infilled (0/0/1) with comminuted chalk, undulating, locally planar and rough, with many black specks and rare orangish brown surface staining. Set 3: 30-40 degrees angle discontinuity, very closely to widely spaced (40/330/730), clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks and rare orangish brown surface staining. At 10.41m, with a marl seam (2mm thick). [GRADE B2/3] Between 10.29-10.41m, non intact, recovered as a silty, locally very silty, angular to subangular fine to coarse gravel and cobbles. Between 10.72-11.08m, non intact recovered as silty, locally very silty, angular to subangular fine to coarse gravel and cobbles. At 10.84m, with rare ribbed shell fragments (up to 5mm in size). At 10.91m, with angular to subangular small nodular flint fragments (up to 40mm in size). At 11.05m, with a subangular medium nodular flint fragment (70mm in size) with a 3mm thick cortex. Between 11.13-11.30m, non intact, recovered as silty, locally very silty, angular to subangular fine to coarse gravel and cobbles. At 11.25m, with angular to subangular small nodular flint fragments (up to 35mm in size) with a 1mm thick cortex. Between 11.30-11.50m, assumed zone of core loss. Between 11.50-11.82m, non intact, recovered as silty, locally very silty, angular to subangular fine to coarse gravel and cobbles. At 11.82m and 11.97m, with angular to subangular small nodular flint fragments (up to 50mm in size) with a 1mm thick cortex. At 12.06-12.09m and 12.10-12.17m, discontinuities inclined 60 degrees, infilled (1mm thick) with comminuted chalk, undulating or planar and rough with many black specks. Between 12.31-12.35m, with orangish brown relic sponge trace (<10mm in size). At 12.47m, with a wispy grey marl seam (3mm thick). Between 12.65-13.00m, assumed zone of core loss. Between 13.00-13.16m, with many orangish brown relic sponge traces (up to 20mm in size). At 13.30m, with a ribbed shell fragment (5mm in size). At 13.43m, with rare orangish brown relic sponge traces (up to 10mm in size). Between 13.86-14.21m, with occasional orangish brown relic sponge traces (up to 20mm in size). At 14.41m, with orangish brown relic sponge traces (30mm in size).			
11.50-13.00	11.50	83	0.15	29	(NI)				
		45	0.03						
					(16)				
12.50-12.61		C							
					(AZCL)				
13.00-14.50	13.00	100	0.20	52					
		79	0.02						
					(8)				
13.66-13.86		C							
					(NI)				
					(12)				
14.50-16.00	14.50	97	0.13	28					
		75	0.05						
					(9)				

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71818** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410819.1** E **141600.7** N Ground Level **96.50** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
15.69-15.83		C			(NI)	At 13.97m, with angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex. Between 13.97-14.08m, non intact, recovered as a silty angular to subangular fine to coarse gravel. Clasts have occasional orangish brown mottling. At 14.79m, with orangish brown relic sponge bed traces (up to 15mm in size). Between 15.16-15.53m, non intact, recovered as a silty locally very silty angular to subangular fine to coarse gravel and cobbles. At 15.29m, with angular to subangular small nodular flint fragments (up to 50mm in size) with a 3mm thick cortex. At 15.45m, with angular to subangular small nodular flint fragments (up to 35mm in size) with a 2mm thick cortex.			
16.00-17.50	16.00	77 62	0.31 0.06	34	(11)	At 15.75m, with a grey marl seam thin (3mm thick) with interwoven marl partings (<1mm thick).			
					(NI)	Between 16.73-16.85m, non intact, recovered as a silty, locally very silty, angular to subangular fine to coarse gravel with a low subangular cobble content.			
					(10)	At 16.78m, with angular to subangular small nodular flint fragments (up to 35mm in size) with a 1mm thick cortex. Between 16.93-17.15m, with rare orangish brown relic sponge traces (up to 10mm in size).			
					(AZCL)	Between 17.15-17.50m, assumed zone of core loss.			
17.50-19.00 17.72-17.90	17.50	100 86 C	0.27 0.05	57	(8)	At 18.39m, with angular to subangular small nodular flint fragments (up to 35mm in size) with a 3mm thick cortex.			
19.00-20.50	19.00	95 86	0.30 0.02	69	(6)	At 19.00m, with a orangish brown relic sponge trace (20mm in size). At 19.23m, with angular to subangular small nodular flints and 2 No small finger flints (up to 30mm in size) with a 3mm thick cortex.			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71818** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410819.1** E **141600.7** N Ground Level **96.50** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
20.26-20.43		**C**							2 1 1 1 1
20.50-22.00	**20.50**	**100 85**	**0.33 0.04**	**47**	**(8)**	**At 21.08m, discontinuity inclined 20 degrees, infilled (1mm thick) with comminuted chalk, planar and smooth with occasional black specks.**			2 1 1 1
21.34-21.54		**C**			**(NI)**	**Between 21.62-21.74m, non intact, recovered as a silty angular to subangular fine to coarse gravel and cobbles. With occasional subangular small nodular flint fragments (up to 20mm in size) with a 1mm thick cortex.**			3 1 3 1
					(15)	**At 21.74m, with a grey interwoven marl seam (5mm thick) with wispy marl partings (<1mm thick). Between 22.00-22.11m, with much orangish brown mottling of sponge trace fossils (up to 20mm in size).**			1 2 3 1
22.00-23.50	**22.00**	**100 77**	**0.49 0.04**	**57**	**(11)**	**Between 22.28-22.48m, non intact, recovered as silty angular to subangular fine to coarse gravel with a low subangular cobble content. At 22.32m, with angular to subangular small nodular flint fragments (up to 50mm in size) with a 3mm thick cortex. At 22.50m, with a subangular large nodular flint (110mm in length and full core diameter) with a 3mm thick cortex. Recovered as angular to subangular fine to coarse gravel. At 22.83m, discontinuity inclined 20 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with occasional black specks.**			3 2 1 1 2 1 3
23.00-23.20		**C**			**(NI)**	**At 23.20m, with a ribbed shell fragment (15mm in size). (Possibly plalycereums).**			1 1
					(8)	**Between 23.40-23.50m, discontinuity inclined 50 degrees, clean, planar and rough with occasional black specks and orangish brown surface staining. Clasts have with much orangish brown mottling of sponge beds (up to 15mm in size).**			3 3 1
23.50-25.00	**23.55**	**100 87**	**0.16 0.03**	**67**	**(5)**	**Between 23.92-24.07m, non intact, recovered as silty angular to subangular fine to coarse gravel and cobbles. Between 24.07-24.25m, with occasional ribbed shell fragments (up to 5mm thick).**			1 1 2 1 1
					(NI)	**At 24.25m and 24.37m, with grey wispy marl seams (up to 5mm thick) with interwoven grey marl partings (<1mm thick).**			1 1
					(5)	**At 24.61m, with angular to subangular small nodular flint fragments (up to 30mm in size). At 24.65m, with a orangish brown relic sponge trace (10mm in size). At 24.81m, with angular to subangular small nodular flint fragments (up to 50mm in size) with a 1mm thick cortex. Between 24.81-24.85m, with much orangish brown relic sponge bed traces (up to 10mm in size).**	**25.00 (71.50)**		1 1 1 1 2

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **5 of 10**
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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71818 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410819.1 E, 141600.7 N | Ground Level: 96.50 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
25.00-26.50	25.00	98 89	0.43 0.09	84		Very weak, low and medium density, white with occasional black specks and rare orangish brown mottling CHALK. Discontinuities are: Set 1 are 0-15 degrees, very closely to widely spaced (40/370/970), clean or infilled (0/0/1) with comminuted chalk or rare marl, undulating, locally planar and rough with many black specks and rare orangish brown mottling. Set 2 are 80-90 degrees, clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining. Set 3 are 30-50 degrees, clean or infilled (0/0/1) with marl or rare comminuted chalk, undulating and rough with many black specks and occasional orangish brown surface staining. [GRADE A2]	25.00 (71.50)		2
25.40-25.83		C							1
					(3)	At 25.61m, with a wispy grey marl seam (2mm thick) with interwoven grey marl partings (<1mm thick).			3 2 1
26.50-28.00	26.50	75 55	0.19 0.06	34					1 2 1
						At 26.91m, with angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex.			1
					(AZCL)	Between 27.54-27.62m, with a medium nodular flint (80mm in size) with a 1mm thick cortex, recovered as angular to subangular fine to coarse gravel. Between 27.62-28.00m, assumed zone of core loss.			1
28.00-29.50	28.00	70 59	0.41 0.04	45	(3)				1
28.54-28.79		C							3
					(NI)	Between 28.86-29.05m, non intact, recovered as silty angular to subangular fine to coarse gravel and cobbles. With subangular small nodular flint fragments (up to 30mm in size).			1
					(AZCL)	Between 29.05-29.50m, assumed zone of core loss.			
29.50-31.00	29.50	98 87	0.36 0.04	67					1
						At 29.87m, discontinuity inclined 20 degrees, clean, undulating and rough with occasional black specks.			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71818 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410819.1 E, 141600.7 N | Ground Level: 96.50 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
30.51-30.87		C			(3)	At 29.95m, with angular to subangular small nodular flint fragments (up to 40mm in size) with a 1mm thick cortex. At 30.10m, with a orangish brown relic sponge trace (15mm in size). At 30.45m, 30.51m, 31.23m and 31.34m, with grey wispy marl seams (up to 6mm thick) with interwoven wispy marl partings (<1mm thick).			1 1
31.00-32.50	31.00	85 71	0.39 0.05	58		At 31.43m, with angular to subangular medium nodular flint fragment (up to 60mm in size) with a <1mm thick cortex. Clasts have orangish brown mottling. At 31.75m , 32.05m and 32.73m, with orangish brown relic sponge traces (up to 10mm in size).			1 1 1
					(AZCL)	Between 32.28-32.50m, assumed zone of core loss.			
32.50-34.00	32.50	100 100	0.37 0.05	91					1
33.02-33.37		C			(3)	At 33.10m, with grey marl seam (6mm thick) and interwoven grey marl partings (<1mm thick) and an orangish brown sponge bed (10mm in size). At 33.50m, with a orangish brown relic sponge bed trace (15mm in size).			1 1 1
34.00-35.50	34.00	80 55	0.16 0.02	11	(NI) (15)	Between 34.00-34.34m, non intact, recovered as a silty angular to subangular fine to coarse gravel and cobbles. At 34.15m and 34.28m, with angular to subangular small nodular flint fragments (up to 30mm in size) with a <1mm thick cortex. Between 34.34-36.12m, Set 1 discontinuities are very closely to closely spaced (40/100/200) (Grade A3) At 34.44m and 34.79, with grey marl seams (up to 6mm thick) with interwoven wispy marl partings (<1mm thick).			1 3 1 1 1 2 1 3 1 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71818** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410819.1** E **141600.7** N Ground Level **96.50** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 35.00-35.20m, non intact, recovered as silty angular to subangular fine to coarse gravel and cobbles. With angular to subangular small nodular flint fragments (up to 20mm in size).			
					(AZCL)	Between 35.20-35.50m, assumed zone of core loss.			
35.50-37.00	35.50	78	0.37	49					
		73	0.04						
35.50-35.87		C				At 35.69m, with a grey marl seam (5mm thick) interwoven with grey wispy marl partings (<1mm thick).			1
						At 35.90m, with a large nodular flint (40mm thick and full diameter) recovered as angular to subangular fine to coarse gravel.			1
					(4)	At 36.06m, 36.27m and 36.67, wispy grey marl seams (up to 5mm thick) with interwoven grey wispy marl partings (<1mm thick).			1
									3
						Between 36.67-37.00m, assumed zone of core loss.			3
					(AZCL)				
37.00-38.50	37.00	71	0.27	39					2
		61	0.05			At 37.17m, with angular to subangular small nodular flint fragments (up to 40mm in size).			
						At 37.31m, with a grey marl seam (5mm thick) and interwoven wispy marl partings (<1mm thick).			
					(3)				1
						At 37.59m and 37.61m, with angular to subangular small nodular flint fragments (up to 30mm in size) with a 1mm thick cortex.			3
						At 37.94m, with a orangish brown relic sponge trace (10mm in size).			
						Between 38.07-38.50m, assumed zone of core loss.			
					(AZCL)				
38.50-40.00	38.50	100	0.27	71		At 38.55m, with a small sheet flint (60mm long x 5mm thick) with a 1mm thick cortex.			
		83	0.11			At 38.82m, with a subangular small nodular flint (50mm in size) with a 1mm thick cortex.			
						At 39.01m, 39.07m and 39.18m, with grey marl seams (up to 5mm thick) and interwoven wispy marl partings (<1mm thick).			
39.12-39.38		C				At 39.28m, with a orangish brown relic sponge bed trace (10mm in size).			1
						At 39.43m, with angular to subangular small nodular flint fragments (up to 40mm in size).			
						At 39.52m, with orangish brown relic sponge bed trace (10mm in size).			
						At 39.59m, with many interwoven grey marl seams (up to 3mm thick).			2
									1
									1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
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Figure **8 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71818** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410819.1** E **141600.7** N Ground Level **96.50** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
40.00-41.50	**40.00**	**100** **90**	**0.35** **0.05**	**58**	**(3)**	**At 40.39m, with a grey wispy marl seam (3mm thick) and interwoven marl partings (<1mm thick).** **At 40.53m, with a orangish brown relic sponge trace (10mm in size).** **At 40.60m, with a ribbed shell fragment (10mm in size).** **At 40.82m, with angular to subangular medium and small nodular flints (up to 70mm in size) with a 1mm thick cortex.** **At 40.92m, with occasional orangish brown relic sponge bed traces (up to 10mm in size).** **At 41.00m and 41.61m, grey marl seams (3mm thick) with interwoven wispy marl partings (<1mm thick).**			1 1 3 1 1
41.50-43.00	**41.50**	**100** **95**	**0.43** **0.05**	**61**		**At 41.64m, with angular to subangular small nodular flint fragments (up to 40mm in size).** **At 41.69m, with a wispy grey marl seam (3mm thick) with interwoven marl partings (<1mm thick).** **At 41.75m, with angular to subangular small nodular flint fragments (up to 50mm in size) with a 1mm thick cortex.**			
42.06-42.50		**C**				**At 41.98m, with a wispy marl seam (3mm thick) with wisps interwoven marl partings (<1mm thick).**			1
						At 42.59m, with angular to subangular small nodular flint fragments (up to 50mm in size). **At 42.70m, with a grey marl seams (3mm thick) with interwoven marl partings (<1mm thick). With angular to subangular small nodular flint fragments (up to 50mm in size).** **At 42.80m, with a grey marl seam (10mm thick) interwoven with wispy marl partings (<1mm thick).**			3 1 1
43.00-44.50	**43.00**	**97** **95**	**0.31** **0.04**	**73**	**(5)**	**Between 43.12-43.45m, with much orangish brown relic sponge bed traces (up to 20mm in size).** **At 43.42m, with occasional ribbed shell fragments (up to 10mm in size).** **At 43.61m, with angular to subangular small nodular flint fragments (up to 30mm in size) with a 1mm thick cortex.**			1 1 1 3 1
						At 44.08m, with angular to subangular small nodular flint fragments (up to 40mm in size) with occasional orangish brown relic sponge bed traces (up to 10mm in size) and ribbed shell fragments (up to 10mm in size).			1 1
44.50-46.00	**44.50**	**87** **84**	**0.61** **0.06**	**81**		**At 44.95m and 45.05m, with angular to subangular small nodular flint fragments (up to 45mm in size) with a 1mm thick cortex.**			1 1 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
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Figure **9 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71818**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410819.1** E **141600.7** N
Ground Level **96.50** m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(3)	**At 45.06m, with a ribbed shell fragment (10mm in size). (Platyceramus).**			
45.50-45.83		**C**							1
					(NI)	**Between 45.83-45.90m, non intact, recovered as angular to subangular fine to coarse gravel.**			
					(AZCL)	**At 45.90m, with angular to subangular small nodular flint fragments (up to 30mm in size). Between 45.90-46.00m, assumed zone of core loss.**	**46.00 (50.50)**		
						End of Borehole			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **AB**
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Figure **10 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71819 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410884.3 E, 141605.9 N | Ground Level: 97.81 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (97.81)		
						TOPSOIL: Soft brown slightly sandy gravelly silt with a low cobble content of subangular flint and many roots and rootlets. Gravel is angular to subrounded fine to coarse chalk and flint.	0.15 (97.66)		
0.20		B							
0.20		D							
0.20		ES					0.30 (97.51)		
0.20			PID=<0.1						
0.50- 0.80		B				**Light brown sandy very silty angular to subrounded fine to coarse GRAVEL with a low cobble content of subangular flint. Gravel is angular to subangular fine to coarse chalk and flint.**			
0.60- 0.80		D							
0.60- 0.80		ES							
0.60- 0.80			PID=0.4			**Structureless CHALK, composed of silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low and medium density and white. Matrix is white. With rare angular to subangular fine to coarse small nodular flints (up to 50mm in size). [GRADE Dc]**			
1.00- 1.20		B							
1.00- 1.20		ES							
1.00- 1.20			PID=<0.1						
1.20		D				**CHALK****	1.20 (96.61)		
1.70- 2.40	1.70	0			(NR)				
2.40- 3.90	2.40	73	0.06	0		**CHALK, recovered as silty angular to subangular fine to coarse gravel. Clasts are very weak, locally weak, medium density, white with rare black specks.**	2.40 (95.41)		
		20	0.02		(NI)	**Between 2.70-3.10m, solid core. Discontinuities inclined 70 degrees, very closely to closely spaced (20/20/90), clean, rarely infilled (0/0/1) with comminuted chalk, undulating and rough.**			
						Between 3.50-3.90m, assumed zone of core loss.			
					(AZCL)				
						At 3.90m, with angular to subangular small nodular flint fragments (up to 30mm in size).			
3.90- 5.40	3.90	93	0.10	7	(NI)				
		23	0.02				4.09 (93.72)		
					(4)	**Very weak, locally weak, medium density, white with rare black specks CHALK. Discontinuities where seen are: Set 1 are 50-70 degrees, extremely closely to closely spaced (10/120/200), clean, rarely infilled (0/0/1) with marl, planar and smooth with occasional black specks and rare orangish brown surface staining. Between 5.75-5.95m, Set 2 are 80-90 degrees, clean (0/0/0), undulating and rough with occasional black specks and rare orangish brown surface staining.**			1
						[GRADE A3] At 4.10m, with occasional orangish brown mottling. (Possibly sponge trace).			

Drilling

Depth	Hole Dia	Technique	Crew
0.30	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	SP/PB
1.70	0.12	Rotary Open Hole	SP/PB
45.90	0.12	Geobor S	SP/PB

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			19/08/19	08:00
1.20	NIL	DRY	19/08/19	18:00
1.20	NIL	DRY	20/08/19	08:00
20.40	20.40	DRY	20/08/19	18:00
20.40	20.40	20.40	21/08/19	08:00
42.90	42.90	36.70	21/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during drilling, possibly masked by flush.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
At 1.70m, 150mm diameter casing installed to 1.70m.
** Drillers description.
At 21.90m, the drilling flush was lost. The casing was pulled back to 15.00m at which point the flush returned. Casing reinstalled to 21.90m and drilling recommenced.
A Falling Head Permeability test was carried out at the end of the drilling with the casing

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by SI
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Figure 1 of 10
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71819
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410884.3 E 141605.9 N	Ground Level	97.81 m OD

Drilling		Properties/Sampling				Strata			Scale 1:25
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 4.36-4.50m, discontinuity inclined 30 degrees, clean, stepped and rough. Between 4.60-5.50m and 6.55-7.20m, non intact, recovered as silty angular to subangular fine to coarse gravel.			
5.40- 6.90 5.50- 5.62	5.40	93 33 C	0.12 0.02	8	(9)				1 1 2 2
					(6)				1 1
					(8)				1 1
					(NI)	At 6.70m, with angular to subangular small and medium nodular flint fragments (up to 90mm in size).			
6.90- 8.40	6.90	67 13	0.10 0.02	7			7.20 (90.61)		
					(8)	Weak, locally very weak, medium density, white with occasional black specks CHALK. Discontinuities where seen are: Set 1 are 0-10 degrees, very closely to closely spaced (50/80/110), clean, rarely infilled (0/0/1) with comminuted chalk, planar or stepped and rough with rare black specks. Set 2 are 30-40 degrees, very closely to closely spaced (40/60/80), clean (0/0/0), stepped or planar and rough with occasional black specks. Set 3 are 50-65 degrees, clean (0/0/0), stepped and rough. Set 4 are 85-90 degrees, clean (0/0/0), undulating or stepped and rough with occasional black specks.			3 1
					(NI)				3 3
					(AZCL)	Between 7.90-8.40m, assumed zone core loss. [GRADE A3] Between 7.70-7.90m, non intact, recovered as angular to subangular small to medium nodular flint fragments (up to 90mm in size). (Possibly flint band).			
8.40- 9.90 8.47- 8.60	8.40	73 47 C	0.20 0.02	20	(NI)	Between 8.40-8.47m, non intact, recovered as angular to subangular fine to coarse gravel.			4 2
					(15)	Between 8.60-8.70m, non intact, recovered as silty angular to subangular small to medium nodular flint fragments (up to 80mm in size).			4
					(NI)				
					(6)	At 8.70m, with occasional orangish brown relic sponge traces (up to 10mm in size).			3
					(NI)	Between 9.20-9.50m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobbles content.			2
					(AZCL)	Between 9.50-9.90m, assumed zone of core loss.			
9.90-11.40	9.90	93 60	0.15 0.02	20	(NI)	Between 9.90-10.10m, non intact, recovered as angular to subangular fine to coarse gravel.			

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				42.90	42.90	38.60	22/08/19	08:00						
				45.90	45.90	41.20	22/08/19	18:00						

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Pulled back to 13.00m.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71819 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410884.3 E, 141605.9 N | Ground Level: 97.81 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						At 10.10m, with rare orangish brown surface staining on clasts (2mm in size).			
					(6)				1 2 2 1 2 1
					(22)	Weak, medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 75-90 degrees, very closely to closely spaced (50/80/170), clean or infilled (0/0/1) with comminuted chalk, stepped or planar and rough with rare black specks [GRADE A3]	10.60 (87.21)		1 1 1 1 1
					(NI)	Between 10.90-11.40m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content. Clasts have occasional orangish brown surface staining.			
11.40-12.90	11.40	93 63	0.23 0.07	33	(12) (NI)	Weak, medium density, white with occasional black specks CHALK with occasional grey wispy marl seams (up to 4mm thick). Discontinuities are: Set 1 are 0-10 degrees, closely to medium spaced (70/340/600), infilled (1/1/2) with marl, stepped, rough with occasional black specks. Set 2 are 20-40 degrees, clean or infilled (0/0/1) with marl, planar or stepped and rough with rare black specks and occasional orangish brown surface staining.	11.40 (86.41)		2 1
11.78-12.00		C			(4)				
					(NI)				
					(2)	[GRADE B2] Between 11.56-11.60m, with tabular small sheet flint fragments (up to 10mm thick). At 11.69m, discontinuity inclined 75 degrees, clean, stepped and rough. Between 11.70-12.00m, discontinuity inclined 70 degrees, infilled (1mm thick) with comminuted chalk, stepped and rough with occasional black specks.			1
					(NI)	Between 12.00-12.20m, with angular to subangular small and medium nodular flint fragments (up to 75mm in size). (Possibly flint band).			
12.90-14.40	12.90	93 73	0.35 0.10	40		Between 12.64-12.98m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content. With many undulating grey wispy marl seams (up to 4mm thick). Between 13.00-13.70m, discontinuity inclined 90 degrees, clean, stepped and rough with occasional black specks. At 13.28m and 13.35m, with occasional angular to subangular small to medium nodular flint fragments (up to 70mm in size).			1
					(3)				1
13.90-14.25		C							
					(NI)	Between 14.25-14.40m, non intact, recovered as angular to subangular gravel.			
14.40-15.90	14.40	87 63	0.22 0.08	57	(4)	At 14.40m, with angular to subangular small nodular flint fragments (up to 30mm in size). Between 14.41-14.60m, with many patches (up to 4mm in size) of orangish brown surface staining. (Possible sponges).			2
					(NI)	Between 14.88-14.95m, non intact, recovered as angular to subangular fine to coarse gravel.			1 1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks: Flush: 1.70-20.40m, Air/Mist, 100% returns; 20.40-21.90m, Air/Mist, 0% returns; 21.90-45.90m, Air/Mist, 100% return.

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Figure 3 of 10
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71819** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410884.3** E **141605.9** N Ground Level **97.81** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(3)	At 15.10m and 15.20m, with white circular fossils (4mm in size).			2
					(NI)	Between 15.50-15.70m, non intact, recovered as angular to subangular fine to coarse gravel and with a low subangular cobble content. With occasional sheet-like inoceramid bivalve fossil fragments, possibly platyceramus (4mm thick).			
					(AZCL)	At 15.70m, with occasional angular to subangular small nodular flint fragments (up to 30mm in size). Between 15.70-15.90m, assumed zone core loss.			
15.90-17.40	15.90	100 77	0.20 0.10	48	(NI)	Between 15.90-16.00m, non intact, recovered as angular to subangular fine to coarse gravel and a low subangular cobble content.			
					(4)	Between 16.23-16.25m, with some orangish brown relic sponges traces (up to 10mm in size).			1
					(NI)	Very weak, medium density, white with occasional black specks CHALK.	16.45 (81.36)		
						Discontinuities are: Set 1 are 0-10 degrees, very closely to widely spaced(40/70/940), clean or infilled (0/1/2) with comminuted chalk or marl, stepped and rough with occasional black specks. Set 2 are 30-45 degrees, closely to medium spaced (70/90/590), clean or infilled (0/1/1) with marl or comminuted chalk, stepped or planar and rough. [GRADE B3]			1 1
17.20-17.40		C				Between 16.45-16.60m, with many angular to subangular small to medium nodular flint fragments (up to 90mm in size). (Possibly flint band).			1 1
17.40-18.90	17.40	87 55	0.20 0.09	37	(3)	At 17.65m and 17.87m, with occasional angular to subangular small and medium nodular flint fragments (up to 70mm in size).			2 1
					(NI)	Between 18.35-18.55m, with rare grey wispy marl seam (up to 2mm thick) and much orangish brown penetrative staining (up to 50mm depth). (Possibly sponges) .			
					(AZCL)	Between 18.40-18.70m, non intact, recovered as angular to subangular fine to coarse gravel with a low subangular cobble content. Between 18.70-18.90m, assumed zone of core loss.			
18.90-20.40	18.90	97 67	0.15 0.06	40	(0)				
					(NI)	Between 19.10-19.30m, with many angular to subangular small and medium nodular flint fragments (up to 99mm in size). (Probably very large flint broken during drilling).			
						At 19.40m and 19.68m, with occasional grey wispy marl seam (up to 3mm thick).			1 2 2
					(4)				
20.00-20.15		C							

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: R71819
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 410884.3 E, 141605.9 N
Ground Level: 97.81 m OD
Scale: 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						At 20.10m, with a circular bivalve (micraster) fossil fragments (30mm diameter).			2
20.40-21.90	20.40	87 70	0.18 0.09	57	(NI)	Between 20.40-20.50m, with angular and subangular small and medium nodular flint fragments (up to 98mm in size). (Probably very large flint broken during drilling).	20.50 (77.31)		
					(3)	Very weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, very closely to widely spaced (50/240/690), clean or infilled (0/0/2) with marl, stepped and rough or planar and smooth with rare black specs. At 20.80m, with grey wispy marl seam (<2mm thick). [GRADE A2] At 20.60m and 20.65m, with grey wispy marl seams (<1mm thick). At 20.70m, with orangish brown relic sponge traces (up to 15mm in size). Between 20.90-20.97m, discontinuity inclined 30 degrees, clean, planar and smooth.			1 1
					(NI) (AZCL)	Between 21.55-21.60m, non intact, recovered as angular to subangular fine to coarse gravel. With angular to subangular small and medium nodular flint fragments (up to 80mm in size). Between 21.60-21.90m, assumed zone of core loss. Between 21.90-22.05m, non intact, recovered as angular coarse gravel and cobbles.			
21.90-23.40 22.10-22.43	21.90	100 96 C	0.33 0.09	80	(NI)	At 22.30m, grey wispy marl seam (1mm thick).			
					(2)	Between 22.38-22.55m, with occasional orangish brown relic sponge traces (up to 15mm in size).			1 1
					(4)	At 23.12m, with a horizontal grey marl seam (4mm wide). At 23.23m, with angular and subangular small nodular flint fragments (up to 25mm in size).			1
23.40-24.90	23.40	100 87	0.29 0.10	63		Between 23.40-23.50m, discontinuity inclined 50 degrees, clean, planar and smooth with occasional black specks.			
					(NI)	Between 23.75-23.93m, with angular to subangular small to medium nodular flint fragments (up to 80mm in size).			1
					(1)				1
						Between 24.70-24.80m, with occasional orangish brown relic sponge traces (up to 10mm in size). At 24.83m, with angular small nodular flint fragment (10mm wide x 20mm long).			
24.90-26.40	24.90	75 53	0.20 0.08	27					

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71819** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410884.3** E **141605.9** N Ground Level **97.81** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 24.90-25.20m, non intact, recovered as angular and subangular fine to coarse gravel with a medium subangular cobble content. With a subangular medium nodular flint fragment (70mm wide x 90mm long).	25.30 (72.51)		1
25.44-25.64		C			(1)	Very weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 40-50 degrees, medium spaced (530/540/550), clean or infilled (0/0/1) with marl, stepped and rough or planar and smooth with rare black specks. [GRADE A2] At 25.75m, with angular to subangular small nodular flint fragments (up to 45mm in size).			
					(AZCL)	Between 26.02-26.40m, assumed zone of core loss.			
26.40-27.90	26.40	99 91	0.38 0.18	83	(5)	At 26.40m, with a subangular small nodular flint fragment (30mm wide x 48mm long).			1
					(NI)	Between 26.58-26.63m, with angular to subangular small nodular flints (up to 40mm in size). Between 26.62-26.74m and 27.60-27.90m, with occasional orangish brown relic sponge traces (up to 20mm in size).			
27.20-27.58		C			(2)				
27.90-29.40	27.90	93 80	0.25 0.10	55		At 28.80m, with occasional orangish brown surface staining on clasts (up to 10mm in size). At 28.90m, with angular and subangular small to medium nodular flint fragments (up to 80mm in size). Between 29.08-29.10m, discontinuity inclined 20 degrees, clean, planar, smooth.			1
29.40-30.90	29.40	93 77	0.30 0.08	45	(3)	At 29.50m, clasts with occasional orangish brown surface staining (up to 15mm in size). At 29.80m, with occasional angular and subangular small and medium nodular flint fragments (up to 80mm in size).			1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Figure **6 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71819 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410884.3 E, 141605.9 N | Ground Level: 97.81 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
30.17-30.47		C				At 30.03m, with occasional angular and subangular small nodular flint fragments (up to 25mm in size). At 30.10m, with a grey marl seam (<2mm thick). Between 30.30-30.45m, with occasional horizontal grey marl seams (up to 6mm wide).			1
30.90-32.40	30.90	95 90	0.63 0.12	75		At 31.10m, with much orangish brown relic sponge traces (up to 10mm in size). At 31.63m, with a tabular small sheet flint fragment (5mm thick x 80mm long). At 31.77m, with occasional angular to subangular small nodular flint fragments (up to 50mm in size). At 32.35m, subhorizontal discontinuity, infilled (2mm thick) with marl, stepped and rough.			
32.40-33.90	32.40	100 99	0.52 0.38	95	(2)	Very weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-15 degrees, very closely to widely spaced (80/215/500), infilled (1/1/2) with marl, stepped and rough or planar and smooth with rare black specks. Set 2 are 35-50 degrees, clean or infilled (0/1/1) with marl, stepped or planar and rough with rare black specks. [GRADE B3] Between 32.40-32.60m, with many subhorizontal grey wispy marl seams (up to 4mm thick). At 32.40m, subhorizontal discontinuity, infilled (2mm thick) with grey marl, planar and smooth with occasional orangish brown surface staining. Between 32.60-32.90m, with many circular trace fossils (4mm in size). At 33.00m, grey marl seam (<1mm).	32.40 (65.41)		1
33.90-35.40 33.94-34.38	33.90	83 60 C	0.40 0.09	52	(NI) (10) (NI) (2) (NI)	Between 33.90-34.03m, non intact, recovered as angular to subangular fine to coarse gravel. Between 34.13-34.24m, non intact, recovered as angular to subangular fine to coarse gravel. With angular to subangular small to medium nodular flint fragments (up to 60mm in size). Between 34.24-34.30m, discontinuity inclined 35 degrees, clean, stepped and rough. Between 34.90-35.00m, with angular small nodular flint fragments (up to 45mm in size).			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71819** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410884.3** E **141605.9** N Ground Level **97.81** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
35.08-35.49		**C**			**(7)**	**Between 35.15-35.40m, assumed zone of core loss.**			
					(AZCL)				
35.40-36.90	**35.40**	**100** **92**	**0.45** **0.40**	**81**	**(0)**	**At 35.90m, with angular small to medium nodular flint fragments (up to 70mm in size).**			
					(4)	**At 36.15m, with angular to subangular small to medium nodular flint fragments (up to 65mm in size).**			1
						Between 36.57-36.65m, with many horizontal grey wispy marl seam (3mm thick).			1
									1
36.90-38.40	**36.90**	**99** **85**	**0.40** **0.14**	**75**	**(2)**	**Between 36.90-37.02m, with orangish brown relic sponge traces (up to 10mm in size). With a circular bivalve fossil (micraster) (10mm diameter).** **At 37.04m, with a grey wispy marl seam (2mm thick).** **At 37.10m, with angular small nodular flint fragments (8mm wide x 15mm long).** **Between 37.29-37.32m, discontinuity inclined 25 degrees, infilled (1mm thick) with marl, planar and smooth.**			1
					(NI)	**At 37.40m, with a grey wispy marl seam (2mm thick).** **Between 37.50-37.60m, with angular to subangular small to medium flint fragments (up to 99mm in size).** **At 37.72m, with a grey wispy marl seam (1mm thick).**			2
37.98-38.38		**C**			**(0)**	**At 38.00m, with a grey marl seam (5mm thick).** **At 38.11m, with orangish brown relic sponge traces (up to 15mm in size).**			
38.40-39.90	**38.40**	**86** **77**	**0.53** **0.18**	**62**	**(AZCL)**	**Between 38.40-38.60m, non intact, recovered as angular and subangular fine to coarse gravel.**			1
					(NI)	**Between 38.60-39.05m, with much orangish brown relic sponge traces (up to 10mm in size).**			
						At 39.10m, with a horizontal grey wispy marl seam (3mm thick).			
					(1)				
39.90-41.40	**39.90**	**96** **83**	**0.26** **0.10**	**73**		**At 40.04m, with a circular unknown fossil (4mm diameter).**			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **SI**
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Figure **8 of 10**
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71819 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410884.3 E, 141605.9 N | Ground Level: 97.81 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
39.90-40.16		C							
						At 40.40m, with angular to subangular small nodular flint fragments (up to 50mm in size).			
						Between 40.80-40.90m, with occasional orangish brown surface staining and a horizontal grey wispy marl seam (up to 4mm thick). At 40.95m, with a grey wispy marl seam (3mm thick). Between 41.00-41.10m, with orangish brown relic sponge traces (up to 10mm in size).			1
						At 41.20m, with a angular small nodular flint fragment (10mm wide x 15mm long).			
						Between 41.42-41.75m, with occasional orangish brown relic sponge traces (up to 10mm in size).			1
41.40-42.90	41.40	100 90	0.38 0.20	72	(3)				
						Between 42.04-42.15m, with occasional grey marl seams (up to 4mm thick).			2
						Between 42.55-42.70m, with occasional orangish brown relic sponge traces (up to 20mm in size).			2
						Between 42.80-42.90m, with angular to subangular small to medium nodular flint fragments (up to 100mm in size).			
					(NI)				
42.90-44.40	42.90	100 97	0.53 0.16	92					
42.90-43.43		C							
						Between 43.44-43.68m, with angular to subangular small nodular flint fragments (up to 20mm in size). With many subhorizontal grey wispy marl seams (up to 5mm thick). At 43.63-43.64m, discontinuity inclined 25 degrees, infilled (1mm thick) with marl, stepped and rough with a angular small nodular flint (15mm in size). At 43.80m, subhorizontal sheet-like bivalve fossil (Platyceramus) (3mm thick). At 43.82m, with grey wispy marl seam (<1mm thick). Between 44.00-44.28m, with occasional orangish brown relic sponge traces (up to 15mm in size).			
					(2)				
						Between 44.30-44.40m, with angular to subangular small to medium nodular flint fragments (up to 70mm in size). At 44.45m and 44.63m, subhorizontal sheet-like bivalve fossils (Platyceramus) (up to 4mm thick).			
44.40-45.90	44.40	100 93	0.45 0.15	77					
44.58-45.03		C							
						At 44.68m, with angular to subangular small nodular flint fragments (up to 30mm in size). Between 44.70-44.78m, with occasional grey wispy marl seams (up to 3mm thick).			1

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71819
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410884.3 E 141605.9 N	Ground Level	97.81 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(3)	At 45.10m, with a grey wispy marl seam (<2mm thick). Between 45.15-45.26m, with occasional orangish brown relic sponge traces (up to 10mm in size). At 45.45m, with angular to subangular small nodular flint fragments (up to 35mm in size). Between 45.55-45.70m, with angular to subangular small nodular flint fragments (up to 30mm in size). With occasional grey wispy marl seams (up to 3mm thick).			
						End of Borehole	45.90 (51.91)		

Drilling | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71820
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410949.5 E 141570.9 N	Ground Level	99.72 m OD

Drilling / Properties/Sampling / Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
							G.L. (99.72)		
0.00- 0.20		B				TOPSOIL: Brown slightly sandy slightly gravelly silt with many rootlets and roots (up to 20mm in diameter). Gravel is angular to subangular fine to coarse flint and chalk.	0.20 (99.52)		
0.10		ES							
0.10			PID=0.1						
0.20- 0.30		B					0.30 (99.42)		
0.40- 0.60		B				Firm brown slightly sandy gravelly SILT. Gravel is angular to subangular fine to coarse flint and chalk			
0.50		D							
0.50		ES							
0.50			PID=<0.1						
						Structureless CHALK, composed of silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low to medium density and white with rare brown surface staining. Matrix is white. With occasional angular to subangular small flint fragments (up to 25mm in size). [GRADE Dc]			
1.00- 1.20		B							
1.00		ES							
1.00			PID=<0.1						
						Below 1.20m, very sandy.			
1.20- 2.65	1.20	100	0.10	7					
		31	0.03						
1.20		D			(NI)				
							1.65 (98.07)		
						Very weak to weak, medium density, white with occasional black specks CHALK. Discontinuities are: Set 1 are 20-30 degrees, very closely to medium spaced (20/230/350), clean, rarely infilled (0/0/1) with comminuted chalk, planar and rough with many black specks and rare orangish brown surface staining. Set 2 are 80-85 degrees, clean or infilled (0/0/1) with comminuted chalk, undulating and rough with many black specks. [GRADE A2]			1 2
					(8)				1
									2
									1 1
							2.45 (97.27)		1
						Between 1.99-2.04m, with many relic burrows (up to 10mm in length) stained orangish brown.			
2.65- 4.15	2.65	97	0.13	9		Weak, locally very weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 20-30 degrees, closely to medium spaced (140/280/420), clean (0/0/0), planar and rough with many black specks and rare orangish brown surface staining. Set 2 are 75-90 degrees, clean or infilled (0/1/1) with comminuted chalk, undulating or planar and rough with many black specks and rare orangish brown surface staining. [GRADE A2] Between 3.25-3.55m, non intact, recovered as angular to subangular fine to coarse gravel. Between 3.28-3.40m, with many orangish brown relic sponge traces (up to 35mm in size). Between 3.60-3.67m, with many relic burrows (up to 45mm in length) stained orangish brown. Between 3.85-3.93m, discontinuity inclined 45 degrees, clean, undulating and rough with many black specks.			2
		55	0.04		(4)				1
									1
					(NI)				
									2
3.72- 3.85		C			(5)				1
						Between 4.15-4.40m, non intact, recovered as sandy very silty angular to subangular fine to coarse gravel.			
4.15- 5.65	4.15	57	0.14	7					
		35	0.06		(NI)				
					(10)				2 1
						Between 4.60-4.75m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional angular to subangular small flint fragments (up to 15mm in size).			
					(NI)				
					(12)				2
4.85- 5.00		C							1
							4.96 (94.76)		1
					(25)	Weak, medium density, white with rare black specks CHALK.			

Drilling / Progress / Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.30	0.50	Inspection Pit	Arch	G.L.			19/08/19	08:00						None observed during drilling, possibly masked by flush.
1.20	0.50	Inspection Pit	AC/KH	1.20	NIL	DRY	19/08/19	18:00						
45.35	0.12	Geobor S	AC/KH	1.20	NIL	DRY	20/08/19	08:00						
				14.65	14.65	DRY	20/08/19	18:00						
				14.65	14.65	DRY	21/08/19	08:00						
				38.65	38.65	37.47	21/08/19	18:00						

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
At 1.20m, 150mm diameter casing installed to 1.20m.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574,

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR
Checked by CPL
Figure 1 of 10
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geotechnics

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71820
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410949.5 E 141570.9 N	Ground Level	99.72 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(AZCL)	**Discontinuities are:** **Set 1 are 0-5 degrees, extremely closely to closely spaced (10/60/170), clean or infilled (0/0/1) with comminuted chalk or marl, planar and rough with many black specks and rare orangish brown surface staining.** **Set 2 are 30-45 degrees, very closely to medium spaced (50/220/410), clean or infilled (0/0/1) with comminuted chalk or marl, undulating or planar and rough with many black specks and rare orangish brown surface staining.**			
5.65- 7.15	5.65	90 53	0.33 0.06	41	(3)	**[GRADE A2]** **Between 5.00-5.80m, assumed zone of core loss.** **Between 5.82-6.15m, discontinuity inclined 80 degrees, clean, planar and rough with many black specks.** **At 6.07m, with a subhorizontal relic burrow (45mm in length) stained orangish brown.**			2
					(NI)	**Between 6.15-6.63m and 7.15-7.43m, non intact, recovered as angular to subangular fine to coarse gravel.**			2 1 2
6.62- 6.80		C							1
					(4)				2
7.15- 8.65	7.15	90 67	0.22 0.02	30	(NI)				
					(13)				2
					(>25)	**Between 7.68-7.81m, discontinuity inclined 80 degrees, clean, undulating and rough with many black specks and rare orangish brown surface staining.**			2 1 2 1
8.10- 8.31		C			(4)	**Between 8.05-8.15m, with a angular small flint fragment (45mm in size).** **Between 8.15-8.23m, discontinuity inclined 60 degrees, clean, planar and rough with rare orangish brown surface staining.**			1 1 1 2
						Between 8.42-8.50m, with a subangular medium nodular flint (80mm in size, full diameter).			2
					(AZCL)	**Between 8.50-8.65m, assumed zone of core loss.**			
8.65-10.15	8.65	90 69	0.22 0.03	25	(NI)	**Between 8.65-8.98m, non intact, recovered as angular medium to coarse gravel with a medium subangular cobble content.**			
							8.98 (90.74)		
					(5)	**Weak, medium density, white with rare black specks CHALK.** **Discontinuities are:** **Set 1 are 50 degrees, clean (0/0/0), undulating and rough with many black specks.** **Set 2 are 75-80 degrees, clean (0/0/0), undulating and rough with many black specks and rare orangish brown surface staining.**			2
					(NI)	**At 8.98m, discontinuity inclined 5 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks.**			1
9.66- 9.83		C							2
					(11)	**Between 9.56-9.62m, non intact, recovered as silty angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 25mm in size).** **At 9.64m, with a subhorizontal grey marl seam (1mm thick).**			1 2 2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
38.65	38.65	31.70	22/08/19	08:00
45.35	45.35	32.30	22/08/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

AGS 2002.
Stratigraphic Nomenclature Provided by the Client.
Backfill details from base of hole: bentonite seal up to 3.00m, grout up to 0.50m, arisings up to ground level.
Flush: 1.20-45.35m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by JR
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Figure 2 of 10
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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71820 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410949.5 E, 141570.9 N | Ground Level: 99.72 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(AZCL)	Between 10.00-10.15m, assumed zone of core loss.			
10.15-11.65	10.15	59 53	0.23 0.06	40	(7)	Very weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 70-85 degrees, clean (0/0/0), undulating or planar and rough with many black specks. Set 2 are 0-5 degrees, clean or infilled (0/0/1) with comminuted chalk, planar and rough with many black specks. Between 10.18-10.23, discontinuity inclined 25 degrees, clean, planar and rough with many black specks. Between 10.44-10.50m, non intact, recovered as angular to subangular fine to coarse gravel. Between 10.57-10.64m, with occasional relic burrows (up to 25mm in length) stained orangish brown. Between 11.04-11.65m, assumed zone of core loss.	10.15 (89.57)		1 1 1 1
					(NI)				
10.72-10.94		C			(5)				
					(NI)				
					(10)				
					(AZCL)				
11.65-13.15	11.65	100 86	0.19 0.02	30	(NI)	Very weak, locally extremely weak, low and medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 70 degrees, very closely to closely spaced (20/45/90), clean (0/0/0), planar and rough with many black specks. [GRADE A4] Between 11.65-11.90m, non intact, recovered as angular to subrounded fine to coarse gravel. Between 11.70-11.74m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, planar and rough with many black specks. Between 12.08-12.15m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 50mm in size). Between 12.15-12.55m, discontinuity inclined 85 degrees, clean, undulating and rough with many black specks. Between 12.66-12.87m, Set 1 discontinuities are extremely to very closely spaced (20/20/50). Between 13.01-13.15m, non intact, recovered as silty angular to subangular fine to coarse gravel. Between 13.12-13.15m, with rare subangular small flint fragments (up to 25mm in size).	11.65 (88.07)		1 1 1 1 1
12.41-12.55		C			(4)				
					(19)				
					(7)				
					(NI)				
13.15-14.65	13.15	100 40	0.10 0.07	10	(7)				1 1
					(NI)				
13.41-13.57		C			(6)				
					(NI)	Between 13.30-13.41m, non intact, recovered as slightly sandy slightly gravelly silt. Gravel is angular to subangular fine to coarse chalk. Between 13.57-14.05m, non intact, recovered as very sandy very silty angular to subangular fine to coarse gravel.			
					(5)	Between 13.89-13.94m, with occasional subangular to subrounded small flint fragment (up to 10mm in size). Between 13.94-14.00m and 14.16-14.20m, with a angular to subangular medium nodular flint (70mm in size) with occasional orangish brown staining on surrounding clasts. Between 14.16-14.20m, discontinuity inclined 35 degrees, clean, planar and rough with many black specks.			1
					(NI)	At 14.20m, with a angular small flint fragment (up to 15mm in size).			1
14.65-16.15	14.65	93 70	0.21 0.07	53	(NI)	Between 14.30-14.65m and 14.65-14.70m, non intact, recovered as angular to subangular fine to coarse gravel.	14.65 (85.07)		
14.88-15.10		C			(6)	Very weak, medium density, white with rare black specks CHALK. Discontinuities are:			1 1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

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Figure 3 of 10
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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71820** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410949.5** E **141570.9** N Ground Level **99.72** m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Set 1 are 30-45 degrees, closely spaced (70/120/170), clean (0/0/0), planar and rough with many black specks and rare orangish brown surface staining. [GRADE A3]			
					(NI)	**At 14.71m, discontinuity inclined 5 degrees, clean, undulating and rough with many black specks. At 15.16m, subhorizontal discontinuity, clean, undulating and rough with many black specks.**			1
					(8)	**Between 15.32-15.44m, non intact, recovered as very silty subangular to subrounded small to medium flint fragments (up to 85mm in size).**			1
						Between 15.92-15.98m, non intact, recovered as angular to subangular fine to coarse gravel.			1
					(14)	**At 15.98m, discontinuity inclined 5 degrees, clean, planar and rough with many black specks. Between 16.05-16.15m, assumed zone of core loss.**			
16.15-17.65	**16.15**	**27**	**0.20**	**22**	(AZCL)	**Between 16.15-16.21m, non intact, recovered as angular to subrounded fine to coarse gravel.**			
16.17-16.38		**23 C**	**0.15**		(3)	**At 16.49m, with a subangular small flint fragment (5mm in size).**			1
						Between 16.58-17.65m, assumed zone of core loss.			
					(AZCL)				
17.65-19.15	**17.65**	**100**	**0.32**	**21**					
17.95-18.15		**78 C**	**0.12**		(2)	**Between 17.88-17.94m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 25mm in size).**			1
					(NI)	**Between 18.15-18.25m and 18.32-18.36m, non intact, recovered as silty angular to subrounded fine to coarse silty gravel. Between 18.36-18.53m, discontinuity inclined 85 degrees, clean, planar and rough with many black specks.**			
					(5)	**At 18.69m, relic bivalve fossil fragment (full core diameter).**			1
						Between 18.93-18.97m, discontinuity inclined 45 degrees, clean, planar and rough with many black specks.			1
					(NI)	**Between 18.99-19.15m, non intact, recovered as angular to subangular fine to coarse gravel. Between 19.15-19.55m, assumed zone of core loss.**			
19.15-20.65	**19.15**	**73**	**0.30**	**47**					
		53	**0.15**		(AZCL)				
					(6)	**Between 19.65-19.73m, with rare orangish brown relic sponge traces (up to 20mm in size).**			
							19.82 (79.90)		1
						Very weak, medium density, white with rare black specks CHALK. Discontinuities are: Set 1 are 0-10 degrees, closely to medium spaced			3

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure **4 of 10**
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BOREHOLE RECORD – Rotary Core

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	R71820
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	410949.5 E, 141570.9 N	Ground Level	99.72 m OD

Drilling | Properties/Sampling | Strata — Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	(110/230/430), clean, rarely infilled (0/0/1) with comminuted chalk, planar and rough with many black specks and rare orangish brown surface staining. Below 22.40m, Set 2 are 25-35 degrees, closely to medium spaced (160/240/330), clean (0/0/0), planar and rough with many black specks.			
20.15-20.45		C							1
					(2)	Set 3 are 75-85 degrees, clean (0/0/0), planar and rough with many black specks and rare orangish brown surface staining. [GRADE A2]			
20.65-22.15	20.65	85 57	0.34 0.13	38	(AZCL)	Between 19.82-20.15m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional small flint fragments (up to 10mm in size).			
20.88-21.22		C				Between 20.01-20.10m, with a subrounded medium nodular flint (90mm in size). Between 20.65-20.88m, assumed zone of core loss. At 20.90m, with a subangular small flint fragment (5mm in size). At 20.91m, with a relic burrow (35mm in length) stained orangish brown.			3
					(5)	Between 21.12-21.15m, discontinuity inclined 60 degrees, clean, undulating and rough with many black specks. At 21.49m, 21.58m and 21.63m, with a subangular to subrounded small nodular flint fragment (up to 35mm in size). At 21.73m, with a subangular medium nodular flint (60mm in size).			1 3 1
					(NI)	Between 21.99-22.15m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 10mm in size).			1
22.15-23.65	21.15	73 63	0.18 0.10	63		Between 22.15-22.21m, with rare orangish brown relic sponge traces (up to 25mm in size).			1
22.40-22.56		C			(6)				2
					(NI)	Between 22.67-22.77m, non intact, recovered as angular to subangular fine to medium gravel. With many subangular to subrounded small flint fragments (up to 45mm in size).			2
22.78-22.99		C				At 22.95m, with a subhorizontal relic burrow (70mm in length) stained orangish brown. At 23.00m and 23.04m, 2 No. subangular small nodular flint fragments (up to 50mm in size).			2
					(4)	Between 23.25-23.65m, assumed zone of core loss.			2
					(AZCL)				
23.65-25.15	23.65	100 75	0.24 0.09	36					3 1
					(3)				1
					(NI)	Between 24.61-24.81m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 15mm in size).			2 1
					(5)	Between 24.90-25.00m, with many grey marl seams (up to 1mm in size) and occasional relic burrows (up to 35mm in length) stained orangish brown infill.			1 1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM** Borehole **R71820** Project No **PC197626**

Client **HIGHWAYS ENGLAND** National Grid Coordinates **410949.5** E **141570.9** N Ground Level **99.72** m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
						Between 25.00-25.37m, non intact, recovered as angular to subangular fine to coarse gravel.			
25.15-26.65	**25.15**	**100** **75**	**0.25** **0.06**	**54**	**(NI)**		**25.37** **(74.35)**		
26.25-26.48		**C**			**(3)**	**Very weak, medium density, white with rare black specks CHALK, with rare orangish brown sponge traces (up to 45mm in size).** **Discontinuities are:** **Set 1 are 0-5 degrees, closely to widely spaced (90/380/800), clean or infilled (0/0/1) with comminuted chalk or rare marl, planar or undulating and rough with many black specks and occasional orangish brown surface staining.** **Set 2 are 70-85 degrees, clean (0/0/0), planar or undulating and rough with many black specks and occasional orangish brown surface staining.** **Set 3 are 45-65 degrees, clean (0/0/0), planar or undulating and rough with many black specks and occasional surface staining.** **[GRADE A2]** **Between 25.60-25.63m, discontinuity inclined at 40 degrees, clean, planar and smooth with many black specks.**		1 1 2
26.65-28.15	**26.65**	**87** **53**	**0.19** **0.04**	**43**	**(AZCL)**	**At 25.88m, with a angular small nodular flint (50mm in size).** **Between 26.57-26.65m, non intact, recovered as angular to subangular fine to coarse gravel with many small flint fragments (up to 50mm in size).**			
					(NI)	**Between 26.65-26.85m, assumed zone of core loss.**			
27.30-27.49		**C**			**(5)**	**Between 26.85-27.00m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular to subrounded medium flint fragments (up to 60mm in size).**			1 1 1 1
					(NI)	**At 27.83m, with a subangular small flint fragment (35mm in size).** **Between 27.93-27.96m, discontinuity inclined 35 degrees, clean, planar and rough with many black specks and occasional orangish brown surface staining.**			
28.15-29.65 **28.15-28.55**	**18.15**	**100** **100** **C**	**0.39** **0.06**	**72**	**(3)**	**Between 28.00-28.15m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 25mm in size).** **Between 28.55-28.59m, discontinuity inclined 20 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks and occasional orangish brown surface staining.** **At 28.95m, with a angular small nodular flint (25mm in size).** **Between 28.95-29.05m, with a subangular large nodular flint (100mm in length, full diameter).**			3 2 1 1
29.65-31.15	**29.65**	**100** **71**	**0.69** **0.28**	**60**	**(NI)**	**Between 29.65-30.00m, non intact, recovered as very silty angular to subangular fine to coarse gravel. With rare subrounded small flint fragments (up to 40mm in size).**			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **JR**
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Figure **6 of 10**
27/03/2020

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Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71820 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410949.5 E, 141570.9 N | Ground Level: 99.72 m OD

Drilling | Properties/Sampling | Strata | Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(1)	At 30.23m, with a subangular large nodular flint (50mm in length, fill diameter). Between 30.28-30.30m, non intact, recovered as angular small and medium flint fragments (up to 35mm in size).			1
30.55-30.83		C							
					(AZCL)	At 30.75m, with a subangular small nodular flint (50mm in size). Between 30.80-30.95, assumed zone of core loss.			
					(7)				
31.15-32.65	31.15	92	1.36	74	(NI)	Between 31.09-31.18m, non intact, recovered as angular to subangular fine to coarse gravel. With rare angular to subangular small flint fragments (up to 10mm in size).			1
		86	0.48			Between 31.23-31.29m, with many relic burrows (up to 45mm in size) stained orangish brown. At 31.29m, with a subhorizontal grey marl seam (1mm thick). At 31.42m, with an angular small flint fragment (5mm in size). At 31.49m, with a subhorizontal grey marl seam (1mm thick).			1
31.23-31.55		C							
									1
									2
									3
					(4)	At 32.50m and 32.61m, with a subangular small flint fragment (up to 7mm in size).			
32.65-34.15	32.65	100	0.33	75					2
		85	0.12			Between 32.91-33.05m, with occasional orangish brown relic sponge traces (up to 65mm in size).			1
									1
33.05-33.25		C							
						Between 33.25-33.27m, discontinuity inclined 30 degrees, infilled (1mm thick) with comminuted chalk, undulating and rough with many black specks. At 33.40m, with a subvertical grey marl seam (1mm thick).			1
									3
					(NI)	Between 33.78-33.99m and 34.08-34.15m, non intact, recovered as angular to subangular fine to coarse gravel.			
					(11)				3
					(NI)	Between 34.15-34.20m, assumed zone of core loss.			
34.15-35.65	34.15	97	0.32	80					
		80	0.12			At 34.48m and 34.94m, with a subhorizontal grey marl seams (up to 45mm thick).			1
					(4)				3
34.85-35.12		C							1

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by JR
Checked by CPL
Figure 7 of 10
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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71820 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410949.5 E, 141570.9 N | Ground Level: 99.72 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(NI)	Between 35.10-35.19m, non intact, recovered as angular to subangular fine to coarse gravel. With many subangular small to medium flint fragments (up to 75mm in size).			1 3
					(3)	Between 35.65-35.80m, with much orangish brown relic sponge traces (up to 35mm in size).			
35.65-37.15	35.65	100 72	0.47 0.08	52					2 2
					(NI)	Between 36.07-36.35m, non intact, recovered as angular to subangular fine to coarse gravel. With many subangular to subrounded small flint fragments (up to 15mm in size).			3
					(8)	At 36.72m, with a subhorizontal marl seam (up to 1mm thick).			2 1
36.81-37.15		C			(NI)	Between 36.75-36.84m, non intact, recovered as angular to subrounded fine to coarse gravel. Between 36.95-37.01m, with occasional relic burrows (65mm in size) stained orangish brown.			
					(2)	At 37.10m , with a subhorizontal marl seam (1mm thick).			1
37.15-38.65	37.15	100 58	0.41 0.06	37	(NI)	Between 37.25-37.34, non intact, recovered as angular to subangular fine to coarse gravel. Between 37.39-37.44m, with a marl seam (1mm thick) inclined 30 degrees.			2
					(6)	At 37.60m, with a subhorizontal marl seam (1mm thick).			1
					(NI)	Between 37.65-37.96m, non intact, recovered as silty angular to subangular fine to coarse gravel. With many angular to subangular small to medium flint fragments (up to 80mm in size). Between 37.96-38.10m, with occasional orangish brown relic sponge traces (up to 38mm in size).			3 1 1
					(6)				
38.40-38.65		C							2 3
38.65-40.15	38.65	100 66	0.48 0.04	38	(NI)	Between 38.65-38.85m and 39.08-39.14m, non intact, recovered as angular to subrounded medium to coarse gravel.			
					(4)				
39.14-39.29		C			(NI)				
					(7)	Between 39.28-39.46m, non intact, recovered as angular to subangular fine to coarse gravel. With occasional subangular small flint fragments (up to 30mm in size). Between 39.38-39.46m, with subangular to subrounded small to medium flint fragments (up to 80mm in size).			1
					(NI)				
						At 39.90m, with a subrounded small flint fragment (15mm in size).			2

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 8 of 10
27/03/2020

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BOREHOLE RECORD – Rotary Core

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Borehole: R71820 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 410949.5 E, 141570.9 N | Ground Level: 99.72 m OD

Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
									2
40.15-41.65	40.15	100 92	0.80 0.18	92	(2)	Between 40.15-40.45m, with much orangish brown relic sponge traces (up to 65mm in size). Between 40.39-40.76m, with rare subangular small flint fragments (up to 10mm in size). Between 40.53-40.55m, with many marl seams (up to 1mm thick). At 40.79m and 40.86m, with many marl seams (up to 1mm thick).			2 1
41.10-41.32		C				At 41.32m, with an undulating marl seam (3mm thick).			1
41.65-43.15	41.65	100 78	0.31 0.10	78	(NI)	Between 41.65-41.78m, with many marl seams (up to 1mm thick). Between 41.88-41.96m, with rare marl seams (up to 1mm thick). Between 41.96-42.00m, with occasional orangish brown relic sponge traces (up to 25mm in size). Between 42.20-42.30m, with rare marl seams (up to 1mm thick). Between 42.38-42.57m, non intact, recovered as angular to subangular fine to coarse gravel. Between 42.38-42.45m, with many subangular small to medium flint fragments (up to 65mm in size).			1
42.57-42.79		C			(5)	Between 42.79-42.84m, discontinuity inclined 20 degrees, clean, planar and rough with many black specks. Between 42.90-42.94m, with a subrounded small flint fragment (45mm in size). Between 43.15-43.30m, non intact, recovered as angular to subangular fine to coarse gravel.			1 1
43.15-44.65	43.15	71 63	0.43 0.17	45	(NI)				1
43.30-43.60		C			(3)	At 44.10m, with a subangular small nodular flint (45mm in size). Between 44.22-44.65m, assumed zone of core loss.			1 2
					(AZCL)				1
44.65-45.35	44.65	100 53	0.42 0.12	53	(3)				
					(NI)	Between 44.96-45.08m, non intact, recovered as angular to subangular fine to coarse gravel.			

Drilling

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

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Figure 9 of 10
27/03/2020

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BOREHOLE RECORD – Rotary Core

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **R71820**
Project No **PC197626**
Client **HIGHWAYS ENGLAND**
National Grid Coordinates **410949.5** E **141570.9** N
Ground Level **99.72** m OD
Scale 1:25

Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	(FI)	Description	Depth (Level)	Legend	Discontinuity
					(17)				1
					(NI)	**Below 45.20m, non intact, recovered as angular to subangular small to large flint fragments (up to 100mm in size).**			1
						End of Borehole	**45.35 (54.37)**		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 Discontinuity column graphic is illustrative only & does not represent discontinuities as found in the core, refer to Discontinuity Summary Sheet

Logged by **JR**
Checked by **CPL**
Figure **10 of 10**
27/03/2020

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Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71201

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
2.58	1	Joint	5		0		Planar	Smooth	with many black specks
2.78	1	Joint	8		0		Undulating	Rough	with many black specks
2.87-2.96	2	Joint	40		0		Undulating	Rough	with many black specks
3.40-3.50	2	Joint	50		8	Sheet flint	Stepped	Rough	with many black specks
3.55-4.40	3	Joint	90		0		Undulating	Rough	with many black specks
4.50-4.95	3	Joint	90		0		Stepped	Rough	with many black specks
4.65-5.12	3	Joint	85		0		Stepped	Rough	with many black specks
5.05-5.20	3	Joint	80		0		Stepped	Rough	with many black specks
5.50-5.69		Fracture	75		0		Undulating	Rough	with many black specks
5.72	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
5.94-5.96	1	Joint	10		0		Planar	Smooth	with many black specks
6.15-6.17		Fracture	25		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
6.40-6.50		Fracture	70		0		Stepped	Rough	with many black specks
6.50-6.77	3	Joint	80		0		Stepped	Rough	very closely speced, with many black specks and occasional orangish brown surface staining
6.50-6.70	3	Joint	85		1	Marl	Stepped	Rough	very closely speced, with many black specks and occasional orangish brown surface staining
6.77-6.84	2	Joint	40		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
7.15-7.17	1	Joint	15		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
7.25-7.33	2	Joint	40		0		Undulating	Rough	with many black specks
7.33-7.36	2	Joint	50		0		Stepped	Rough	with many black specks and orangish brown surface staining
7.36-7.50	2	Joint	60		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
7.56	1	Joint	7		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
7.80-8.05	2	Joint	55		0		Undulating	Rough	with many black specks
8.00-8.15	2	Joint	55		0		Undulating	Rough	with many black specks
8.22-8.24	1	Joint	12		0		Stepped	Rough	with many black specks
8.31-8.33	1	Joint	12		0		Stepped	Rough	with many black specks
8.50-8.60	2	Joint	60		0		Stepped	Rough	with many black specks
8.55-8.66	2	Joint	40		0		Undulating	Rough	with many black specks
8.77-8.83		Fracture	30		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
8.87-8.90	2	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71201

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
9.02-9.13	3	Joint	80		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
9.23	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
9.72	1	Joint	0		0		Undulating	Rough	with many black specks
10.12-10.15	2	Joint	30		0		Stepped	Rough	with many black specks
10.20	1	Joint	9		0		Undulating	Rough	with many black specks
10.27-10.32	2	Joint	40		0		Undulating	Rough	with many black specks
10.46-10.53		Fracture	60		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
10.48-10.54	1	Joint	20		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
10.73	1	Joint	0		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
10.84	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
10.92-11.13		Fracture	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
11.57-11.63	2	Joint	40		0		Stepped	Rough	with many black specks
11.69-11.83		Fracture	60		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
11.86-12.00		Fracture	80		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
11.95	1	Joint	0		0		Planar	Smooth	with many black specks and occasional orangish brown surface staining
12.50	1	Joint	0		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
13.30-13.69	1	Joint	8		0		Undulating	Rough	with many black specks
13.69-13.77		Fracture	50		0		Stepped	Rough	with many black specks
13.69	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
13.77-13.79	2	Joint	30		0		Undulating	Rough	with many black specks
14.08-14.10	2	Joint	30		0		Stepped	Rough	with many black specks
14.22-14.30	2	Joint	40		0		Undulating	Rough	with many black specks
14.52-14.54	1	Joint	15		0		Undulating	Rough	with many black specks
14.71-14.73	1	Joint	15		0		Stepped	Rough	with many black specks
14.90	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71201

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
15.38-15.40	1	Joint	10		0		Stepped	Rough	with many black specks
15.60-15.66	2	Joint	40		0		Undulating	Rough	with many black specks
15.81-15.90	2	Joint	40		1	Marl	Stepped	Rough	with many black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.

Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71202

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
2.70-3.27	1	Joint	90		1	Comminuted chalk	Undulating	Rough	with many black specks
2.95	2	Joint	5		0		Undulating	Rough	with occasional black specks and much orangish brown surface staining
3.05-3.13	3	Joint	45		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
3.06-3.19		Fracture	70		0		Undulating	Rough	with many black specks
3.21	2	Joint	5						incipient, closed
3.30-3.35	3	Joint	50		0		Undulating	Rough	with occasional black specks
3.35-3.46	1	Joint	80		0		Undulating	Rough	with occasional black specks
3.51	2	Joint	0		0		Undulating	Rough	with many black specks and rare brown surface staining
3.60	2	Joint	0		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
3.70-3.80	1	Joint	80		0		Undulating	Rough	with many black specks
3.84-3.90		Fracture	60		0		Undulating	Rough	with many black specks
3.94	2	Joint	5		0		Undulating	Rough	with many black specks
4.00	2	Joint	0		0		Undulating	Rough	with many black specks and orangish brown surface staining
4.28-4.35		Fracture	20		0		Undulating	Rough	with occasional black specks
4.28	2	Joint	5		0		Undulating	Rough	with many black specks
4.30-4.43		Fracture	75		0		Undulating	Rough	with occasional black specks
4.43	2	Joint	0		1	Comminuted chalk	Stepped	Rough	with occasional black specks and orangish brown surface staining
4.45-4.55	1	Joint	80		0		Undulating	Rough	with many black specks
4.58-4.65	3	Joint	45		1	Comminuted chalk	Stepped	Rough	with occasional black specks
4.65	2	Joint	0		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
4.72-4.80	1	Joint	90		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
4.72	2	Joint	5		0		Undulating	Rough	with many black specks
4.88-4.94	3	Joint	45		0		Undulating	Rough	with occasional black specks
4.92-4.98	3	Joint	45		0		Undulating	Rough	with occasional black specks
4.98-5.03	3	Joint	45		0		Undulating	Rough	with rare black specks
5.05-5.12	3	Joint	45		0		Stepped	Rough	with rare black specks
5.85-5.95	1	Joint	80		0		Undulating	Rough	with many black specks
6.10	2	Joint	0		0		Undulating	Rough	with many black specks
6.16-6.32	1	Joint	80		0		Stepped	Rough	locally undulating with many black specks
6.34-6.40	3	Joint	50						incipient, closed
6.40-6.50	1	Joint	80		0		Undulating	Rough	with occasional black specks
6.55-6.62	1	Joint	90		0		Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71202

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
7.36-7.39	2	Joint	10		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
7.46	2	Joint	5		0		Undulating	Rough	with many black specks
7.50	2	Joint	0		1	Comminuted chalk	Undulating	Rough	with occasional black specks
7.55-7.65		Fracture	70		0		Undulating	Rough	with many black specks
7.66	2	Joint	0		0		Undulating	Rough	with occasional black specks
7.79-7.95	1	Joint	90		0		Undulating	Rough	with rare black specks
8.12	1	Joint	5		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
8.18-8.45		Fracture	90		0		Undulating	Rough	with many black specks
8.18	1	Joint	0		0		Undulating	Rough	with occasional black specks
8.26	1	Joint	0		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
8.34	1	Joint	0		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
8.70	1	Joint	10						incipient, closed
8.80-8.88		Fracture	45		0		Undulating	Rough	with occasional black specks and much orangish brown surface staining
8.90-8.95		Fracture	45		0		Undulating	Rough	with many black specks and orangish brown surface staining
8.94-9.08		Fracture	80		0		Undulating	Rough	with many black specks and orangish brown surface staining
9.60-9.76	3	Joint	80		0		Undulating	Rough	with many black specks
9.65	1	Joint	5		0		Undulating	Rough	with many black specks
9.80-9.90		Fracture	20		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
10.13	1	Joint	5		0		Undulating	Rough	with rare black specks
10.17	1	Joint	5		0		Stepped	Rough	with occasional black specks
10.22	1	Joint	5		2	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
10.55	1	Joint	5		0		Stepped	Rough	with occasional black specks
10.62-10.70	2	Joint	45		0		Undulating	Rough	with many black specks
10.67-10.77	2	Joint	50		0		Undulating	Rough	with many black specks
10.77-10.83	2	Joint	45		0		Undulating	Rough	with occasional black specks
10.88-10.93		Fracture	20		1	Comminuted chalk	Undulating	Rough	with many black specks
11.15-11.22		Fracture	30		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
11.65	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with occasional black specks
11.82	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71202

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
11.82-11.92	3	Joint	90		0		Undulating	Rough	with rare black specks
11.92	1	Joint	10		0		Undulating	Rough	with occasional black specks
12.02	1	Joint	0		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
12.02-12.13	2	Joint	40		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
13.10-13.22	3	Joint	80		0		Undulating	Rough	with occasional black specks
13.22-13.33		Fracture	70		0		Undulating	Rough	with occasional black specks
13.52	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with occasional black specks
13.63	1	Joint	0		0		Undulating	Rough	with rare black specks and orangish brown surface staining
13.82	1	Joint	5		0		Stepped	Rough	with rare black specks
14.22	1	Joint	0		0		Undulating	Rough	with occasional black specks
14.84-14.90	2	Joint	45		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
14.90-15.05	3	Joint	80		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
15.23	1	Joint	0		0		Stepped	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71204

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
2.64-2.82	1	Joint	80		1	Comminuted chalk	Stepped	Rough	with occasional black specks and rare orangish brown surface staining
2.89	2	Joint	0		0		Undulating	Smooth	with many black specks and occasional orangish brown surface staining
2.98-3.05	1	Joint	75		0		Undulating	Smooth	with many black specks and rare orangish brown surface staining
2.98	2	Joint	0		0		Undulating	Rough	with much orangish brown surface staining
3.06-3.14	1	Joint	75		2	Comminuted chalk	Stepped	Rough	with many black specks
3.25-3.33		Fracture	90		0		Stepped	Rough	with occasional black specks and orangish brown surface staining
3.25	2	Joint	5		1	Comminuted chalk	Stepped	Rough	with occasional black specks and brown surface staining
3.33	2	Joint	0		0		Stepped	Rough	with many black specks
4.12-4.16		Fracture	40		0		Undulating	Rough	with rare black specks and occasional grey surface staining
4.24	2	Joint	0		1	Comminuted chalk	Stepped	Rough	with occasional black specks
4.26	2	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
4.36		Fracture	20		0		Undulating	Rough	with many black specks
4.41-4.49	1	Joint	85		0		Undulating	Rough	with many black specks and occasional brown surface staining
4.41	2	Joint	0		0		Undulating	Smooth	with many black specks
4.53-4.56	1	Joint	70		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
4.56-4.77	1	Joint	70		0		Undulating	Rough	with many black specks
4.85	2	Joint	10		0		Stepped	Rough	with many black specks and rare brown surface staining
5.10-5.16		Fracture	45		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
5.85-5.90	1	Joint	70		0		Stepped	Rough	with many black specks
5.87-5.96		Fracture	90		0		Undulating	Rough	with occasional black specks
5.96	2	Joint	0		0		Undulating	Rough	with occasional black specks
6.30-6.50	1	Joint	80		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
7.13-7.29	1	Joint	80		0		Stepped	Rough	with many black specks
7.29-7.66	1	Joint	85		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
7.35	2	Joint	0		1	Shell fragment	Stepped	Rough	with occasional black specks and a shell fragment (10mm in

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71204

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									size)
8.05-8.16	1	Joint	80		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
8.30-8.35		Fracture	45		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
8.43	2	Joint	0		0		Stepped	Rough	with many black specks
8.60-8.85	1	Joint	80		1	Comminuted chalk	Undulating	Rough	locally stepped, with many black specks
8.72	2	Joint	0		0		Planar	Rough	with occasional black specks
8.80-8.95		Fracture	70		0		Stepped	Rough	with occasional black specks
8.90	2	Joint	10		0		Stepped	Rough	with many black specks
9.04-9.20	1	Joint	0		0		Stepped	Rough	with many black specks
9.10	2	Joint	0		5	Comminuted chalk	Stepped	Rough	with occasional black specks
9.18-9.25		Fracture	45		0		Stepped	Rough	with rare black specks and occasional orangish brown surface staining
9.36		Fracture	20		0		Stepped	Smooth	incipient (opened during logging) with many black specks
9.62-9.77	1	Joint	85		0		Undulating	Rough	with many black specks
9.69		Fracture	45		0		Stepped	Rough	with many black specks
10.10-10.58	1	Joint	90		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
10.30	2	Joint	0		0		Undulating	Rough	with occasional black specks
10.58-10.69		Fracture	65		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
10.58-10.88	1	Joint	80		0		Undulating	Rough	with many black specks
11.20-11.30		Fracture	70		1	Comminuted chalk	Undulating	Rough	with many black specks
11.80-12.04	1	Joint	80		0		Stepped	Rough	with many black specks
12.35	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks and orangish brown surface staining
12.51		Fracture	20		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
12.58-12.65	2	Joint	80		0		Undulating	Rough	with occasional black specks
12.65	1	Joint	0		0		Stepped	Rough	with many black specks
12.72	1	Joint	5		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
12.85		Fracture	40		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
12.85-13.00	2	Joint	90						incipient, closed
13.32	1	Joint	5		0		Stepped	Rough	with rare black specks and much orangish brown surface staining
13.58	1	Joint	0		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
14.03	1	Joint	0		0		Stepped	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71204

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									and orangish brown surface staining
14.19-14.25		Fracture	70		0		Undulating	Rough	with occasional black specks
14.19	1	Joint	10		0		Undulating	Rough	with rare black specks and occasional orangish brown surface staining
14.25-14.32		Fracture	45		0		Undulating	Rough	with many black specks
14.70	1	Joint	0		0		Undulating	Rough	with rare black specks
14.84	1	Joint	5		2	Comminuted chalk	Undulating	Rough	with occasional black specks
15.03	1	Joint	0		0		Undulating	Smooth	incipient (opened during logging) with occasional black specks
15.10	1	Joint	0		2	Comminuted chalk	Undulating	Rough	with occasional black specks
15.10-15.24	2	Joint	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
15.33	1	Joint	0		0		Stepped	Rough	with rare black specks and occasional orangish brown surface staining
15.65-15.77	2	Joint	80		0		Undulating	Rough	with many black specks and orangish brown surface staining
15.90	1	Joint	5		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71205

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.48	1	Joint	15		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.50-1.64		Joint	60		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
1.57-1.61		Joint	50		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.66	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
1.67	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.69	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.70-1.73	1	Joint	20		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
1.70-1.79	2	Joint	90		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
1.80	1	Joint	15		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.87-1.93	2	Joint	90		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.93-2.00		Joint	30		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
1.93	1	Joint	10		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
2.10	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
2.89-2.91		Joint	30		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
2.91-3.22	2	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
3.07-3.15	1	Joint	20		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.30-3.33	1	Joint	20		0		Undulating	Rough	with many black specks and

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71205

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									occasional orangish brown surface staining
3.38-3.53	2	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
3.47-3.54		Joint	25		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.47	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.64	1	Joint	8		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.64-3.72	2	Joint	90		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
3.81-3.84	1	Joint	20		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.85-3.93		Joint	50		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
3.95-3.98	1	Joint	20		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.98-4.00	2	Joint	85		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.00-4.03	1	Joint	20		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
4.30-4.60	3	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
4.44-4.60	2	Joint	70		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.44-5.50	3	Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
4.60-4.87	3	Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
4.96-5.25	3	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
5.03-5.16	2	Joint	55		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71205

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
5.19-5.20	1	Joint	20		0				
5.25-5.36	2	Joint	60		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
5.32-5.40		Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
6.00	1	Joint	10		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
6.00-6.10	2	Joint	65		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
6.23-6.32	2	Joint	60		0		Undulating	Rough	with many black specks
6.32	1	Joint	8		1	Marl	Stepped	Rough	with many black specks
6.32-6.48	3	Joint	90		0		Stepped	Rough	with many black specks
6.32-6.56	3	Joint	85		0		Stepped	Rough	with many black specks
6.45-6.50	2	Joint	55		0		Stepped	Rough	with many black specks
6.70	1	Joint	0		0		Planar	Rough	with many black specks
6.86-7.20	3	Joint	85		6	Flint	Stepped	Rough	with many black specks and occasional orangish brown surface staining, sheet flint along discontinuities
7.00	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
7.11	1	Joint	0		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
7.20	1	Joint	0		1	Marl	Stepped	Rough	with many black specks and occasional orangish brown surface staining
7.64	1	Joint	0		0		Undulating	Rough	with many black specks
7.64-7.88	3	Joint	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
7.96	1	Joint	16		1	Comminuted chalk	Stepped	Rough	with many black specks
8.11	1	Joint	10		1	Comminuted chalk	Planar	Rough	with many black specks
8.20-8.63	3	Joint	85		0		Stepped	Rough	with many black specks
8.21-8.25	2	Joint	35		0		Stepped	Rough	with many black specks
8.30-8.40	2	Joint	60		0		Stepped	Rough	with many black specks
8.90-9.00		Joint	70		0		Stepped	Rough	with many black specks
9.06-9.10	1	Joint	10		0		Planar	Rough	with occasional black specks
9.10-9.14		Joint	35		0		Planar	Rough	with many black specks
9.14-9.40		Joint	70		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
9.33-9.38		Joint	30		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
9.70	1	Joint	0		0		Stepped	Rough	with many black specks
10.44	1	Joint	0		0		Planar	Rough	with many black specks and

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71205

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									occasional orangish brown surface staining
10.44-10.54	3	Joint	90		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
10.70	1	Joint	10		0		Stepped	Rough	with many black specks
10.70-10.90	3	Joint	90		0		Undulating	Rough	with many black specks
10.80-10.82	1	Joint	15		0		Undulating	Rough	with many black specks
11.02	1	Joint	5		0		Planar	Rough	with many black specks
11.02-11.29	3	Joint	85		0		Undulating	Rough	with many black specks
11.06	1	Joint	10		0		Undulating	Rough	with many black specks
11.22-11.80	3	Joint	90		0		Planar	Rough	incipient, partially open with many black specks
11.29-11.36	2	Joint	40		0		Stepped	Rough	with many black specks
11.60-11.70	2	Joint	40		0		Stepped	Rough	with many black specks
11.80-11.95	2	Joint	60		0		Stepped	Rough	with many black specks
11.80-11.99	3	Joint	85		0		Undulating	Rough	with many black specks
12.15-12.26	2	Joint	40		0		Undulating	Rough	with many black specks
12.41	1	Joint	0		1		Stepped	Rough	with many black specks
12.41-12.51	3	Joint	90		1		Undulating	Rough	with many black specks
12.51-12.60	3	Joint	85		0		Stepped	Rough	with many black specks
12.60-12.70	3	Joint	90		1		Undulating	Rough	with many black specks
13.52-13.67	2	Joint	45		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
14.07-14.30	3	Joint	85		0		Stepped	Rough	with many black specks
14.30	1	Joint	0		0		Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71206

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.30	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.36	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.40	1	Joint	0		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
1.48	1	Joint	5		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
1.50	1	Joint	3		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.52-1.54		Fracture	30		1	Comminuted chalk	Planar	Rough	with many black specks and occasional orangish brown surface staining
1.58-1.80		Fracture	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
1.59-1.60	1	Joint	20		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
1.70	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.90-2.20		Fracture	90		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
1.97	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
2.80-2.82	1	Joint	10		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.04	1	Joint	0		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
4.32-4.39	4	Joint	90		0		Stepped	Rough	with many black specks
4.46-4.47	3	Joint	70		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.47	1	Joint	10		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.82-5.00	4	Joint	90		0		Stepped	Rough	with many black specks and occasional orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71206

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
5.00	1	Joint	12		0		Planar	Smooth	with many black specks
5.00-5.10	3	Joint	70		0		Stepped	Rough	with many black specks
5.15-5.20	2	Joint	35		0		Stepped	Rough	with many black specks
5.82	1	Joint	0		0		Stepped	Rough	with many black specks
5.97-6.00	1	Joint	20		0		Stepped	Rough	with many black specks
6.21	1	Joint	3		1	Comminuted chalk	Undulating	Rough	with many black specks
7.23-7.33	2	Joint	35						incipient, closed
7.40-7.59	3	Joint	70		0		Undulating	Rough	with many black specks
7.68	1	Joint	0		0		Undulating	Rough	with many black specks
7.97-8.00	1	Joint	20		1	Comminuted chalk	Undulating	Rough	with many black specks
8.00-8.10	2	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks
8.10-8.20	4	Joint	90		0		Stepped	Rough	with many black specks
8.65-8.72	3	Joint	50		0		Stepped	Rough	with many black specks
8.72-8.29	2	Joint	30		0		Stepped	Rough	with many black specks
8.72-8.89	4	Joint	80		0		Undulating	Rough	with many black specks
8.81-8.90	3	Joint	50		0		Stepped	Rough	with many black specks
9.08-9.16	4	Joint	90		0		Undulating	Rough	with many black specks
9.16	1	Joint	0		0		Planar	Smooth	with many black specks
9.30-9.32	1	Joint	15		0		Stepped	Rough	with many black specks
10.12	1	Joint	0		0		Undulating	Rough	with many black specks
10.12-10.25	3	Joint	70		0		Undulating	Rough	with many black specks
10.20-10.25	3	Joint	50		0		Stepped	Rough	with many black specks
10.73	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
10.73-10.92	3	Joint	70		0		Undulating	Rough	very closely spaced, with many black specks
10.73-10.92	3	Joint	70		0		Stepped	Rough	very closely spaced, with many black specks
11.06-11.10	2	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks
12.27-12.30	3	Joint	50		0		Undulating	Rough	with many black specks
12.28-12.32	3	Joint	55		0		Undulating	Rough	with many black specks
12.60-12.67	2	Joint	40		0		Stepped	Rough	with many black specks
13.14	1	Joint	6		0		Planar	Rough	with many black specks
13.33	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
13.60	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
13.80	1	Joint	0		0		Stepped	Rough	with occasional black specks
13.88-13.94	3	Joint	50		0		Stepped	Rough	with many black specks
14.10-14.26	4	Joint	80		0		Undulating	Rough	with many black specks
14.90-14.94	2	Joint	40		0		Stepped	Rough	with many black specks
14.92-15.00	3	Joint	70		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71207

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
2.50-3.25		Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
2.59-2.60	2	Joint	40		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
2.80-2.83	1	Joint	15		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
2.88-2.85		Joint	70		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
2.95-2.98	2	Joint	30		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.20-3.23	1	Joint	20		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.26-3.32	2	Joint	40		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
3.31-3.35	2	Joint	45		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
3.35-3.37	1	Joint	20		0		Stepped	Rough	with many black specks
3.43-3.47	1	Joint	10		0		Stepped	Rough	with many black specks
3.47-3.60		Joint	85		1	Comminuted chalk	Stepped	Rough	with many black specks
3.60-3.65	2	Joint	30		0		Stepped	Rough	with many black specks
3.70-3.73		Joint	25		0		Stepped	Rough	with many black specks
4.10-4.22	2	Joint	50		0		Stepped	Rough	with many black specks
4.46	1	Joint	0		0		Stepped	Rough	with many black specks
4.60-4.71	2	Joint	60		0		Stepped	Rough	with many black specks
4.80-4.92	3	Joint	90		0				Insipient fracture closed
5.00-5.03	1	Joint	12		0				Insipient fracture closed
5.08	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
5.55-5.65	2	Joint	70		1	Comminuted chalk	Undulating	Rough	with many black specks
5.80-5.90	2	Joint	50		0		Stepped	Rough	with many black specks
5.90-6.15	3	Joint	90		0		Stepped	Rough	with many black specks
6.07	1	Joint	0		0		Stepped	Rough	with many black specks
6.15-6.80	3	Joint	80		0		Undulating	Rough	with many black specks
6.25-6.30	3	Joint	90		0		Stepped	Rough	with many black specks
6.40-6.82	3	Joint	85		0		Undulating	Rough	very closely spaced, with many black specks
6.40-6.67	3	Joint	80		0		Stepped	Rough	very closely spaced, with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71207

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
6.70-6.82	3	Joint	80		0		Stepped	Rough	with many black specks
7.35	1	Joint	0		0		Stepped	Rough	with many black specks
7.40	1	Joint	0		0		Undulating	Rough	with many black specks
7.50-7.56		Joint	45		0		Undulating	Rough	with many black specks
7.62	1	Joint	0		0		Stepped	Rough	with many black specks
7.62-7.74	3	Joint	90		0		Stepped	Rough	with many black specks
7.83	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
7.83-7.97	2	Joint	70		0		Stepped	Rough	with many black specks
8.16	1	Joint	0		0		Stepped	Rough	with many black specks and rare orangish brown surface staining, relic sponge traces (up to 5mm in size)
8.32-8.35	1	Joint	20		0		Undulating	Rough	with many black specks
8.40-8.60	2	Joint	70		0		Undulating	Rough	with occasional black specks
8.84	1	Joint	0		6	Flint	Stepped	Rough	with many black specks, 6mm thick, sheet flint along discontinuity
8.84-9.08	3	Joint	90		0		Stepped	Rough	with many black specks
8.95-9.08	2	Joint	60		0		Stepped	Rough	with many black specks
9.20	1	Joint	8		0		Planar	Smooth	with many black specks
9.21-9.30		Joint	35		0		Undulating	Rough	with many black specks
9.32-9.40		Joint	40		0		Stepped	Rough	with many black specks
9.40	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
9.50-9.62	2	Joint	70		0		Stepped	Rough	with many black specks
9.58	1	Joint	3		0		Undulating	Rough	with many black specks
9.62	1	Joint	0		0		Stepped	Rough	with many black specks
9.68	1	Joint	0		0		Stepped	Rough	with many black specks
9.72	1	Joint	12		0		Planar	Rough	with many black specks
9.76	1	Joint	0		0		Undulating	Rough	with many black specks
9.76-9.80	2	Joint	50		0		Planar	Smooth	with many black specks
9.84-9.90	2	Joint	55		0		Planar	Rough	with many black specks
10.32-10.43	2	Joint	60		0		Planar	Rough	with many black specks and occasional orangish brown surface staining, relic sponge traces (up to 10mm in size)
10.57	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining, relic sponge traces (up to 10mm in size)
10.60-10.80	3	Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
10.70	1	Joint	3		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
10.76-10.78	1	Joint	20		0		Planar	Rough	with many black specks and occasional orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71207

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
11.15-11.50	3	Joint	90		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
11.50-11.60	3	Joint	90		0		Undulating	Rough	with many black specks
11.60	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
11.85-11.96		Joint	45		0		Stepped	Rough	with many black specks
12.22	1	Joint	0		10	Flint	Stepped	Rough	with many black specks sheet flint (upto 10mm thick) along discontinuity
12.50	1	Joint	15		0		Stepped	Rough	with many black specks
12.72-12.75	1	Joint	20		0		Undulating	Rough	with many black specks
12.85-13.00	2	Joint	70		0		Stepped	Rough	with many black specks, incipient fracture, partly open during drilling
13.26	1	Joint	8		1	Comminuted chalk	Planar	Smooth	with many black specks
13.33-13.37		Joint	40		0		Stepped	Rough	with many black specks
13.40-13.43	1	Joint	20		0		Stepped	Rough	with many black specks
13.48-13.57	2	Joint	50		0		Stepped	Rough	with many black specks
13.48-14.00	3	Joint	90		0		Undulating	Rough	with many black specks
14.72	1	Joint	5		0		Stepped	Rough	with many black specks
14.91	1	Joint	12		0		Stepped	Rough	with many black specks
15.00	1	Joint	10		0		Stepped	Rough	with many black specks
15.32	1	Joint	0		0		Stepped	Rough	with many black specks
15.57-15.80	2	Joint	70		0		Stepped	Rough	with many black specks
15.72	1	Joint	0		0		Stepped	Rough	with many black specks
15.80-15.87	2	Joint	50		0		Stepped	Rough	with many black specks
15.95-16.00	3	Joint	90		0		Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71208

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
4.42-4.50		Fracture	40		0		Stepped	Rough	with many black specks
4.45	3	Joint	10		0		Planar	Smooth	with many black specks
4.66-5.20	2	Joint	90		0		Undulating	Rough	with many black specks
4.66	3	Joint	0		0		Stepped	Rough	with many black specks
4.76-5.10	2	Joint	85		0		Undulating	Rough	with many black specks
5.20-5.50	2	Joint	90		0		Undulating	Rough	incipient, partially open with many black specks
5.84	3	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
6.06-6.10	1	Joint	60		0		Stepped	Rough	with many black specks
6.18-6.40	1	Joint	70		0		Planar	Smooth	with many black specks
6.20-6.22		Fracture	30		0		Stepped	Rough	with many black specks
6.40-6.50	2	Joint	80		0		Stepped	Rough	with many black specks
7.54-7.65	2	Joint	90		0		Planar	Smooth	with many black specks
7.54	3	Joint	8		0		Stepped	Rough	with many black specks
7.64-7.70		Fracture	40		0		Undulating	Rough	with many black specks
7.70-7.80		Fracture	50		0		Undulating	Rough	with many black specks
8.03-8.06		Fracture	20		0		Stepped	Rough	with many black specks
8.04-8.13	1	Joint	60		0		Stepped	Rough	with many black specks
8.13-8.28	1	Joint	60		0		Stepped	Rough	with many black specks
8.28-8.50	2	Joint	90		0		Stepped	Rough	with many black specks
8.50-8.62	2	Joint	90		0		Undulating	Rough	incipient, partially open with many black specks
8.62-9.45	2	Joint	85		0		Undulating	Rough	with many black specks
8.79-8.83		Fracture	30		0		Stepped	Rough	with many black specks
9.00	3	Joint	5		1	Comminuted chalk	Planar	Smooth	with many black specks
9.07	3	Joint	3		0		Undulating	Smooth	with many black specks
9.12-9.45	1	Joint	65		0		Undulating	Rough	with many black specks
9.25-9.38	1	Joint	60		0		Planar	Rough	with many black specks
9.53-9.62		Fracture	45		1	Comminuted chalk	Stepped	Rough	with many black specks
9.64-9.72		Fracture	40		0		Undulating	Rough	with many black specks
9.64	3	Joint	10		1	Comminuted chalk	Stepped	Rough	with many black specks
9.95	3	Joint	0		0		Undulating	Smooth	with many black specks
10.47-10.50	1	Joint	10		0		Stepped	Rough	with many black specks
10.62-10.65	1	Joint	10		0		Planar	Smooth	with many black specks
11.25	1	Joint	0		0		Stepped	Rough	with many black specks
11.43-11.50		Fracture	55		1	Comminuted chalk	Stepped	Rough	with many black specks
11.50	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
11.77-11.80	1	Joint	10		0		Stepped	Rough	with many black specks
11.86	1	Joint	9		1	Marl	Planar	Smooth	with many black specks
11.94-12.24		Fracture	90		0		Undulating	Smooth	with many black specks
11.94-12.10	2	Joint	50		0		Undulating	Smooth	with many black specks
12.19-13.22	2	Joint	40		0		Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.

Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71208

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
12.60	1	Joint	8		0		Stepped	Rough	with many black specks
12.67	1	Joint	5		0		Planar	Smooth	with many black specks
13.18-13.22		Fracture	20		0		Stepped	Rough	with many black specks
13.33	1	Joint	0		0		Planar	Smooth	with many black specks
13.48-13.40		Fracture	90		0				incipient, closed
14.05-14.10	2	Joint	50		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional brown surface staining
14.10-14.24	2	Joint	50		0		Stepped	Rough	with many black specks and occasional brown surface staining
14.24-14.35		Fracture	90		0		Undulating	Smooth	with many black specks and occasional brown surface staining
14.35	1	Joint	0		2	Marl	Stepped	Rough	with many black specks and occasional brown surface staining
14.53-14.70		Fracture	60		0		Stepped	Rough	with many black specks
14.70-14.75		Fracture	30		0		Stepped	Rough	with many black specks
14.95-15.35		Fracture	90		0		Undulating	Smooth	with many black specks
14.96-15.00	2	Joint	50		0		Planar	Smooth	with many black specks
15.14-15.25	2	Joint	40		0		Undulating	Rough	with many black specks
15.64	1	Joint	0		0		Planar	Smooth	with many black specks
15.64	1	Joint	0		0		Planar	Smooth	with many black specks
15.72	1	Joint	9		0		Planar	Smooth	with many black specks
15.72	1	Joint	9		0		Planar	Smooth	with many black specks
15.95	1	Joint	0		0		Undulating	Rough	with many black specks
15.95	1	Joint	0		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.

Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71209

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.45-1.52		Joint	45		1	Comminuted chalk	Undulating	Rough	with many black specks
1.61	1	Joint	10		0		Stepped	Rough	with occasional black specks
1.80-1.87	2	Joint	90		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
1.87	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with occasional black specks
2.02	1	Joint	10		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
2.70-2.88	2	Joint	90		0		Undulating	Rough	with many black specks
2.75-2.81		Joint	45		0		Stepped	Rough	with occasional black specks
2.81	1	Joint	10		0		Undulating	Rough	with occasional black specks
2.88	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with rare black specks
2.94-3.08	2	Joint	80		0		Undulating	Rough	with occasional black specks
3.08		Fracture	20		0		Undulating	Rough	with many black specks
3.35	1	Joint	5		0		Undulating	Rough	with rare black specks
3.35-3.50	2	Joint	80		0		Undulating	Rough	with occasional black specks
3.64	1	Joint	0		0		Undulating	Rough	with occasional black specks
3.84-4.00	2	Joint	80		0		Stepped	Rough	with many black specks and rare light brown surface staining
4.10-4.28	2	Joint	90		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.28		Joint	45		0		Stepped	Rough	with occasional black specks and orangish brown surface staining
4.55-4.70	2	Joint	80		0		Stepped	Rough	with occasional black specks
4.75	1	Joint	0		0		Undulating	Rough	with occasional black specks
4.88	1	Joint	0		0		Stepped	Rough	with occasional black specks
5.57	1	Joint	0		0		Undulating	Rough	with occasional black specks
5.73	1	Joint	10		0		Stepped	Rough	with occasional black specks
5.73-5.94	2	Joint	80		0		Undulating	Rough	with many black specks
5.98-6.10	2	Joint	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
6.00-6.14		Fracture	70		0		Stepped	Rough	with many black specks
6.28	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with occasional black specks and grey slickenlines
6.40-6.50		Fracture	70		0		Undulating	Rough	with many black specks
6.63	1	Joint	10		0		Stepped	Rough	with occasional black specks
7.35-7.46	2	Joint	80		0		Undulating	Rough	with many black specks
7.50-7.61	2	Joint	80		0		Undulating	Rough	with many black specks
7.83-7.90		Fracture	20		0		Undulating	Rough	with many black specks and orangish brown surface staining
7.90-8.00		Fracture	45		0		Undulating	Rough	with occasional black specks and rare orangish brown surface

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71209

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									staining
8.15-8.20	3	Joint	70		0		Stepped	Rough	with many black specks
8.70	1	Joint	0		0		Undulating	Rough	with occasional black specks
8.70-8.82	2	Joint	85		0		Undulating	Rough	with many black specks
8.93-9.00	2	Joint	90		0		Stepped	Rough	with many black specks
9.00		Fracture	45		0		Undulating	Rough	with many black specks
9.07	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with occasional black specks
9.08-9.19	3	Joint	70		0		Undulating	Rough	with many black specks
9.19-9.45	2	Joint	80		0		Undulating	Rough	with many black specks
10.25	1	Joint	0		5	Comminuted chalk	Undulating	Rough	with occasional black specks
10.36-10.50	2	Joint	80		0		Undulating	Rough	with many black specks
10.60-10.68	3	Joint	70		0		Undulating	Rough	with many black specks
10.70	1	Joint	5		0		Stepped	Rough	with occasional black specks
11.05	1	Joint	5		0		Stepped	Rough	with many black specks
11.20	1	Joint	0		0		Stepped	Rough	with occasional black specks
11.22-11.35	2	Joint	90		0		Undulating	Rough	with rare black specks
11.40-11.50	2	Joint	90		0		Undulating	Rough	with many black specks
11.75	1	Joint	5		0		Stepped	Rough	with rare black specks
11.75-11.80	2	Joint	80		0		Undulating	Rough	with many black specks
11.80-11.85		Fracture	20		0		Undulating	Rough	with occasional black specks
11.85	1	Joint	0		0		Stepped	Rough	with occasional black specks
12.15-12.27	3	Joint	75		0		Undulating	Rough	with many black specks
12.27-12.35	3	Joint	70		0		Undulating	Rough	with many black specks
12.36	1	Joint	0		0		Undulating	Rough	with many black specks
12.42-12.45		Fracture	20		0		Undulating	Rough	with many black specks
12.45-12.60	3	Joint	70		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
12.60	1	Joint	0		0		Stepped	Rough	with many black specks
12.60-12.80	2	Joint	85		5	Sheet Flint	Undulating	Rough	with many black specks
13.10-13.18	2	Joint	80		0		Undulating	Rough	with many black specks
13.18	1	Joint	0		0		Undulating	Rough	with occasional black specks
13.60	1	Joint	0		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
13.87	1	Joint	5		0		Undulating	Rough	with many black specks
13.90-14.00	2	Joint	90		0		Undulating	Rough	with many black specks
14.05	1	Joint	5		0		Stepped	Rough	with occasional black specks
14.44	1	Joint	0		0		Stepped	Rough	with rare black specks and orangish brown surface staining
14.86	1	Joint	0		0		Undulating	Rough	with occasional black specks
15.06	1	Joint	0		0		Stepped	Rough	with occasional black specks
15.66	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with rare black specks
15.86-16.00	2	Joint	90		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71211

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
4.30-4.90	1	Joint	90		0		Undulating	Rough	very closely speced, with many black specks
4.30-4.50	1	Joint	90		0		Planar	Rough	very closely spaced, with many black specks
4.48		Fracture	10		0		Stepped	Rough	with many black specks
4.50-4.58		Fracture	30		0		Stepped	Rough	with many black specks
4.70-4.90	1	Joint	90		0		Undulating	Rough	with many black specks
5.86-6.00	2	Joint	90		0		Stepped	Rough	with many black specks
6.00-6.20		Fracture	75		0		Undulating	Rough	with many black specks
6.20-6.30	2	Joint	90		0		Stepped	Rough	with many black specks
7.05-7.16	2	Joint	90		0		Stepped	Rough	with many black specks
7.23		Fracture	10		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
7.27-7.32	1	Joint	50		0		Undulating	Rough	with many black specks
7.35-7.46		Fracture	60		0		Planar	Smooth	with many black specks
7.58-7.66	1	Joint	40		0		Stepped	Rough	with many black specks
7.68-7.74	1	Joint	50		0		Planar	Rough	with many black specks
7.72-7.80	1	Joint	50		0		Undulating	Rough	with many black specks
7.76-7.83	1	Joint	50		0		Undulating	Rough	with many black specks
7.80-7.86	1	Joint	50		0		Undulating	Rough	with many black specks
7.80-7.96	2	Joint	90		0		Undulating	Rough	with many black specks
7.86-7.96		Fracture	70		0		Undulating	Rough	with many black specks
8.47-8.60	2	Joint	90		0		Planar	Rough	with many black specks
8.76		Fracture	0		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
8.95		Fracture	0		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
9.98		Fracture	20		0		Stepped	Rough	with many black specks
10.04-10.09		Fracture	30		0		Undulating	Rough	with many black specks
10.28-10.35		Fracture	60		0		Stepped	Rough	with many black specks
10.45-10.54		Fracture	25		1	Comminuted chalk	Stepped	Rough	with many black specks
10.55-10.63	1	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
10.65-10.72		Fracture	65		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
13.20-13.60	2	Joint	90		0		Undulating	Rough	with many black specks
13.90-14.00	2	Joint	80		0		Undulating	Rough	with many black specks
14.44-14.50	1	Joint	45		1	Comminuted chalk	Stepped	Rough	with many black specks
14.68-14.84	2	Joint	80		0		Stepped	Rough	with many black specks and rare orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.

Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71212

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.40	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and much brown surface staining
1.49-1.50	1	Joint	10		0		Undulating	Rough	with many black specks and much brown surface staining
1.50-1.60	2	Joint	60		0		Undulating	Rough	with many black specks and much orangish brown surface staining
1.51-1.57	2	Joint	60		0		Undulating	Rough	with many black specks and much orangish brown surface staining
1.52-1.58	2	Joint	50		0		Undulating	Rough	with many black specks and much orangish brown surface staining
1.62-1.63	1	Joint	20		0		Undulating	Rough	with many black specks and much orangish brown surface staining
1.68	1	Joint	0		0		Planar	Rough	with many black specks and much orangish brown surface staining
1.70	1	Joint	0		0		Stepped	Rough	with many black specks and much orangish brown surface staining
1.80-1.89	2	Joint	60		0		Stepped	Rough	with many black specks and much orangish brown surface staining
1.90	1	Joint	0		0		Undulating	Rough	with many black specks and much orangish brown surface staining
2.00	1	Joint	0		0		Undulating	Rough	with many black specks and much orangish brown surface staining
2.05	1	Joint	0		0		Undulating	Rough	with many black specks and much orangish brown surface staining
2.50-2.82	3	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
2.60-2.69	2	Joint	40		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
2.83-3.00	3	Joint	80		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.00-3.28	3	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
3.20-3.40		Joint	75		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71212

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
3.46-3.50		Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.39-4.43	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
4.50	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.60-4.84	3	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
4.65-4.74	2	Joint	40		1	Comminuted chalk	Planar	Rough	with many black specks
4.74	1	Joint	0		0		Planar	Smooth	with many black specks
4.84-4.95	2	Joint	50		0		Undulating	Rough	
4.95-5.05	3	Joint	90		0		Stepped	Rough	with many black specks
5.15-5.33	3	Joint	90		0		Undulating	Rough	with many black specks, incipient fracture, partly open during drilling
6.19-6.24	4	Joint	90		1	Comminuted chalk	Undulating	Smooth	with many black specks
6.48	1	Joint	10		0		Undulating	Rough	with many black specks
6.58-6.60	1	Joint	15		0		Stepped	Rough	with occasional black specks and orangish brown surface staining
6.75-6.80	1	Joint	15		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
7.00-7.25	4	Joint	90		0		Stepped	Rough	with many black specks
7.40-7.53	3	Joint	60		0		Undulating	Rough	with many black specks
7.53-7.70	4	Joint	85		0		Planar	Smooth	with many black specks
7.70-7.80	2	Joint	30		0		Stepped	Rough	with many black specks
8.00-8.29	4	Joint	90		0		Undulating	Rough	with many black specks
8.64-9.75	4	Joint	90		0		Undulating	Rough	with many black specks
8.67-8.78	3	Joint	70		1	Comminuted chalk	Stepped	Rough	with many black specks
8.82	1	Joint	8		1	Marl	Planar	Smooth	with many black specks
9.14-9.16	1	Joint	15		0		Stepped	Rough	with many black specks
9.40-9.42	1	Joint	20		1	Comminuted chalk	Stepped	Rough	with many black specks
10.00-10.12	3	Joint	60		0				incipient fracture, closed
10.22	1	Joint	8		0		Planar	Smooth	with many black specks
10.35-10.54	3	Joint	70		0		Undulating	Rough	with many black specks
10.50-10.60	2	Joint	30		0		Stepped	Rough	with many black specks, incipient fracture opened during logging
10.59-10.61	1	Joint	20		1	Comminuted chalk	Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71212

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
11.08-11.10	2	Joint	30		0		Planar	Smooth	with many black specks
11.24-11.30	2	Joint	40		0		Stepped	Rough	with occasional orangish brown surface staining
11.56-11.64	2	Joint	40		0		Stepped	Rough	with many black specks
11.75-11.87	3	Joint	50		0		Undulating	Rough	with many black specks
11.86-11.93	2	Joint	40		0		Undulating	Rough	with many black specks
11.86-12.00	2	Joint	30		0		Stepped	Rough	with many black specks
12.00-12.16	4	Joint	90		0		Stepped	Rough	with many black specks
12.20-12.35	2	Joint	40		0		Stepped	Rough	with many black specks
13.20-13.30	3	Joint	50		0		Stepped	Rough	with many black specks
13.90	1	Joint	3		1	Comminuted chalk	Undulating	Rough	with many black specks
14.00-14.06	1	Joint	20		0		Stepped	Rough	with many black specks
14.50	1	Joint	10		0		Undulating	Rough	with many black specks
14.56-14.62	3	Joint	50		0		Stepped	Rough	with many black specks
14.60	1	Joint	15		0		Stepped	Rough	with many black specks
14.60-14.70	3	Joint	50		0		Undulating	Rough	with many black specks
14.70-14.70	3	Joint	50		0		Stepped	Rough	with many black specks
14.74-14.80		Joint	25		0		Undulating	Rough	with many black specks
14.90-15.01	2	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks
15.00-15.06	2	Joint	30		0		Stepped	Rough	with many black specks
15.00-15.10	2	Joint	30		0		Planar	Smooth	with many black specks
15.12-15.16	3	Joint	60		0		Stepped	Rough	with many black specks
15.60	1	Joint	10		0		Planar	Rough	with many black specks
15.60-15.80	3	Joint	70		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.

Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71213

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.77	1	Joint	0		0		Stepped	Rough	with occasional black specks
1.87-1.94	2	Joint	80		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
1.94	1	Joint	0		0		Undulating	Rough	with rare black specks
1.97	1	Joint	0		0		Undulating	Rough	with occasional black specks
2.70	1	Joint	0		0		Undulating	Rough	with rare black specks and much orangish brown surface staining
2.78-2.85		Fracture	70		0		Undulating	Rough	with many black specks
3.04-3.10	2	Joint	90		0		Undulating	Rough	with many black specks
3.16	1	Joint	0		2	Comminuted chalk	Undulating	Rough	with occasional black specks
3.20	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with rare black specks
3.24	1	Joint	0		0		Stepped	Rough	with occasional black specks
3.32-3.38	2	Joint	90		0		Undulating	Rough	with many black specks
3.38	1	Joint	0		0		Stepped	Rough	with rare black specks
3.40-3.60	2	Joint	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
3.50-3.60	2	Joint	90		0		Undulating	Rough	with many black specks
4.13-4.20	2	Joint	80		0		Undulating	Rough	with many black specks
4.25	1	Joint	5		1	Comminuted chalk	Stepped	Rough	with occasional black specks
4.36	1	Joint	0		0		Stepped	Rough	with occasional black specks
4.42-4.52	2	Joint	80		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
4.58	1	Joint	0		0		Undulating	Rough	with occasional black specks
4.65-4.74	2	Joint	75						incipient, closed
4.75-4.80	3	Joint	20		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
4.89	1	Joint	0		0		Stepped	Rough	with occasional black specks
5.00-5.40	3	Joint	30		0		Undulating	Rough	with many black specks
5.07	1	Joint	0		0		Undulating	Rough	with occasional black specks
5.25-5.34	2	Joint	70		0		Stepped	Rough	with occasional black specks
5.50-5.60	2	Joint	80		0		Stepped	Rough	with occasional black specks
5.92	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
6.22	1	Joint	0		2	Comminuted chalk	Stepped	Rough	with occasional black specks
7.15-7.22	3	Joint	30		0		Stepped	Rough	with occasional black specks
7.33-7.40	2	Joint	70		0		Undulating	Rough	with occasional black specks
7.58-7.73	2	Joint	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
7.62-7.73	1	Joint	10		0		Stepped	Rough	with rare black specks
7.77-7.90	2	Joint	80		0		Stepped	Rough	locally undulating with occasional black specks and

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71213

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									rare orangish brown surface staining
8.35	1	Joint	0		0		Undulating	Rough	with many black specks
8.60-8.88		Fracture	90		0		Undulating	Rough	with many black specks
8.60	1	Joint	0		0		Stepped	Rough	with many black specks
8.70-8.76	3	Joint	30		0		Undulating	Rough	with many black specks
8.84-9.00	2	Joint	80		0		Undulating	Rough	with many black specks
8.98-9.03	3	Joint	20		0		Stepped	Rough	with occasional black specks
9.10	1	Joint	10		0		Undulating	Rough	with occasional black specks
9.20	1	Joint	0		0		Undulating	Rough	with many black specks
9.55-9.57	3	Joint	30		0		Stepped	Rough	with rare black specks
10.56-10.72	2	Joint	85		0		Undulating	Rough	with many black specks and orangish brown surface staining
10.63-10.72	3	Joint	30		0		Undulating	Rough	with many black specks and orangish brown surface staining
10.72	1	Joint	10		0		Undulating	Rough	with many black specks and orangish brown surface staining
10.83-11.06	2	Joint	80		0		Stepped	Rough	with occasional black specks and orangish brown surface staining
11.05-11.10		Fracture	45		0		Undulating	Rough	with many black specks
11.35	1	Joint	0		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
11.35-11.50	2	Joint	85		0		Stepped	Rough	with many black specks
11.45	1	Joint	0		0		Undulating	Rough	with occasional black specks
12.25	1	Joint	0		0		Undulating	Rough	with many black specks
12.84	1	Joint	5		0		Undulating	Rough	with many black specks
13.00-13.15	2	Joint	90		0		Undulating	Rough	with occasional black specks
13.15-13.27	2	Joint	80						incipient, closed
13.82	1	Joint	0		0		Undulating	Rough	with occasional black specks
14.17	1	Joint	0		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
14.40	1	Joint	5		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
14.74	1	Joint	0		0		Undulating	Rough	with rare black specks
14.98	1	Joint	0		0		Undulating	Rough	with occasional black specks
15.12-15.17		Fracture	75		0		Stepped	Rough	with occasional black specks
15.25-15.30		Fracture	45		0		Stepped	Rough	with many black specks
15.33-15.35		Fracture	45		0		Undulating	Rough	with many black specks
15.35-15.43		Fracture	45		0		Undulating	Rough	with many black specks
15.55-15.72	2	Joint	80		0		Undulating	Rough	with many black specks
15.66	1	Joint	0		0		Undulating	Rough	with many black specks
15.95	1	Joint	0		0		Stepped	Rough	with occasional black specks
15.95-16.00	2	Joint	90		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71802

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.73-1.79		Fracture	90		0		Stepped	Rough	with occasional black specks
2.30-2.32	1	Joint	20		1	Comminuted chalk	Stepped	Rough	with many black specks
2.30-2.50	2	Joint	90		0		Stepped	Rough	with many black specks
2.50-2.57	3	Joint	40		0		Stepped	Rough	with many black specks
2.85-2.89	1	Joint	15		1	Comminuted chalk	Undulating	Rough	with many black specks
2.89-2.92	3	Joint	30		0		Stepped	Rough	with many black specks
2.92-2.95	1	Joint	15		0		Stepped	Rough	with many black specks
3.15	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
3.15-3.30	2	Joint	90		0		Undulating	Rough	with many black specks
3.31-3.37	1	Joint	20		0		Planar	Smooth	with many black specks
3.80	1	Joint	10		0		Stepped	Rough	with many black specks
3.95-3.97	3	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks
4.02-4.10	3	Joint	30		1	Comminuted chalk	Undulating	Rough	with many black specks
4.10-4.20	2	Joint	90		0		Stepped	Rough	with many black specks
4.20-4.25	4	Joint	75		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
4.28-4.38	4	Joint	70		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.60-4.70	4	Joint	70		0		Undulating	Rough	with many black specks
5.41-5.60	2	Joint	80		0		Undulating	Rough	with many black specks
5.60-5.70	4	Joint	60		0		Stepped	Rough	with many black specks
5.70-5.88	2	Joint	90		0		Stepped	Rough	with many black specks
5.88	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
6.15		Fracture	0		2	Marl	Stepped	Rough	with many black specks and much orangish brown surface staining
6.15-6.30	1	Joint	80				Undulating	Rough	with many black specks and much orangish brown surface staining
6.23-6.32	2	Joint	40		0		Stepped	Rough	with many black specks and much orangish brown surface staining
6.70-6.80	2	Joint	25		0		Planar	Smooth	with many black specks and much orangish brown surface staining
6.80-7.13	1	Joint	90		1	Comminuted chalk	Undulating	Rough	with many black specks and much orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71802

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
7.13-7.36	1	Joint	90		0		Undulating	Rough	with many black specks
7.36-7.50		Fracture	60		1	Comminuted chalk	Undulating	Rough	with many black specks
7.70-7.89	1	Joint	90		0		Stepped	Rough	with many black specks
8.24-8.38	1	Joint	80		0		Undulating	Rough	with many black specks
8.38	2	Joint	0		0		Undulating	Rough	with many black specks
8.48	2	Joint	5		0		Undulating	Rough	with many black specks
8.59	2	Joint	5		0		Stepped	Rough	with many black specks
8.70	2	Joint	0		1	Comminuted chalk	Undulating	Rough	with occasional black specks
8.93-9.06		Fracture	70		0		Planar	Smooth	with many black specks
9.10-9.20	1	Joint	90		0		Stepped	Rough	with many black specks
9.20	2	Joint	0		0		Stepped	Rough	with many black specks
9.77	2	Joint	0		0		Planar	Smooth	with occasional black specks
9.90-10.07	1	Joint	90		0		Undulating	Rough	with many black specks
10.07-10.24		Fracture	70		0		Planar	Smooth	with many black specks
10.29-10.38		Fracture	45		0		Planar	Smooth	with many black specks
10.66	2	Joint	0		1	Marl	Undulating	Rough	with many black specks, very closely spaced
10.82-10.90	1	Joint	90		0		Stepped	Rough	with many black specks, very closely spaced
10.82-10.95	1	Joint	80		0		Stepped	Rough	with many black specks
11.05	2	Joint	0		1	Marl	Stepped	Rough	with many black specks
11.50	2	Joint	0		0		Undulating	Rough	with occasional black specks
11.60	2	Joint	0		0		Stepped	Rough	with many black specks
11.92	2	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
12.00-12.20	1	Joint	80		0		Stepped	Rough	with many black specks
12.20-12.24		Fracture	70		0		Undulating	Rough	with many black specks
13.00-13.15	1	Joint	90		0		Undulating	Rough	with many black specks and much orangish brown surface staining
13.40-13.76	1	Joint	85		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
13.94	2	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
14.22-14.66	1	Joint	90		0		Undulating	Smooth	with many black specks and rare orangish brown surface staining
14.66	2	Joint	0		0		Planar	Smooth	with many black specks
14.80-14.90	1	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
15.13	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
15.18	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71802

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
15.87	1	Joint	5		0		Stepped	Rough	with many black specks
15.91	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
16.14-16.20		Fracture	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
16.20-16.30		Fracture	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
16.63-16.65		Fracture	20		0		Undulating	Rough	with many black specks
16.98-17.00		Fracture	25		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
17.01-17.16	2	Joint	80		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
17.35-17.50	2	Joint	70		0		Stepped	Rough	with many black specks
17.55-17.63	2	Joint	70		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
18.20	1	Joint	0		0		Planar	Smooth	with many black specks and rare orangish brown surface staining
18.23-18.42	2	Joint	80		0		Undulating	Rough	with many black specks
18.42-18.50		Fracture	50		0		Undulating	Rough	with many black specks
18.50-18.63		Fracture	40		0		Stepped	Rough	with many black specks
19.10	1	Joint	3		0		Stepped	Rough	with many black specks
21.00-21.10	3	Joint	50		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
21.36	1	Joint	0		0		Planar	Smooth	with occasional black specks and orangish brown surface staining
21.63-21.82	4	Joint	70		0		Planar	Smooth	incipient (opened during logging) with occasional black specks
21.92-22.03	3	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks
22.00-22.14	3	Joint	40		0		Stepped	Rough	with many black specks
22.18-22.30	4	Joint	60		0		Undulating	Rough	with many black specks
22.53-22.61	2	Joint	90		0		Undulating	Smooth	with many black specks and occasional orangish brown surface staining
24.06-24.13	3	Joint	40		1	Marl	Planar	Smooth	with many black specks
24.13-24.22	3	Joint	50		1	Marl	Stepped	Rough	with many black specks
25.59-25.70	2	Joint	80		0		Undulating	Smooth	with many black specks
26.08-26.40	2	Joint	90		0		Stepped	Rough	with many black specks
27.35	1	Joint	0		1	Marl	Planar	Smooth	with many black specks
27.59	1	Joint	0		1	Marl	Planar	Smooth	with many black specks
28.15	1	Joint	0		0		Planar	Rough	with many black specks and

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71802

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									occasional orangish brown surface staining
28.40	1	Joint	0		0		Stepped	Rough	with many black specks
29.90-30.00	4	Joint	70		0		Planar	Smooth	with many black specks
30.23	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
33.24-33.29	4	Joint	60		1	Marl	Undulating	Rough	with occasional black specks
33.62-33.79	4	Joint	60		1	Marl	Undulating	Rough	with many black specks
34.43	1	Joint	10		0		Planar	Smooth	with many black specks
34.47-34.50		Fracture	20		0		Undulating	Rough	with many black specks
34.94	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
35.90-36.11	4	Joint	70		0		Undulating	Smooth	incipient (opened during logging) with many black specks
36.11-36.85	2	Joint	80		8	Sheet flint	Stepped	Rough	with many black specks
38.13	1	Joint	0		0		Planar	Smooth	with occasional black specks and orangish brown surface staining
41.50	1	Joint	0		1	Marl	Stepped	Rough	with occasional black specks
42.40-42.50	4	Joint	60		1	Marl	Undulating	Smooth	with occasional black specks
42.73	1	Joint	10		1	Marl	Stepped	Rough	with occasional black specks

AGS

Dip recorded as measured perpendicular to the core axis.

Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71803

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
6.89-6.93	1	Joint	15		0		Undulating	Smooth	with many black specks
6.95-7.10	2	Joint	70		0		Undulating	Rough	with many black specks
8.80	1	Joint	0		0		Stepped	Rough	with many black specks
8.80-8.88	2	Joint	70		0		Stepped	Rough	with many black specks
8.93	1	Joint	0		0		Planar	Smooth	with many black specks
10.20-10.30	1	Joint	80		0		Planar	Rough	with many black specks
10.44-10.50		Fracture	60		0		Undulating	Rough	with many black specks
10.50-10.60		Fracture	60		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
10.75-10.90		Fracture	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
10.94-10.96	2	Joint	20		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
11.10-11.24	1	Joint	90		0		Stepped	Rough	with many black specks
13.08	2	Joint	15		0		Stepped	Rough	with many black specks
13.33-13.38	2	Joint	20		0		Planar	Smooth	with many black specks
13.85-14.40	1	Joint	85		0		Undulating	Rough	with many black specks
15.59-15.63		Fracture	30		0		Undulating	Rough	with many black specks
15.90-15.95		Fracture	30		1	Comminuted chalk	Stepped	Rough	with many black specks
16.00-16.03		Fracture	25		1	Comminuted chalk	Stepped	Rough	with many black specks
16.10-16.20	1	Joint	90		0		Planar	Smooth	with many black specks and occasional orangish brown surface staining
16.10	2	Joint	0		0		Stepped	Rough	with many black specks
16.44-16.60		Fracture	50		0		Planar	Smooth	with many black specks
16.87	2	Joint	0		0		Planar	Smooth	with many black specks
17.02-17.09	1	Joint	90		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
17.13-17.19	1	Joint	90		0		Stepped	Rough	incipient (opened during logging) with many black specks
18.35-18.45	2	Joint	70		0		Undulating	Rough	with many black specks
18.72	1	Joint	0		0		Planar	Rough	with many black specks
18.81-18.83		Fracture	20		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
18.85-18.89	1	Joint	15		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
18.92-18.96		Fracture	40		0		Planar	Smooth	with many black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71803

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
18.92	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
20.12	1	Joint	10		0		Planar	Rough	with many black specks
20.14-20.17		Fracture	30		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
20.70	1	Joint	5		0		Stepped	Rough	with many black specks
21.69-21.90	2	Joint	70		0		Undulating	Rough	with many black specks
21.90	1	Joint	0		0		Stepped	Rough	with many black specks
23.50	1	Joint	0		0		Planar	Smooth	with many black specks
24.23-24.29		Fracture	90		0		Planar	Smooth	with many black specks
24.68-24.86		Fracture	90		0		Undulating	Rough	incipient (opened during logging) with rare black specks
24.94	1	Joint	0		0		Stepped	Rough	with many black specks
25.90-26.15		Fracture	90		0		Undulating	Smooth	incipient, partially open with occasional black specks
25.90	1	Joint	0		0		Stepped	Rough	with many black specks
25.91-26.10	2	Joint	60		0		Planar	Smooth	with many black specks
26.15-26.25	2	Joint	70		1	Comminuted chalk	Undulating	Rough	with many black specks
26.50	1	Joint	0		0		Planar	Smooth	with many black specks
27.55-27.70		Fracture	40		1	Marl	Stepped	Rough	with many black specks
28.70	1	Joint	0		1	Comminuted chalk	Planar	Smooth	with many black specks
28.88-28.91		Fracture	20		0		Undulating	Rough	with many black specks
30.30-30.45	2	Joint	70		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
30.53	1	Joint	10		2	Shell fragments (Possibly Gibbythris or Ellipsoidalis)	Stepped	Rough	with many black specks
31.20	1	Joint	10		0		Stepped	Rough	with many black specks
31.95	1	Joint	8		0		Stepped	Rough	with many black specks
32.15-32.23		Fracture	50		1	Marl	Undulating	Rough	with many black specks and occasional orangish brown surface staining
32.30	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
33.35-33.37	1	Joint	10		0		Stepped	Rough	with many black specks
33.53	1	Joint	10		0		Stepped	Rough	with many black specks
35.34-35.46	2	Joint	65		0		Stepped	Rough	with many black specks
35.46-35.48	1	Joint	10		0		Stepped	Rough	with many black specks
36.89-36.95		Fracture	50		0		Undulating	Smooth	with many black specks
36.95-37.20		Fracture	85		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
37.00-37.15	2	Joint	70		0		Stepped	Rough	with many black specks and

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71803

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									occasional orangish brown surface staining
37.77-38.10	2	Joint	70		7	Sheet flint	Stepped	Rough	with many black specks
37.83-39.00		Fracture	40		12	Sheet flint	Stepped	Rough	with many black specks
37.88	1	Joint	8		0		Planar	Rough	with many black specks
39.20-39.56		Fracture	85		0		Undulating	Rough	incipient (opened during logging) with many black specks
39.40-39.43		Fracture	30		0		Stepped	Rough	with many black specks
39.43-39.50	2	Joint	60		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
39.50-39.56	2	Joint	60		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
39.56	1	Joint	0		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
39.56-39.74	2	Joint	70		1	Comminuted chalk	Planar	Smooth	with many black specks and rare orangish brown surface staining
41.60	1	Joint	0		0		Undulating	Smooth	with many black specks and rare orangish brown surface staining
42.48-42.56		Fracture	25		1	Marl	Undulating	Smooth	with many black specks and rare orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71804

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.90-1.99	1	Joint	50		0		Undulating	Rough	with occasional black specks
2.04-2.10	1	Joint	45		0		Undulating	Rough	with occasional black specks and brown surface staining
2.12-2.21	1	Joint	45		0		Undulating	Rough	with occasional black specks
2.89-3.01		Fracture	70		0		Undulating	Rough	with many black specks
4.74-4.85	1	Joint	50		1	Comminuted chalk	Undulating	Rough	with many black specks
5.19-5.26	1	Joint	45		0		Undulating	Rough	with many black specks
5.28-5.50	1	Joint	45		0		Undulating	Rough	with many black specks
5.59-5.69	2	Joint	75		0		Undulating	Rough	with many black specks
5.80		Fracture	5		0		Undulating	Rough	with many black specks
5.95		Fracture	0		0		Undulating	Rough	with many black specks
6.02		Fracture	0		0		Stepped	Rough	with many black specks
6.45-6.61	2	Joint	80		0		Undulating	Rough	with many black specks
6.61-6.66		Fracture	10		0		Undulating	Rough	with many black specks
6.79-6.83	3	Joint	30		0		Undulating	Rough	with many black specks
6.92-7.00		Fracture	60		0		Undulating	Rough	with many black specks
7.15-7.18	3	Joint	25		0		Undulating	Rough	with many black specks
7.16-7.35	2	Joint	85		0		Undulating	Rough	with many black specks
7.21-7.29	3	Joint	25		0		Undulating	Rough	with many black specks
7.29-7.35	2	Joint	80		0		Undulating	Rough	with many black specks
7.62-7.70		Fracture	60		0		Undulating	Rough	with many black specks
7.66-7.73	3	Joint	35		0		Undulating	Rough	with many black specks
7.79-7.85	3	Joint	35		0		Undulating	Rough	with many black specks
7.87-7.95	2	Joint	70		0		Undulating	Rough	with many black specks
8.15-8.22	1	Joint	40		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
8.22-8.42	2	Joint	85		0		Undulating	Rough	with many black specks
8.62-8.67	2	Joint	85		0		Undulating	Rough	with many black specks
8.87-8.93	2	Joint	80		0		Undulating	Rough	with many black specks
8.93-9.01	1	Joint	60		0		Undulating	Rough	with many black specks
9.07-9.31	2	Joint	80		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
9.31-9.35	3	Joint	35		0		Undulating	Rough	with occasional black specks
9.45-9.60	2	Joint	70		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
9.60-9.65	2	Joint	80		0		Undulating	Rough	with many black specks
9.65	1	Joint	0		0		Undulating	Rough	with occasional black specks
9.78	1	Joint	0		0		Undulating	Rough	with occasional black specks
10.38	1	Joint	0		0		Undulating	Rough	with many black specks
10.66	1	Joint	5		0		Undulating	Rough	with many black specks
10.72-10.88		Fracture	60		0		Undulating	Rough	with many black specks
10.72	1	Joint	10		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71804

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
11.14	1	Joint	5		0		Undulating	Rough	with many black specks
11.19	1	Joint	5		0		Undulating	Rough	with many black specks
11.31-11.50		Fracture	65		0		Undulating	Rough	with many black specks
11.50-11.54		Fracture	60		0		Undulating	Rough	with many black specks
11.82-11.90	3	Joint	45		0		Undulating	Rough	with many black specks
12.09	1	Joint	0		0		Undulating	Rough	with many black specks
12.33-12.40	3	Joint	45		0		Undulating	Rough	with many black specks
12.48-12.57	3	Joint	45		0		Undulating	Rough	with many black specks
12.85-12.90	3	Joint	45		0		Undulating	Rough	with many black specks
13.13	1	Joint	10		0		Undulating	Rough	with many black specks
13.63-13.66	1	Joint	15		0		Undulating	Rough	with many black specks
13.66	1	Joint	0		0		Undulating	Rough	with many black specks
14.06-14.14	3	Joint	45		0		Undulating	Rough	with many black specks
14.14-14.50	2	Joint	85		0		Undulating	Rough	with many black specks
14.66-14.88		Fracture	90		0		Undulating	Rough	with many black specks
14.68	1	Joint	0		0		Stepped	Rough	with many black specks
15.60	1	Joint	5		0		Undulating	Rough	with many black specks
15.79-15.82	3	Joint	45		0		Undulating	Rough	with many black specks
16.00-16.08	2	Joint	85		0		Undulating	Rough	with many black specks
16.08	1	Joint	5		0		Undulating	Rough	with many black specks
16.40-16.51	3	Joint	45		0		Undulating	Rough	with many black specks
16.57	1	Joint	5		0		Undulating	Rough	with many black specks
16.94-17.00	2	Joint	85		0		Undulating	Rough	with many black specks
17.22-17.32	3	Joint	45		0		Undulating	Rough	with many black specks
17.32	1	Joint	15		0		Undulating	Rough	with many black specks
17.85	1	Joint	5		0		Undulating	Rough	with many black specks
18.15-18.27	3	Joint	45		0		Undulating	Rough	with many black specks
18.23-18.27	3	Joint	45		0		Undulating	Rough	with many black specks
18.67-18.87	2	Joint	85		0		Undulating	Rough	with many black specks
18.95	1	Joint	0		0		Undulating	Rough	with many black specks
19.21-19.34	3	Joint	45		0		Undulating	Rough	with many black specks
19.67-19.77	3	Joint	45		0		Undulating	Rough	with many black specks
20.16	1	Joint	5		0		Undulating	Rough	with many black specks
20.23	1	Joint	0		0		Undulating	Rough	with many black specks
20.60	1	Joint	10		0		Undulating	Rough	with many black specks and orangish brown surface staining
20.86	1	Joint	0		0		Undulating	Rough	with many black specks
21.32	1	Joint	0		0		Undulating	Rough	with many black specks
21.50-21.70	2	Joint	85		0		Undulating	Rough	with many black specks
21.70	1	Joint	5		0		Undulating	Rough	with many black specks
22.23	1	Joint	0		0		Undulating	Rough	with many black specks
22.34	1	Joint	5		0		Undulating	Rough	with many black specks
22.70	1	Joint	0		1	Marl	Planar	Smooth	with many black specks and grey surface staining
23.00-23.45	2	Joint	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
23.26	1	Joint	0		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
23.96-24.10	1	Joint	80		0		Stepped	Rough	incipient (opened during logging)

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71804

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									with rare orangish brown surface staining
25.48-25.52	1	Joint	10		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
26.26-26.28	1	Joint	15		0		Stepped	Rough	with many black specks
27.38-27.41	1	Joint	20		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
27.74-27.91	3	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
28.50-28.66	3	Joint	50		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
29.30-29.46		Fracture	60		10	Sheet flint	Planar	Rough	with many black specks
29.50-29.66		Fracture	80		1	Marl	Undulating	Rough	with many black specks and rare orangish brown surface staining
29.78-30.00		Fracture	80		0		Planar	Rough	incipient, partially open, with many black specks
30.72	1	Joint	0		0		Stepped	Rough	with occasional orangish brown surface staining
31.50	1	Joint	0		1	Marl	Undulating	Rough	with occasional black specks
32.27-32.30	1	Joint	10		1	Marl	Undulating	Rough	with many black specks
32.32	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
32.69-32.74		Fracture	45		0		Undulating	Rough	with many black specks
33.60	1	Joint	0		0		Undulating	Rough	with many black specks
34.20-34.36	2	Joint	50		1	Marl	Undulating	Rough	with many black specks
34.70-34.86	2	Joint	60		0		Undulating	Rough	with occasional black specks
35.28-35.42	2	Joint	50		0		Stepped	Rough	with many black specks
36.21	1	Joint	10		1	Marl	Stepped	Rough	with many black specks
36.76-36.88	2	Joint	50		1	Marl	Stepped	Rough	with many black specks
39.15	1	Joint	8		1	Marl	Stepped	Rough	with many black specks
41.85-42.08	1	Joint	60		10	Sheet flint	Planar	Smooth	with many black specks
41.98-42.22		Fracture	80		5	Sheet flint	Undulating	Rough	with many black specks
42.03-42.08		Fracture	30		1	Marl	Planar	Rough	with many black specks
42.30-42.36		Fracture	80		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
43.57-43.60		Fracture	15		0		Planar	Rough	with many black specks
44.95-45.10	1	Joint	50		1	Marl	Stepped	Rough	with many black specks
45.47-45.55	1	Joint	50		0		Stepped	Rough	with many black specks
45.53-45.68		Fracture	40		0		Undulating	Smooth	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71806

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
2.50-2.63	2	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
2.63	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks
2.77-2.83	2	Joint	40		0		Stepped	Rough	with occasional black specks
2.88	1	Joint	10		0		Undulating	Rough	with many black specks
3.00-3.10	2	Joint	40		1	Comminuted chalk	Undulating	Rough	with many black specks
3.13-3.24	2	Joint	45		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
3.26-3.31	2	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
4.17-4.25	2	Joint	50		0		Undulating	Rough	with many black specks
4.25	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
4.25-4.53	3	Joint	85		0		Stepped	Rough	with many black specks
4.37-4.43	2	Joint	40		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
4.53-4.57		Fracture	20		0		Undulating	Rough	with many black specks
5.07	1	Joint	10		1	Comminuted chalk	Planar	Rough	with many black specks
5.07-5.31	3	Joint	85		0		Undulating	Rough	with many black specks
5.69	1	Joint	10		0		Undulating	Rough	with many black specks
5.79	1	Joint	10		0		Planar	Rough	with many black specks
5.79-5.95	2	Joint	45		0		Undulating	Rough	with many black specks
6.00	1	Joint	10		0		Stepped	Rough	with many black specks
6.00-6.10	2	Joint	50		0		Undulating	Rough	with many black specks
6.10	1	Joint	10		0		Undulating	Rough	with many black specks
6.33	1	Joint	10		0		Undulating	Rough	with many black specks
6.33-6.45	3	Joint	85		0		Stepped	Rough	with many black specks
6.45	1	Joint	10		0		Undulating	Rough	with many black specks
7.13	1	Joint	10		0		Undulating	Rough	with many black specks
7.67	1	Joint	10		0		Stepped	Rough	with many black specks
7.82	1	Joint	10		0		Planar	Rough	with many black specks
7.93-7.98	2	Joint	40		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
8.23-8.29	2	Joint	40		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
8.23-8.40	3	Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
8.70-8.85	2	Joint	45		0		Undulating	Rough	with many black specks
8.90-8.95	1	Joint	10		0		Undulating	Rough	with occasional black specks
9.01	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
9.01-9.32	3	Joint	85		0		Stepped	Rough	with many black specks
9.11-9.23	2	Joint	50		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71806

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
9.23	1	Joint	10		1	Comminuted chalk	Planar	Rough	with occasional black specks
9.32-9.44	2	Joint	50		0		Stepped	Rough	with many black specks
9.51	1	Joint	10		0		Undulating	Rough	with many black specks and orangish brown surface staining
9.60-9.68	2	Joint	50		0		Undulating	Rough	with many black specks and orangish brown surface staining
9.78-9.84	2	Joint	50		0		Stepped	Rough	with many black specks and orangish brown surface staining
10.24-10.34	2	Joint	40		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
10.63	1	Joint	10		0		Planar	Rough	with rare black specks
10.71-10.76	2	Joint	40		0		Undulating	Rough	with many black specks
10.71-11.06	3	Joint	85		0		Stepped	Rough	with many black specks
10.76-10.88	2	Joint	50		0		Undulating	Rough	with many black specks
11.00-11.20	2	Joint	60		0		Undulating	Rough	with occasional black specks
11.06	1	Joint	10		0		Undulating	Rough	with occasional black specks
11.27-11.40	3	Joint	90		0		Undulating	Rough	with many black specks
11.61	1	Joint	10		0		Planar	Rough	with occasional black specks and rare orangish brown surface staining
11.78	1	Joint	6		0		Undulating	Rough	with rare black specks
12.13	1	Joint	10		0		Undulating	Rough	with rare black specks
12.16	1	Joint	7		1	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
12.25	1	Joint	10		1	Comminuted chalk	Stepped	Rough	with rare black specks and orangish brown surface staining
12.60-12.91	3	Joint	85		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
12.91	1	Joint	10		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
13.00	1	Joint	5		0		Undulating	Rough	with many black specks
13.29	1	Joint	6		0		Undulating	Rough	with rare black specks
13.48	1	Joint	10		0		Planar	Rough	with occasional black specks
13.75	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
13.92	1	Joint	7		0		Planar	Rough	with many black specks and orangish brown surface staining
13.94	1	Joint	5		0		Planar	Rough	with many black specks and orangish brown surface staining
14.20	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
14.30	1	Joint	10		0		Undulating	Rough	with rare black specks
14.38	1	Joint	10		0		Planar	Rough	with rare black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71806

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
14.68	1	Joint	7		0		Undulating	Rough	with many black specks
14.78	1	Joint	10		0		Undulating	Rough	with many black specks
15.16-15.21		Fracture	35		0		Planar	Rough	with many black specks
15.21	1	Joint	10		0		Planar	Rough	with occasional black specks
15.32		Fracture	20		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
15.67	1	Joint	3		0		Undulating	Rough	with many black specks and orangish brown surface staining
16.30	1	Joint	10		0		Planar	Rough	with occasional black specks
16.34-16.37	2	Joint	40		0		Undulating	Rough	with many black specks
16.37-16.49		Fracture	85		0		Undulating	Rough	with many black specks
16.37	1	Joint	8		0		Planar	Rough	with occasional black specks
16.74-16.84	2	Joint	45		0		Stepped	Rough	with many black specks
16.91-16.96		Fracture	20		0		Undulating	Rough	with occasional black specks
16.91	1	Joint	10		0		Undulating	Rough	with many black specks
17.28-17.46		Fracture	85		0		Undulating	Rough	with many black specks
17.28	1	Joint	10		0		Planar	Rough	with many black specks and rare orangish brown surface staining
17.46	1	Joint	10		0		Planar	Rough	with occasional black specks and orangish brown surface staining
17.50	1	Joint	10		0		Undulating	Rough	with many black specks and orangish brown surface staining
17.59	1	Joint	6		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
17.82	1	Joint	10		0		Undulating	Rough	with many black specks and orangish brown surface staining
17.86-17.92	2	Joint	40		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
18.17	1	Joint	10		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
18.17-18.26	2	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
18.71	1	Joint	10		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
18.92-18.97		Fracture	25		0		Planar	Rough	with many black specks and rare orangish brown surface staining
19.05-19.38		Fracture	75		0		Undulating	Striated	with many black specks and rare orangish brown surface staining
19.05	1	Joint	10		0		Undulating	Rough	with many black specks
19.16	1	Joint	10		0		Planar	Striated	with many black specks
19.26	1	Joint	0		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
19.38-19.42	2	Joint	40		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
19.44	1	Joint	10		0		Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71806

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
19.46	2	Joint	40		0		Undulating	Rough	with many black specks
19.53-19.60	2	Joint	45		0		Undulating	Striated	with many black specks and rare grey/light grey surface staining
19.66-19.75	2	Joint	40		0		Planar	Striated	with many black specks and rare grey/light grey surface staining
19.84-19.96	2	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
20.05-20.23	2	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
20.34	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
20.68	1	Joint	10		0		Undulating	Rough	with rare black specks and orangish brown surface staining
20.87	1	Joint	10		0		Undulating	Rough	with rare black specks
21.03	1	Joint	6		0		Undulating	Rough	with occasional black specks
21.40	1	Joint	5		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
21.51	1	Joint	5		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
22.41	1	Joint	10		0		Planar	Smooth	with occasional black specks and rare orangish brown surface staining
22.57	1	Joint	10		0		Undulating	Rough	with many black specks
22.92-22.98	1	Joint	10		0		Undulating	Rough	with rare black specks
23.10	1	Joint	7		0		Stepped	Rough	with occasional black specks
23.10-23.21	2	Joint	40		0		Undulating	Rough	with many black specks
23.30	1	Joint	10		0		Undulating	Rough	with many black specks
23.54	1	Joint	10		0		Undulating	Rough	with many black specks
23.66-23.71	2	Joint	40		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
23.74	1	Joint	10		0		Stepped	Rough	with occasional black specks
24.30		Fracture	25		0		Undulating	Rough	with rare black specks
24.37-24.44		Fracture	30		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
24.52-24.65	2	Joint	40		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
24.65-24.67	1	Joint	10		0		Undulating	Rough	with occasional black specks
24.74-24.84	2	Joint	40		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
24.79	1	Joint	10		0		Undulating	Rough	with many black specks
25.20	1	Joint	10		0		Planar	Rough	with occasional black specks
25.30	1	Joint	10		0		Stepped	Rough	with rare black specks
26.00	1	Joint	10		0		Stepped	Rough	with many black specks
26.11	1	Joint	7		0		Undulating	Rough	with rare black specks and orangish brown surface staining
26.24	1	Joint	10		0		Undulating	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71806

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									and rare orangish brown surface staining
26.50	1	Joint	7		0		Planar	Rough	with occasional black specks
26.59	1	Joint	8		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
26.91	1	Joint	10		0		Undulating	Rough	with occasional black specks
26.97	1	Joint	7		0		Planar	Rough	with rare black specks
27.14	1	Joint	10		0		Planar	Rough	with rare black specks and orangish brown surface staining
27.23	1	Joint	10		0		Undulating	Rough	with rare black specks and orangish brown surface staining
28.10	1	Joint	6		0		Undulating	Rough	with rare black specks
28.22	1	Joint	5		0		Undulating	Rough	with rare black specks
28.51	1	Joint	10		0		Undulating	Rough	with occasional black specks
28.75	1	Joint	5		0		Planar	Rough	with many black specks
29.11	1	Joint	10		0		Stepped	Rough	with rare black specks and orangish brown surface staining
29.69	1	Joint	10		0		Planar	Rough	with many black specks
30.12	1	Joint	10		0		Planar	Smooth	with rare black specks
30.32	1	Joint	6		1	Marl	Planar	Rough	with many black specks
30.58	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
31.00-31.20		Fracture	85		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
31.20	1	Joint	10		0		Undulating	Rough	with occasional black specks
31.56	1	Joint	10		0		Undulating	Rough	with rare black specks and orangish brown surface staining
31.78	1	Joint	10		0		Planar	Rough	with many black specks and orangish brown surface staining
32.00-32.50		Fracture	85		0		Stepped	Rough	with occasional black specks
32.00	1	Joint	5		0		Planar	Rough	with occasional black specks and rare orangish brown and light grey surface staining
32.16	1	Joint	10		0		Undulating	Rough	with occasional black specks
32.33	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare light grey surface staining
32.59-32.70		Fracture	40		0		Undulating	Rough	with occasional black specks
32.73	1	Joint	10		0		Planar	Rough	with many black specks and rare orangish brown surface staining
32.85	1	Joint	10		0		Planar	Smooth	with many black specks and rare orangish brown surface staining
33.18	1	Joint	10		0		Planar	Smooth	with occasional black specks
34.23	1	Joint	5		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
34.63	1	Joint	5		0		Planar	Smooth	with many black specks
35.00	1	Joint	10		0		Undulating	Rough	with many black specks and rare light grey and orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71806

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
35.19-35.50		Fracture	85		0		Undulating	Rough	with occasional black specks
35.35	1	Joint	5		0		Stepped	Rough	with occasional black specks
35.70-35.78		Fracture	85		0		Undulating	Rough	with rare black specks
35.70	1	Joint	10		0		Stepped		with many black specks and rare orangish brown surface staining
35.78	1	Joint	10		0		Undulating	Rough	with occasional black specks
36.05	1	Joint	10		0		Planar	Smooth	with rare black specks and occasional orangish brown surface staining
36.25		Fracture	20		0		Stepped	Rough	with many black specks
36.56	1	Joint	5		0		Planar	Smooth	with many black specks and rare orangish brown surface staining
36.64-36.78		Fracture	25		0		Undulating	Rough	with many black specks
37.10	1	Joint	5		0		Undulating	Rough	
37.28-37.36		Fracture	40		0		Planar	Rough	with many black specks and rare orangish brown surface staining
37.92-38.21		Fracture	45		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
38.23		Fracture	20		0		Planar	Smooth	with occasional black specks and orangish brown surface staining
38.29	1	Joint	10		0		Undulating	Rough	with occasional black specks
39.32	1	Joint	10		0		Undulating	Rough	with occasional black specks
39.73	1	Joint	10		0		Undulating	Rough	with rare black specks
39.87-39.90		Fracture	30		0		Undulating	Rough	with many black specks and orangish brown surface staining
40.14	1	Joint	10		0		Undulating	Rough	with many black specks
40.25	1	Joint	10		1	Shell fragment	Planar	Smooth	with occasional black specks and orangish brown surface staining
40.56	1	Joint	5		0		Planar	Smooth	with occasional black specks
41.04	1	Joint	7		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
41.23-41.37		Fracture	85		2	Shet flint	Undulating	Rough	with many black specks and rare orangish brown surface staining
41.53	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
41.97	1	Joint	10		0		Planar	Smooth	with occasional black specks
42.85	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
43.19	1	Joint	7		0		Undulating	Rough	with rare black specks
43.55	1	Joint	5		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
43.97-44.02		Fracture	40		1	Marl	Planar	Striated	with many black specks and rare

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71806

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									orangish brown and light grey surface staining and slickenlines
44.08	1	Joint	10		0		Undulating	Rough	with many black specks
44.50	1	Joint	8		0		Undulating	Rough	with many black specks
44.64	1	Joint	5		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
45.25	1	Joint	5		0		Planar	Rough	with many black specks
45.73	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
45.90-46.00		Fracture	45		0		Planar	Rough	with many black specks and rare orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71807

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
3.10-3.14		Fracture	30		0		Planar	Rough	with many black specks
3.16-3.18		Fracture	35		1	Comminuted chalk	Undulating	Rough	with many black specks
3.21-3.23		Fracture	35		0		Undulating	Rough	with many black specks
3.23-3.25		Fracture	33		1	Comminuted chalk	Planar	Rough	with many black specks
4.25	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
4.25-4.39	3	Joint	85		0		Undulating	Rough	locally stepped, with many black specks
4.63-4.75	3	Joint	85						incipient, closed
4.75	1	Joint	10		0		Stepped	Rough	with occasional black specks
4.90-5.09	3	Joint	85		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
5.00	1	Joint	10		0		Undulating	Rough	with many black specks
5.78-5.88	2	Joint	40		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
5.88-5.96	2	Joint	50		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
6.01-6.07	2	Joint	45		1	Comminuted chalk	Undulating	Rough	with many black specks
6.07	1	Joint	5		0		Planar	Rough	with many black specks
6.08-6.14	2	Joint	40		1	Comminuted chalk	Undulating	Rough	with many black specks
6.14-6.23	2	Joint	45		0		Stepped	Rough	with many black specks
6.23-6.38	2	Joint	50		0		Undulating	Rough	with many black specks
6.38-6.63	3	Joint	85		0		Undulating	Rough	incipient, partially open. Locally stepped with many black specks
6.63	2	Joint	40		1	Comminuted chalk	Undulating	Rough	with many black specks
6.68	2	Joint	45		1	Comminuted chalk	Undulating	Rough	with many black specks
7.00	2	Joint	40		0		Stepped	Rough	with many black specks
7.15	1	Joint	10		0		Undulating	Rough	with many black specks
7.45	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
7.45-7.62	2	Joint	45		3	Comminuted chalk and grey marl	Stepped	Rough	with many black specks and greenish grey and orangish brown surface staining
8.09	1	Joint	6		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
8.09-8.50	3	Joint	85		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
8.19	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
9.14	1	Joint	6		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71807

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
9.14-9.29	3	Joint	85		0		Stepped	Rough	with many black specks
10.08-10.24	1	Joint	50		0		Planar	Rough	with many black specks
10.41	2	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks
10.48-10.56	1	Joint	40		0		Undulating	Rough	with many black specks
10.48-10.60	1	Joint	45		0		Undulating	Rough	with many black specks
10.48	2	Joint	10		0		Undulating	Rough	with many black specks
10.66-10.85	1	Joint	50		0		Planar	Rough	with many black specks
10.74-10.85	1	Joint	50		0		Undulating	Rough	with many black specks
10.85-10.97	1	Joint	40		0		Undulating	Rough	with occasional black specks
11.63	2	Joint	10		0		Planar	Rough	with occasional black specks
11.73-11.90	1	Joint	40		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
11.73	2	Joint	10		1	Comminuted chalk	Undulating	Rough	with rare black specks and orangish brown surface staining
11.75-12.08	1	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
12.25-12.38	1	Joint	50		0		Undulating	Rough	with occasional black specks
12.25	2	Joint	5		0		Planar	Rough	with many black specks
13.15	2	Joint	10		0		Planar	Smooth	with rare black specks
13.49	2	Joint	5		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
13.49-13.82	3	Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
13.87-14.50	3	Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
14.20	2	Joint	10		0		Undulating	Rough	with rare black specks
14.27	1	Joint	40		0		Undulating	Rough	with many black specks
14.70	2	Joint	10		0		Undulating	Rough	with many black specks
14.83	2	Joint	10		0		Undulating	Rough	with many black specks
14.87	2	Joint	20		0		Undulating	Rough	locally stepped with occasional black specks and rare orangish brown surface staining
14.95-15.19	3	Joint	85						incipient, closed
16.08	2	Joint	8		0		Planar	Rough	with many black specks
16.27	2	Joint	10		0		Undulating	Rough	with many black specks
16.64	2	Joint	10		0		Planar	Rough	with many black specks
16.83-16.93	1	Joint	40		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
16.83	2	Joint	5		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
17.68	1	Joint	10		0		Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71807

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
17.82	1	Joint	10		0		Undulating	Rough	with many black specks
18.00	1	Joint	10		0		Undulating	Rough	with occasional black specks
18.22	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
18.32	1	Joint	10		0		Undulating	Rough	with rare black specks
18.40-18.95	2	Joint	85		0		Stepped	Rough	incipient, partially open with many black specks and rare orangish brown surface staining
18.76-18.86	3	Joint	40		0		Undulating	Rough	with rare black specks
19.47	1	Joint	10		0		Planar	Rough	with many black specks and rare orangish brown surface staining
19.62	1	Joint	10		0		Undulating	Rough	with occasional black specks
20.08	1	Joint	10		0		Stepped	Rough	with occasional black specks
20.29	1	Joint	3		0		Undulating	Rough	with occasional black specks
20.57	1	Joint	3		0		Planar	Rough	with occasional black specks
20.66	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
21.08-21.16	3	Joint	40		0		Undulating	Rough	with many black specks
21.16	1	Joint	10		0		Undulating	Rough	with many black specks
21.38	1	Joint	8		0		Undulating	Rough	with many black specks
21.56	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
21.78	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
22.11	1	Joint	6		0		Planar	Rough	with occasional black specks
22.11-22.20	2	Joint	85						incipient, closed
22.44	1	Joint	7		1	Comminuted chalk	Undulating	Rough	with occasional black specks and orangish brown surface staining
22.81	1	Joint	10		0		Undulating	Rough	with many black specks
23.29	1	Joint	8		0		Undulating	Rough	with many black specks
23.37	1	Joint	10		0		Undulating	Rough	with many black specks
23.37-23.50	2	Joint	85		0		Stepped	Rough	incipient, partially open with many black specks
23.42	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
23.63-23.72	3	Joint	40		0		Undulating	Rough	with many black specks
23.72	1	Joint	3		0		Undulating	Rough	with many black specks
23.72-24.39	2	Joint	85		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
23.96	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks
24.09	1	Joint	6		0		Undulating	Rough	with occasional black specks
24.39	1	Joint	10		0		Undulating	Rough	with many black specks
24.62	1	Joint	3		0		Undulating	Rough	with occasional black specks
24.62-24.76	3	Joint	30		0		Planar	Rough	with occasional black specks and rare orangish brown surface

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71807

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									staining
24.96	1	Joint	10		0		Undulating	Rough	with many black specks
25.09	1	Joint	10		0		Undulating	Rough	with many black specks
25.09-25.28	3	Joint	50						incipient, closed
25.74	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
26.00-26.50	2	Joint	85		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
26.00	3	Joint	40		0		Planar	Rough	with many black specks
26.30	1	Joint	10		0		Undulating	Rough	with many black specks
26.62	1	Joint	10		0		Planar	Smooth	with occasional black specks
26.67-26.81	3	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
26.91-26.98	3	Joint	40		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
27.10	1	Joint	4		1	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
27.21-27.35	3	Joint	45		0		Undulating	Rough	with many black specks and orangish brown surface staining
27.35	3	Joint	40		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
27.57-27.70	3	Joint	50		0		Undulating	Rough	with many black specks
27.70-27.80	3	Joint	40		0		Undulating	Rough	with many black specks
27.82-27.90	3	Joint	45		0		Undulating	Rough	with many black specks
27.92	1	Joint	5		0		Undulating	Rough	with many black specks
28.10	1	Joint	10		0		Undulating	Rough	with occasional black specks
28.31	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with rare black specks
28.38	1	Joint	6		0		Planar	Rough	with many black specks and rare orangish brown surface staining
28.50-28.57	3	Joint	45		1	Grey marl	Undulating	Rough	with many black specks and occasional orangish brown surface staining
28.57	1	Joint	6		1	Grey marl	Undulating	Rough	with many black specks and occasional orangish brown surface staining
28.57-28.73	3	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
28.91-29.12	3	Joint	45						incipient, closed
29.12	1	Joint	10		0		Stepped	Rough	with rare black specks
29.63	1	Joint	5		0		Undulating	Rough	with many black specks
29.63-29.83	3	Joint	85		0		Undulating	Striated	with many black specks
29.66	1	Joint	3		0		Planar	Rough	with many black specks
30.00-30.10	2	Joint	50		0		Undulating	Rough	with many black specks
30.00-30.13	2	Joint	40		0		Undulating	Rough	with many black specks and rare orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71807

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
30.10-30.31	3	Joint	85		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
30.31-30.39	2	Joint	50		0		Undulating	Rough	with many black specks
30.58-30.68	2	Joint	50		0		Undulating	Rough	with many black specks
30.68-30.72	2	Joint	40		0		Undulating	Rough	with many black specks
30.76-30.80		Fracture	20		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
30.90-31.00	2	Joint	40		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
31.00	1	Joint	5		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
31.15	1	Joint	10		0		Undulating	Rough	with many black specks
31.20	1	Joint	6		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
31.20-31.27	2	Joint	40		0		Undulating	Rough	with many black specks
31.43-31.53	2	Joint	50		0		Undulating	Rough	with many black specks
31.55	1	Joint	3		0		Planar	Rough	with many black specks
31.58	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
31.64-31.78	2	Joint	40		0		Undulating	Rough	with many black specks
32.50-32.57	2	Joint	40						incipient, closed
32.61-32.64	2	Joint	40						incipient, closed
32.64-32.69	2	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
32.83-32.91	2	Joint	40		0		Planar	Smooth	with many black specks
33.05-33.13	2	Joint	50		0		Undulating	Rough	with many black specks
33.13-33.30	2	Joint	45		0		Undulating	Rough	with many black specks
33.24	1	Joint	10		0		Stepped	Rough	with many black specks
33.32	1	Joint	10		0		Undulating	Rough	with many black specks
33.40-33.52	2	Joint	40		0		Undulating	Rough	with many black specks
33.75-33.88	2	Joint	40		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
34.00-34.07	2	Joint	40		0		Undulating	Rough	with many black specks
34.00-34.21	4	Joint	70		0		Stepped	Rough	with many black specks
34.07-34.21	4	Joint	70		0		Undulating	Rough	with many black specks
34.23	1	Joint	10		0		Undulating	Rough	with occasional black specks
34.32	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
34.56-34.83	4	Joint	70		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
34.83-34.88	2	Joint	40		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
34.88-35.00	2	Joint	50		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
35.00-35.19	4	Joint	70		0		Undulating	Rough	with many black specks
35.19	1	Joint	10		0		Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71807

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
35.50-35.71	4	Joint	70		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
35.71-35.74	2	Joint	40		0		Undulating	Rough	with many black specks
35.77-35.88	4	Joint	70		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
35.86-35.91	4	Joint	65		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
35.91-35.98	2	Joint	50		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
36.07-36.12	2	Joint	40		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
36.16-36.45	3	Joint	85		0		Stepped	Rough	with many black specks
36.25	1	Joint	10		0		Undulating	Rough	with occasional black specks
36.25-36.35	2	Joint	45		0		Stepped	Rough	with many black specks
36.32-36.40	2	Joint	50		0		Undulating	Rough	with many black specks
36.45	1	Joint	10		0		Undulating	Rough	with occasional black specks
36.45-36.62	2	Joint	50		0		Undulating	Rough	with many black specks
37.06-37.17	3	Joint	85		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
37.43	1	Joint	7		0		Undulating	Rough	with occasional black specks
37.43-37.63	3	Joint	87		0		Stepped	Rough	with many black specks
37.63	1	Joint	10		0		Planar	Rough	with occasional black specks
37.63-37.78	4	Joint	70		0		Undulating	Rough	with many black specks
37.78-37.98	3	Joint	85		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
38.08-38.19	3	Joint	83		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
38.61-38.90	2	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
38.90	1	Joint	5		0		Undulating	Rough	with many black specks
39.57	1	Joint	10		0		Undulating	Rough	with many black specks
39.61	1	Joint	10		0		Undulating	Rough	with many black specks
39.78	1	Joint	10		0		Undulating	Rough	with many black specks
40.18	1	Joint	5		0		Undulating	Rough	with many black specks
40.60	1	Joint	6		0		Planar	Rough	with many black specks and rare orangish brown surface staining
40.76	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
40.76-40.90	2	Joint	50		0		Undulating	Rough	with many black specks
40.90	1	Joint	6		0		Undulating	Rough	with many black specks
41.16-41.26	2	Joint	40		0		Undulating	Rough	with many black specks
41.26	1	Joint	10		0		Undulating	Rough	with occasional black specks
41.69-42.36		Fracture	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
41.87	1	Joint	20		0		Stepped	Rough	with many black specks
42.13	1	Joint	10		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71807

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
42.15-42.23	2	Joint	40		0		Undulating	Rough	with occasional black specks
42.42	1	Joint	10				Undulating	Rough	with occasional black specks
42.52-42.74		Fracture	70		0		Undulating	Rough	with many black specks
42.62	1	Joint	10		0		Stepped	Rough	with occasional black specks
43.15	1	Joint	10		0		Undulating	Rough	with many black specks
43.27	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
43.43	1	Joint	10		2	Shell	Planar	Smooth	with rare black specks and much grey surface staining. Possibly Platyceramus
43.43-43.56	2	Joint	45		0		Undulating	Striated	with many black specks
43.80-43.86	2	Joint	40		0		Planar	Striated	with many black specks
43.91-43.97		Fracture	30		0		Undulating	Striated	with many black specks, occasional greenish grey surface staining and slicknelines
43.91-43.97		Fracture	30		0		Undulating	Striated	slickensided with many black specks and occasional greenish grey staining
43.91	1	Joint	10		0		Stepped	Rough	with many black specks
43.99-44.08	2	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
44.19-44.28	2	Joint	45		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
44.61-44.74	2	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown and light grey surface staining
45.00	1	Joint	10		0		Planar	Rough	with many black specks
45.00-45.09	2	Joint	50		0		Undulating	Rough	with many black specks
45.11-45.19	2	Joint	43		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
45.21-45.28	2	Joint	47		0		Undulating	Rough	with many black specks and rare light grey surface staining
45.41-46.00		Fracture	85		0		Stepped	Rough	with many black specks and rare orangish brown and grey surface staining
45.41	1	Joint	12		0		Undulating	Rough	with many black specks
45.46	1	Joint	7		0		Undulating	Rough	with occasional black specks
45.49-45.54	2	Joint	30		0		Stepped	Rough	with many black specks
45.61	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
45.76	1	Joint	10		0		Planar	Rough	with many black specks and rare grey surface staining
45.81	2	Joint	40		0		Undulating	Rough	with many black specks and rare orangish brown and grey surface staining
45.95-46.00	2	Joint	42		0		Undulating	Rough	with occasional black specks and rare orangish brown and grey surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71808

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
7.40-7.60		Fracture	70		1	Comminuted chalk	Stepped	Rough	with many black specks
10.30-10.42	2	Joint	90		0		Stepped	Rough	incipient, partially open with occasional black specks
10.47-10.55		Fracture	50		1	Comminuted chalk	Undulating	Rough	with many black specks
10.52-10.60	1	Joint	30		0		Stepped	Rough	incipient (opened during logging) with many black specks
10.56-10.58	1	Joint	20		0		Stepped	Rough	incipient (opened during logging) with many black specks
10.62-10.73	1	Joint	40		1	Comminuted chalk	Undulating	Smooth	with many black specks
10.76-10.78	1	Joint	35		2	Comminuted chalk	Stepped	Rough	with many black specks
10.90-11.00		Fracture	70		1	Comminuted chalk	Stepped	Rough	with many black specks
10.90-11.00	2	Joint	90		1	Comminuted chalk	Undulating	Smooth	with many black specks
11.00-11.10	2	Joint	80		2	Comminuted chalk	Stepped	Rough	with many black specks
11.20-11.37	2	Joint	80		1	Comminuted chalk	Planar	Smooth	with many black specks
11.41-11.46	1	Joint	40		1	Comminuted chalk	Planar	Smooth	with many black specks and occasional orangish brown surface staining
11.70-11.85		Fracture	70		2	Comminuted chalk	Stepped	Rough	with many black specks
11.85-12.14	2	Joint	90		1	Comminuted chalk	Undulating	Rough	with many black specks
12.14-12.20	1	Joint	40		0		Undulating	Rough	with occasional black specks and orangish brown surface staining, possibly sponge
12.30		Fracture	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
12.84		Fracture	0		1	Comminuted chalk	Planar	Smooth	with many black specks
12.88-13.07		Fracture	60		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
12.97-13.00	1	Joint	20		0		Planar	Smooth	Insipient opened during logging
13.01-13.06	1	Joint	20		1	Comminuted chalk	Undulating	Smooth	with many black specks
13.05-13.14		Fracture	50		1	Comminuted chalk	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
13.15-13.17	1	Joint	30		1	Comminuted chalk	Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71808

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
13.20-13.24	1	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks
13.24-13.29		Fracture	50		1	Comminuted chalk	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
13.30-13.42	2	Joint	90		0		Stepped	Rough	with many black specks
13.52		Fracture	5		0		Planar	Smooth	with many black specks and occasional orangish brown surface staining
13.52-13.60		Fracture	60		0		Stepped	Rough	with many black specks
13.60-13.70		Fracture	70		0		Stepped	Rough	with many black specks
17.00		Fracture	5		2	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
17.16-17.20	1	Joint	40		1	Comminuted chalk	Undulating	Smooth	with occasional black specks and much orangish brown surface staining, possibly sponge fossils
17.23-17.26	1	Joint	40		1	Comminuted chalk	Planar	Smooth	with many black specks and occasional orangish brown surface staining
17.31-17.34	1	Joint	40		1	Comminuted chalk	Planar	Smooth	with many black specks and occasional orangish brown surface staining
17.38-17.42	1	Joint	40		1	Comminuted chalk	Planar	Smooth	with many black specks and occasional orangish brown surface staining
17.45-17.57	1	Joint	45		2	Comminuted chalk	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
17.66-17.72	1	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks
17.93		Fracture	7		2	Comminuted chalk	Stepped	Rough	with many black specks
18.00-18.04	1	Joint	30		0		Planar	Smooth	with many black specks
18.82-18.92		Fracture	70		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
18.94-19.03	1	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks
18.96-19.05	1	Joint	40		1	Comminuted chalk	Undulating	Rough	with many black specks
19.29-19.32		Fracture	20		1	Comminuted chalk	Stepped	Rough	with many black specks and rare orangish brown surface staining
19.30-19.37	1	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
19.49-19.51		Fracture	10		0		Stepped	Rough	with many black specks
19.81-19.86		Fracture	20		1	Comminuted	Planar	Smooth	with many black specks and

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71808

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
						chalk			occasional orangish brown surface staining
21.19-21.23	1	Joint	30		0		Stepped	Rough	with many black specks
21.91-21.94	1	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
22.09-22.11	1	Joint	30		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
22.76-22.80	1	Joint	30		0		Planar	Smooth	with many black specks
22.85-22.90	1	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
22.96-23.00		Fracture	25		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
23.54-22.76		Fracture	90		1	Comminuted chalk	Undulating	Smooth	with occasional black specks
23.85-23.95	1	Joint	50		1	Comminuted chalk	Stepped	Rough	with many black specks
23.99		Fracture	0		1	Comminuted chalk	Stepped	Rough	with occasional black specks
24.00		Fracture	0		1	Comminuted chalk	Stepped	Rough	with many black specks
24.08-24.18	1	Joint	40		1	Comminuted chalk	Planar	Smooth	with many black specks and occasional orangish brown surface staining
25.18-25.20		Fracture	10		1	Comminuted chalk	Planar	Smooth	with occasional black specks
25.36-25.38	1	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks
25.39-25.50	1	Joint	40		1	Comminuted chalk	Planar	Smooth	with many black specks
25.90-26.12		Fracture	90		0		Undulating	Rough	with many black specks
26.44-26.46	1	Joint	40		0		Planar	Smooth	incipient (opened during logging) with occasional black specks
26.52-26.62		Fracture	60		1	Comminuted chalk	Undulating	Smooth	with many black specks
26.55-26.74		Fracture	70		1	Comminuted chalk	Undulating	Smooth	with many black specks
26.92-27.13		Fracture	90		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining, possible sponge fossils
27.13-27.18	1	Joint	40		1	Comminuted chalk	Planar	Smooth	with many black specks and occasional orangish brown surface staining
27.30-27.48		Fracture	60		1	Comminuted chalk	Undulating	Smooth	with many black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71808

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
28.23-28.30		Fracture	30		1	Marl	Planar	Smooth	with many black specks
28.42	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
28.53	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
28.62	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
28.74-28.89		Fracture	40		1	Marl	Undulating	Rough	with many black specks
28.74	1	Joint	10		1	Marl	Stepped	Rough	with many black specks
29.40	1	Joint	0		1	Comminuted chalk	Planar	Smooth	with occasional orangish brown surface staining
29.45	1	Joint	10		0		Stepped	Rough	Insipient opened during logging
29.47	1	Joint	10		0		Planar	Smooth	Insipient opened during logging
29.50	1	Joint	10		0		Stepped	Rough	Insipient opened during logging
29.77-29.96		Fracture	70		1	Comminuted chalk	Stepped	Rough	with many black specks
30.20-30.31		Fracture	90		0		Stepped	Rough	with many black specks
30.67	1	Joint	0		1	Marl	Planar	Smooth	with many black specks
30.97	1	Joint	0		1	Marl	Planar	Smooth	with many black specks
31.06	1	Joint	0		1	Marl	Undulating	Smooth	with many black specks
31.09-31.20		Fracture	60		1	Marl	Undulating	Rough	with many black specks
32.70	1	Joint	0		2	Comminuted chalk	Stepped	Rough	with many black specks
32.90	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
33.50	1	Joint	0		0		Stepped	Rough	with occasional orangish brown surface staining
34.27	1	Joint	0		2	Marl	Stepped	Rough	with many black specks
34.88	1	Joint	5		1	Marl	Undulating	Rough	with many black specks
35.83-35.90		Fracture	40		1	Comminuted chalk	Stepped	Rough	with rare black specks
36.01-36.10		Fracture	30		0		Undulating	Smooth	with occasional black specks
37.08-37.23		Fracture	50		1	Marl	Undulating	Smooth	with many black specks
37.39-37.43		Fracture	50		1	Marl	Stepped	Rough	with many black specks
38.00	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
38.10	1	Joint	0		2	Shell fragment	Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71810

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
2.20-2.31		Fracture	80		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
2.26	1	Joint	5		0		Undulating	Rough	with rare black specks and orangish brown surface staining
2.33	1	Joint	10		0		Undulating	Rough	with rare black specks and occasional orangish brown surface staining
2.38-2.57		Fracture	85		0		Undulating	Rough	with rare black specks and many orangish brown surface staining
2.38	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
2.42	1	Joint	0		0		Undulating	Rough	with rare black specks and much orangish brown surface staining
2.61-2.64		Fracture	35		0		Undulating	Rough	with rare black specks and much orangish brown surface staining
2.64	1	Joint	5		0		Undulating	Rough	with rare black specks and much orangish brown surface staining
2.68	1	Joint	0		0		Undulating	Rough	with rare black specks and much orangish brown surface staining
6.50-6.64	3	Joint	85		0		Undulating	Rough	with many black specks
6.64-6.70	2	Joint	45		0		Undulating	Rough	with many black specks
6.64-6.77	3	Joint	70		0		Undulating	Rough	with many black specks
6.82	1	Joint	5		0		Undulating	Rough	with many black specks
6.82-6.89	2	Joint	45		0		Undulating	Rough	with many black specks
6.90	1	Joint	5		0		Undulating	Rough	with many black specks
6.92-7.03	3	Joint	75		0		Undulating	Rough	with many black specks
7.13-7.16	2	Joint	40		0		Undulating	Rough	with many black specks
7.19-7.27	2	Joint	40		0		Undulating	Rough	with many black specks
7.26-7.33	2	Joint	40		0		Undulating	Rough	with many black specks
7.60-7.70	3	Joint	70		0		Undulating	Rough	with many black specks
7.70	1	Joint	5		0		Undulating	Rough	with many black specks
7.78-7.90	3	Joint	85		0		Undulating	Rough	with many black specks
8.21-8.24	2	Joint	45		0		Undulating	Rough	with many black specks
8.24-8.29	2	Joint	45		0		Undulating	Rough	with many black specks
8.40-8.46	2	Joint	45		0		Undulating	Rough	with many black specks
8.46	1	Joint	5		0		Undulating	Rough	with many black specks
8.46-8.66	3	Joint	85		0		Undulating	Rough	with many black specks
8.58-8.66	1	Joint	5		0		Undulating	Rough	with many black specks
8.98-9.12	3	Joint	85		0		Undulating	Rough	with many black specks
9.10	1	Joint	5		0		Undulating	Rough	with many black specks
9.12	1	Joint	5		0		Undulating	Rough	with many black specks
9.65-9.73	3	Joint	70		0		Undulating	Rough	with many black specks
9.73	1	Joint	0		0		Undulating	Rough	with many black specks
9.73-9.91	3	Joint	85		0		Undulating	Rough	with many black specks
9.91	1	Joint	5		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71810

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
9.96-10.02	2	Joint	45		0		Undulating	Rough	with many black specks
10.05	1	Joint	5		0		Undulating	Rough	with many black specks
10.13-10.19	2	Joint	45		0		Undulating	Rough	with many black specks
10.19-10.50	3	Joint	85		0		Undulating	Rough	with many black specks
10.50-10.88	2	Joint	40		0		Undulating	Rough	with many black specks
10.56	1	Joint	5		0		Undulating	Rough	with many black specks
10.62	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks
10.67	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
11.00-11.10	3	Joint	80		0		Undulating	Rough	with many black specks
11.26-11.30	2	Joint	45		0		Undulating	Rough	with many black specks
11.42-11.47	2	Joint	45		0		Undulating	Rough	with many black specks
11.56	1	Joint	10		0		Undulating	Rough	with many black specks
12.56-12.65	2	Joint	45		0		Undulating	Rough	with many black specks
12.68-12.75	2	Joint	45		0		Undulating	Rough	with many black specks
12.88	1	Joint	5		0		Undulating	Rough	with many black specks
14.36-14.39	2	Joint	45		0		Undulating	Rough	with many black specks
14.38-14.42	2	Joint	45		0		Undulating	Rough	with many black specks
14.43-14.52	2	Joint	45		0		Undulating	Rough	with many black specks
14.46-14.55	2	Joint	45		0		Undulating	Rough	with many black specks
14.56	1	Joint	5		0		Undulating	Rough	with many black specks
14.56-14.63	3	Joint	85		0		Undulating	Rough	with many black specks
14.80-14.82		Fracture	30		0		Undulating	Rough	with many black specks
14.90-14.94	2	Joint	45		0		Undulating	Rough	with many black specks
14.94-15.01	3	Joint	70		0		Undulating	Rough	with many black specks
15.86	1	Joint	0		0		Undulating	Rough	with many black specks
16.03	1	Joint	5		0		Undulating	Rough	with many black specks
16.30	1	Joint	5		0		Undulating	Rough	with many black specks
17.00-17.32	3	Joint	70		0		Undulating	Rough	with many black specks
17.32	1	Joint	0		0		Undulating	Rough	with many black specks
17.32-17.37	3	Joint	85		0		Undulating	Rough	with many black specks
17.65-17.64	1	Joint	15		0		Undulating	Rough	with many black specks
17.74	1	Joint	15		0		Undulating	Rough	with many black specks and occasional grey surface staining
17.74-17.90	3	Joint	85		0		Undulating	Rough	with many black specks
17.90-17.95	2	Joint	45		0		Undulating	Rough	with many black specks
18.00	1	Joint	0		0		Undulating	Rough	with many black specks
18.15	1	Joint	15		0		Undulating	Rough	with many black specks
18.79	1	Joint	5		0		Undulating	Rough	with occasional black specks
18.86	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
19.01-19.10	3	Joint	85		0		Undulating	Rough	with many black specks
19.10	1	Joint	5		0		Undulating	Rough	with many black specks
19.16	1	Joint	5		0		Undulating	Rough	with many black specks
19.16-19.25	3	Joint	85		0		Undulating	Rough	with many black specks
19.25	1	Joint	0		0		Undulating	Rough	with many black specks
19.65	1	Joint	5		0		Undulating	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71810

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
20.20	1	Joint	5		0		Undulating	Rough	with many black specks
20.41	1	Joint	15		0		Undulating	Rough	with many black specks
20.41-20.44	3	Joint	70		0		Undulating	Rough	with many black specks
20.56-20.80	3	Joint	85		0		Undulating	Rough	with many black specks
21.04	1	Joint	5		0		Undulating	Rough	with many black specks
21.41-20.56	1	Joint	5		0		Undulating	Rough	with many black specks
21.86	1	Joint	10		0		Undulating	Rough	with many black specks
21.95	1	Joint	5		0		Undulating	Rough	with many black specks
22.14	1	Joint	5		0		Undulating	Rough	with many black specks
22.30-22.37	2	Joint	45		0		Undulating	Rough	with many black specks
22.40-22.44	2	Joint	45		0		Undulating	Rough	with many black specks
23.00-23.23	3	Joint	85		0		Undulating	Rough	with many black specks
23.15	1	Joint	5		0		Undulating	Rough	with many black specks
23.19	1	Joint	5		0		Undulating	Rough	with many black specks
23.23	1	Joint	10		0		Undulating	Rough	with many black specks
23.32-23.37		Fracture	30		0		Stepped	Rough	with many black specks
23.51-23.74	3	Joint	80		0		Undulating	Rough	with many black specks
23.85	1	Joint	5		0		Undulating	Rough	with many black specks
24.08	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks
24.50-24.76	3	Joint	85		0		Undulating	Rough	with many black specks
25.20	1	Joint	10		0		Undulating	Rough	with many black specks
25.20-25.26	2	Joint	45		0		Undulating	Rough	with occasional black specks
25.28-25.35	2	Joint	45		0		Undulating	Rough	with occasional black specks
25.37	1	Joint	5		0		Undulating	Rough	with many black specks
25.40-25.42	2	Joint	45		0		Undulating	Rough	with occasional black specks
26.21	1	Joint	5		0		Undulating	Rough	with many black specks
26.26	1	Joint	0		0		Undulating	Rough	with many black specks
26.30	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
26.60	1	Joint	5		0		Undulating	Rough	with many black specks and brown surface staining
27.15	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
27.25	1	Joint	15		1	Comminuted chalk	Undulating	Rough	with occasional black specks
27.40	1	Joint	5		0		Undulating	Rough	with many black specks and brown surface staining
27.70	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks
28.04-28.07	2	Joint	30		0		Undulating	Rough	with occasional black specks
28.07-28.19		Fracture	70		0		Undulating	Rough	with many black specks
28.19	1	Joint	5		0		Undulating	Rough	with many black specks
28.19-28.26	2	Joint	30		0		Undulating	Rough	with many black specks
29.55	1	Joint	5		0		Undulating	Rough	
29.61-29.68	2	Joint	35		0		Undulating	Rough	with occasional black specks
29.90	1	Joint	5		1	Marl	Undulating	Rough	with many black specks
30.00	2	Joint	20		0		Undulating	Rough	

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71810

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
30.10	1	Joint	15		0		Undulating	Rough	
30.41	1	Joint	5		0		Undulating	Rough	with many black specks
30.48	1	Joint	5		0		Undulating	Rough	with rare orangish brown surface staining
30.75	1	Joint	0		0		Undulating	Smooth	with many black specks and brown surface staining
31.56	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
31.72	1	Joint	10		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
32.33	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with occasional black specks
32.44	1	Joint	5		0		Undulating	Rough	with many black specks
32.72	1	Joint	5		0		Undulating	Rough	with occasional black specks
33.16	1	Joint	0		0		Planar	Rough	
33.65-33.79		Fracture	65		0		Undulating	Rough	with many black specks and orangish brown surface staining
33.82	1	Joint	0		0		Undulating	Rough	with occasional black specks
34.10	1	Joint	10		0		Stepped	Rough	with many black specks and orangish brown surface staining
34.60	1	Joint	5		0		Undulating	Rough	with occasional black specks
35.12-35.25	2	Joint	60		0		Undulating	Rough	with many black specks and occasional brown surface staining
35.30-35.43	2	Joint	70		0		Undulating	Rough	with many black specks and occasional brown surface staining
35.49	1	Joint	5		0		Undulating	Rough	with occasional black specks
35.51-35.74	2	Joint	70		0		Undulating	Rough	with many black specks and brown surface staining
36.17-36.21		Fracture	45		0		Undulating	Rough	with many black specks
36.38	1	Joint	5		0		Undulating	Rough	with many black specks
36.61	1	Joint	5		0		Undulating	Rough	with many black specks
36.86	1	Joint	0		1	Marl	Undulating	Rough	with many black specks and grey and brown surface staining
36.90	1	Joint	5		1	Marl	Undulating	Rough	with many black specks and grey and brown surface staining
37.45	1	Joint	15		1	Comminuted chalk	Undulating	Rough	with occasional black specks
39.45	1	Joint	5		0		Undulating	Rough	with many black specks and grey and brown surface staining
39.50	1	Joint	0		0		Undulating	Rough	with many black specks and grey and brown surface staining
40.50	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
40.89	1	Joint	5		0		Undulating	Rough	with many black specks and occasional orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71810

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
41.27-41.33	2	Joint	65		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
41.40-41.43		Fracture	20		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
42.50		Fracture	5		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
42.53-42.57	1	Joint	45		0		Undulating	Rough	with many black specks and occasional brown surface staining
43.90-44.00	1	Joint	45		0		Undulating	Rough	with many black specks
44.10-44.16	2	Joint	70		0		Undulating	Rough	with many black specks
45.14-45.45	2	Joint	75		0		Undulating	Rough	with many black specks and grey and brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71811

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
10.60-11.01	1	Joint	85		0		Undulating	Rough	with many black specks
11.01	2	Joint	0		0		Planar	Rough	with many black specks
11.08-11.16	3	Joint	45		0		Undulating	Rough	with many black specks
11.16-11.25	4	Joint	75		0		Undulating	Rough	with many black specks
11.30-11.40	1	Joint	85		0		Undulating	Rough	with many black specks
11.40	2	Joint	5		0		Undulating	Rough	with many black specks
12.28-12.42	3	Joint	50		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
12.42-12.73	1	Joint	85		0		Undulating	Rough	with many black specks
12.80-12.86	3	Joint	50		0		Undulating	Rough	with many black specks
13.86-14.00	1	Joint	85		0		Undulating	Rough	with many black specks
13.86	2	Joint	0		0		Undulating	Rough	with many black specks
14.00-14.20	4	Joint	70		0		Undulating	Rough	with many black specks
14.20-14.29	4	Joint	60		0		Undulating	Rough	with many black specks
14.35	2	Joint	5		0		Undulating	Rough	with many black specks
14.86-14.98	3	Joint	45		0		Undulating	Rough	with many black specks
15.35	2	Joint	5		0		Undulating	Rough	with occasional black specks
15.60-15.65	3	Joint	45		0		Undulating	Rough	with many black specks
15.70-15.76	3	Joint	45		0		Undulating	Rough	with many black specks
16.61-17.02	1	Joint	85		0		Undulating	Rough	with many black specks
17.02	2	Joint	5		0		Undulating	Rough	with many black specks
17.08-17.14	3	Joint	45		0		Undulating	Rough	with occasional black specks
18.22-18.30	4	Joint	65		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
18.36	2	Joint	5		0		Undulating	Rough	with many black specks
18.42-18.60	4	Joint	75		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
18.73-18.89	1	Joint	85		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
22.50	1	Joint	0		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
22.50-22.70	3	Joint	65		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
22.70-22.71		Fracture	50		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
22.70	1	Joint	5		0		Undulating	Rough	with many black specks
22.84-22.89	2	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
23.01-23.11	3	Joint	70		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
23.11-23.27	3	Joint	70		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
23.27	1	Joint	10		0		Undulating	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71811

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
23.31-23.35	2	Joint	35		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
23.40-23.44	2	Joint	35		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
25.30-25.50	2	Joint	85		0		Undulating	Rough	with many black specks
25.35-25.42	3	Joint	35		0		Undulating	Rough	with many black specks
25.67	1	Joint	0		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
25.86	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks
26.42	1	Joint	10		1	Marl	Planar	Smooth	with many black specks and occasional orangish brown surface staining
26.97	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks
27.25-27.46		Fracture	70		0		Undulating	Rough	with many black specks
27.27	1	Joint	5		0		Undulating	Rough	with many black specks
27.42-27.46	3	Joint	45		0		Undulating	Rough	with many black specks
27.59-27.77	2	Joint	80		0		Undulating	Rough	with many black specks
27.77-27.84	2	Joint	90		0		Undulating	Rough	with many black specks
27.84-27.95		Fracture	70		0		Undulating	Rough	with many black specks
27.95	1	Joint	0		0		Undulating	Rough	with many black specks
28.91	1	Joint	5		0		Undulating	Rough	with many black specks
28.94-28.98	3	Joint	45		0		Undulating	Rough	with many black specks
29.06-29.12	3	Joint	45		0		Undulating	Rough	with many black specks
30.33-30.53		Fracture	60		0		Undulating	Rough	with many black specks
30.66	1	Joint	5		0		Undulating	Rough	with many black specks
30.79	1	Joint	5		0		Undulating	Rough	with many black specks
31.53	1	Joint	5		0		Undulating	Rough	with many black specks
31.86	1	Joint	0		1	Marl	Undulating	Rough	with occasional black specks
32.00	1	Joint	15		0		Undulating	Rough	with many black specks
32.31	1	Joint	5		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
33.15	1	Joint	5		0		Undulating	Rough	with many black specks
33.35	1	Joint	5		0		Undulating	Rough	with many black specks
33.45	1	Joint	5		1	Marl	Undulating	Rough	with many black specks
34.38-34.51	1	Joint	10		0		Undulating	Rough	with many black specks
34.44		Fracture	45		0		Undulating	Rough	with many black specks
34.51	1	Joint	10		0		Undulating	Rough	with many black specks
34.73	1	Joint	5		0		Undulating	Rough	with many black specks
35.27	1	Joint	5		0		Undulating	Rough	with many black specks and orangish brown surface staining
36.25	1	Joint	0		0		Undulating	Rough	with many black specks
37.59	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
37.74	1	Joint	0		0		Undulating	Rough	with many black specks and occasional orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71811

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
37.98-38.05		Fracture	30		0		Undulating	Rough	with many black specks
38.05-38.15	2	Joint	50		0		Stepped	Rough	with many black specks
38.25-38.32	2	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
38.36-38.40	2	Joint	50		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
38.96	1	Joint	5		0		Stepped	Rough	incipient, partially open with occasional black specks and rare orangish brown surface staining
39.40	1	Joint	2		0		Undulating	Rough	with many black specks
39.76	1	Joint	5		0		Undulating	Rough	with many black specks
40.60	1	Joint	5		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
40.70-40.80	2	Joint	70		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
41.37	1	Joint	0		3	Marl	Undulating	Rough	with many black specks and rare orangish brown surface staining
41.72	1	Joint	0		0		Stepped	Rough	with occasional black specks and orangish brown surface staining
41.88	1	Joint	5		1	Comminuted chalk	Stepped	Rough	with occasional black specks
42.47	1	Joint	0		0		Undulating	Rough	with occasional black specks
43.83	1	Joint	0		1	Zoophycos	Undulating	Smooth	with rare black specks and much orangish brown surface staining
44.08	1	Joint	0		0		Undulating	Rough	with rare black specks
44.29	1	Joint	5		1	Marl	Undulating	Rough	with rare black specks and occasional orangish brown surface staining
46.40-46.48	3	Joint	45		1	Comminuted chalk	Undulating	Rough	with many black specks
46.48-46.55		Fracture	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
46.48	1	Joint	0		0		Undulating	Rough	with occasional black specks
46.60	1	Joint	0		5	Comminuted chalk	Undulating	Rough	with rare black specks
46.82	1	Joint	5		1	Zoophycos	Undulating	Rough	with rare black specks and occasional orangish brown surface staining
47.33-47.46		Fracture	80		1	Comminuted chalk	Undulating	Rough	with rare black specks and occasional orangish brown surface staining
47.33	1	Joint	5		0		Undulating	Smooth	with rare black specks and orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71811

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
47.68-47.72	3	Joint	45		1	Comminuted chalk	Undulating	Rough	with occasional black specks
47.85-47.95		Fracture	80		0		Undulating	Smooth	with occasional black specks and orangish brown surface staining and slickenlines
47.85	1	Joint	5		0		Undulating	Rough	with rare black specks and much grey surface staining
48.78	1	Joint	0		0		Undulating	Rough	with occasional black specks
49.20	1	Joint	0		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
49.33-49.35	3	Joint	30		0		Undulating	Striated	with many black specks and rare orangish brown surface staining
49.43-49.46	3	Joint	45		0		Undulating	Rough	with occasional black specks
49.52	1	Joint	0		0		Undulating	Rough	with rare black specks
49.82-49.85	3	Joint	45		0		Undulating	Rough	with rare black specks
50.06-50.13	3	Joint	45		0		Undulating	Rough	with occasional black specks and grey surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71812

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.49-1.52	1	Joint	60		0		Stepped	Rough	with rare black specks and orangish brown surface staining
1.53-1.66	1	Joint	60		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
1.63-1.68	1	Joint	60		0		Stepped	Rough	with occasional black specks
1.67-1.68		Fracture	10		1	Comminuted chalk	Stepped	Rough	with many black specks and rare orangish brown surface staining
1.69-1.71	2	Joint	40		0		Planar	Rough	with occasional black specks and rare orangish brown surface staining
1.72-1.74	2	Joint	40		0		Planar	Smooth	with occasional black specks and rare orangish brown surface staining
1.79-1.90	1	Joint	60		0		Undulating	Rough	with occasional black specks
1.92		Fracture	0		0		Stepped	Rough	with occasional black specks
2.85-2.90		Fracture	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
2.94-2.97		Fracture	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
2.98-3.03		Fracture	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.00-3.31		Fracture	90		1	Comminuted chalk	Stepped	Rough	with occasional black specks and rare orangish brown surface staining
3.10-3.18		Fracture	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
3.21-3.25		Fracture	35		1	Comminuted chalk	Stepped	Rough	with occasional black specks and orangish brown surface staining
4.14	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with occasional black specks
4.30-4.40		Fracture	70		1	Comminuted chalk	Planar	Rough	with occasional black specks
4.40-4.48	3	Joint	85		0		Planar	Smooth	with rare black specks
4.48	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
4.68	1	Joint	0		0		Stepped	Rough	
4.78	1	Joint	0		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
4.83	1	Joint	0		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71812

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
4.97	1	Joint	0		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
5.56-5.64	2	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks
5.57-5.65	2	Joint	50		0		Stepped	Rough	
5.80-5.90	2	Joint	50		0		Planar	Smooth	with rare black specks
5.82	1	Joint	0		0		Planar	Smooth	with many black specks
5.90-6.13	3	Joint	90		0		Stepped	Rough	with occasional black specks and orangish brown surface staining
6.00	1	Joint	0		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
6.18-6.40	3	Joint	90		0		Stepped	Rough	with occasional black specks
6.78-7.00	3	Joint	85		0		Stepped	Rough	with occasional black specks and rare orangish brown surface staining
7.29-7.42	2	Joint	40		0		Stepped	Rough	with rare black specks
7.52-7.78		Fracture	70		1	Marl	Undulating	Rough	with many black specks
7.52-8.00	3	Joint	90		0		Stepped	Rough	with many black specks
7.78	1	Joint	0		0		Stepped	Rough	with rare black specks
7.78-7.86	2	Joint	50		0		Stepped	Rough	with rare black specks
7.94-8.00	2	Joint	50		0		Stepped	Rough	with occasional black specks
8.57	1	Joint	0		0		Stepped	Rough	with occasional black specks
8.98-9.04	2	Joint	40		1	Marl	Planar	Striated	with occasional black specks
9.00-9.10	2	Joint	50		1	Marl	Planar	Smooth	with occasional black specks
9.10	1	Joint	0		1	Marl	Stepped	Rough	with occasional black specks
9.20-9.24	2	Joint	40		2	Marl	Stepped	Rough	with occasional black specks
10.00-10.05	2	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks
10.56-10.60	2	Joint	40		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
10.85-10.86	1	Joint	3		1	Comminuted chalk	Stepped	Rough	with many black specks
11.25	1	Joint	0		0		Stepped	Rough	with occasional black specks
11.80	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
11.83-11.85	1	Joint	10		0		Stepped	Rough	with occasional black specks
11.85-11.87	1	Joint	10		0		Stepped	Rough	with occasional black specks
11.91-11.94		Fracture	30		2	Fossil	Stepped	Rough	with occasional black specks, orangish brown surface staining and a sheet-like bivalve fossil (Platyceramus fragments)
11.98-12.00		Fracture	18		1	Comminuted chalk	Planar	Smooth	with many black specks
12.40-12.53	2	Joint	50		1	Comminuted chalk	Undulating	Rough	with many black specks
12.47	1	Joint	0		1	Comminuted	Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71812

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
						chalk			
12.53	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
13.24-13.40	2	Joint	40		0		Stepped	Rough	with occasional black specks
13.27-13.34	2	Joint	50		0		Planar	Smooth	incipient, partially open with occasional black specks
13.60-13.63	1	Joint	10		0		Planar	Smooth	with many black specks
13.70-13.75		Fracture	65		2	Comminuted chalk	Planar	Smooth	with many black specks
14.06-14.18		Fracture	60		2	Marl	Stepped	Rough	with many black specks and occasional orangish brown surface staining
14.77-14.90	2	Joint	50		0		Undulating	Smooth	incipient (opened during logging) with many black specks and occasional orangish brown surface staining
15.07-15.08	1	Joint	10		0		Stepped	Rough	incipient (opened during logging) with many black specks and occasional orangish brown surface staining
15.17-15.19	1	Joint	10		0		Undulating	Rough	incipient (opened during logging) with many black specks
15.19-15.32	3	Joint	90		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
15.32-15.35		Fracture	20		1	Marl	Stepped	Smooth	with many black specks and occasional orangish brown surface staining
15.39-15.47		Fracture	70		1	Marl	Planar	Smooth	with many black specks and occasional orangish brown surface staining
15.41-15.42		Joint	20		1	Marl	Stepped	Rough	with many black specks and rare orangish brown surface staining
16.35-16.36	2	Joint	20		1	Comminuted chalk	Planar	Smooth	with many black specks, orangish brown surface staining and sponge traces
16.40-16.42	1	Joint	10		3	Comminuted chalk	Stepped	Rough	with many black specks, orangish brown surface staining and sponge traces
16.46-16.50	2	Joint	20		2	Comminuted chalk	Planar	Smooth	with many black specks, orangish brown surface staining and sponge traces
16.48	1	Joint	0		2	Comminuted chalk	Undulating	Rough	with many black specks, orangish brown surface staining and sponge traces
16.71-16.78	2	Joint	20		1	Comminuted chalk	Planar	Smooth	with many black specks and sponge traces
16.75-16.83		Fracture	50		1	Comminuted chalk	Undulating	Rough	with many black specks, orangish brown surface staining and sponge traces

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71812

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
16.89-17.00		Fracture	70		1	Comminuted chalk	Undulating	Rough	with many black specks, orangish brown surface staining and sponge traces
17.76	1	Joint	5		0		Planar	Rough	with many black specks
17.80-18.55	3	Joint	90		0		Undulating	Rough	incipient (opened during logging)
18.10	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
18.18-18.20	1	Joint	10		1	Comminuted chalk	Stepped	Rough	with many black specks and rare orangish brown surface staining
18.55	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
18.65-18.66	1	Joint	10		1	Comminuted chalk	Stepped		with many black specks and rare orangish brown surface staining
18.84	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
19.19	1	Joint	0		1	Comminuted chalk	Planar	Smooth	with many black specks and orangish brown surface staining
19.58-19.66		Fracture	35		2	Comminuted chalk	Stepped	Rough	with many black specks and orangish brown surface staining
19.80	1	Joint	7		0		Planar	Smooth	incipient (opened during logging)
20.27	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and rare orangish brown surface staining
20.88	1	Joint	0		0		Undulating	Smooth	with many black specks
21.00	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
21.20-21.23	2	Joint	20		1	Comminuted chalk	Stepped	Rough	with many black specks
21.29-21.35	3	Joint	90		0		Undulating	Rough	incipient (opened during logging) with many black specks
21.50-21.61		Fracture	50		0		Stepped	Smooth	locally rough with many black specks
21.62-21.68	3	Joint	80		1	Marl	Stepped	Rough	with many black specks
22.10	1	Joint	0		0		Stepped	Rough	with many black specks
22.34	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
22.36-22.37	1	Joint	10		1	Comminuted chalk	Stepped	Rough	with many black specks
22.52-22.53	2	Joint	20		0		Undulating	Rough	with many black specks
23.00	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
23.30	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
23.35	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
23.82-23.84	2	Joint	20		0		Stepped	Rough	with many black specks
24.14	1	Joint	0		2	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71812

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
24.68-24.70	2	Joint	20		0		Stepped	Rough	with many black specks
24.72-24.84		Fracture	50		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
26.12	1	Joint	0		0		Stepped	Rough	with many black specks
26.14	1	Joint	0		0		Undulating	Rough	with many black specks
26.74	1	Joint	0		1	Marl	Undulating	Rough	with many black specks and occasional orangish brown surface staining
27.04-27.09		Fracture	40		0		Stepped	Rough	incipient (opened during logging) with occasional black specks and orangish brown surface staining
27.16-27.18	1	Joint	10		1	Comminuted chalk	Undulating	Smooth	with many black specks and rare orangish brown surface staining
27.27	2	Joint	20		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
27.50-27.65		Fracture	60		1	Marl	Stepped	Rough	with many black specks and orangish brown surface staining
27.54	1	Joint	10		1	Marl	Stepped	Rough	with many black specks and occasional orangish brown surface staining
28.48-28.50	1	Joint	10		3	Sheet flint	Stepped	Rough	with many black specks, rare orangish brown surface staining
28.59-28.62	2	Joint	20		1	Comminuted chalk	Undulating	Smooth	with many black specks, orangish brown surface staining and possible sponge traces
29.00-29.04	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks
29.00-29.07	3	Joint	90		0		Undulating	Smooth	with many black specks
29.07-29.12	2	Joint	20		0	Comminuted chalk	Stepped	Rough	with many black specks
29.20	1	Joint	0		2	Marl	Stepped	Rough	with many black specks
29.84	1	Joint	0		1	Marl	Stepped	Rough	with many black specks
30.01-30.03	1	Joint	10		0		Stepped	Rough	with many black specks
30.45-30.65		Fracture	70		1	Comminuted chalk	Stepped	Rough	with many black specks
30.67	1	Joint	0		1	Comminuted chalk	Undulating	Smooth	with many black specks
31.29-31.34	3	Joint	90		1	Comminuted chalk	Stepped	Rough	with many black specks
31.34-31.55	3	Joint	80		1	Comminuted chalk	Stepped	Rough	with many black specks and orangish brown surface staining
31.34-31.55	3	Joint	90		0		Undulating	Smooth	with many black specks
31.47-31.55		Fracture	50		1	Comminuted chalk	Stepped	Smooth	with many black specks
31.55-31.90	3	Joint	90		1	Comminuted chalk	Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71812

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
31.55-31.90	3	Joint	80		1	Comminuted chalk	Undulating	Rough	with many black specks
31.70-31.74	2	Joint	20		1	Comminuted chalk	Stepped	Rough	with many black specks
31.80	1	Joint	0		0		Stepped	Rough	with many black specks
32.15	1	Joint	5		0		Stepped	Rough	with many black specks
32.15-32.35	3	Joint	85		0		Undulating	Smooth	with many black specks
33.40-33.44	2	Joint	30		1	Marl	Stepped	Rough	with many black specks
33.48	1	Joint	0		1	Marl	Stepped	Rough	with many black specks and occasional grey surface staining
34.32	1	Joint	5		1	Comminuted chalk	Stepped	Rough	with many black specks
35.13	1	Joint	0		0		Stepped	Rough	with many black specks
35.18-35.24		Fracture	40		1	Comminuted chalk	Undulating	Rough	with many black specks
35.41-35.45	2	Joint	35		0		Undulating	Rough	with many black specks
36.38-36.40	2	Joint	25		0		Undulating	Smooth	with rare black specks and occasional orangish brown surface staining
36.64-36.85		Fracture	70		8	Sheet flint	Planar	Rough	with many black specks and occasional orangish brown surface staining
37.10-37.30	3	Joint	80		0		Undulating	Smooth	with many black specks and occasional orangish brown surface staining
37.40	1	Joint	0		0		Stepped	Rough	with many black specks and occasional orangish brown surface staining
38.08	1	Joint	5		1	Marl	Stepped	Rough	with many black specks and occasional orangish brown surface staining
39.36	1	Joint	0		1	Marl	Stepped	Rough	with occasional black specks
40.96-41.06		Fracture	70		8	Sheet flint	Stepped	Rough	with many black specks and occasional orangish brown surface staining
41.22-41.26	2	Joint	20		0		Stepped	Rough	with many black specks
41.69	1	Joint	0		2	Fossil	Stepped	Rough	with many black specks, occasional orangish brown surface staining and an unidentified fossil
42.27-42.35		Fracture	50		0		Undulating	Smooth	with occasional black specks and much orangish brown surface staining
42.35-42.52		Fracture	60		1	Marl	Stepped	Rough	with occasional black specks and orangish brown surface staining
42.57-42.70		Fracture	40		2	Marl	Stepped	Rough	with many black specks and occasional orangish brown surface staining
43.73-43.90		Fracture	50		1	Marl	Stepped	Rough	with many black specks and

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71812

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									occasional orangish brown surface staining
44.12-44.35	3	Joint	90		0		Undulating	Rough	with rare black specks
45.19-45.43	4	Joint	50		1	Marl	Planar	Smooth	with many black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71814

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
3.20-3.35		Fracture	5		0		Planar	Rough	with many black specks
3.25		Fracture	85		0		Planar	Rough	with many black specks
3.35-3.45		Fracture	85		0		Planar	Rough	with many black specks
3.40		Fracture	5		0		Planar	Rough	with many black specks
3.80		Fracture	5		0		Planar	Rough	with many black specks
3.90		Fracture	5		0		Planar	Rough	with many black specks
4.45-4.54	2	Joint	85		0		Planar	Rough	with many black specks
4.70-4.76	2	Joint	85		0		Planar	Rough	with many black specks
4.73	1	Joint	10		0		Planar	Rough	with many black specks
4.80	1	Joint	10		0		Planar	Rough	with many black specks
4.87	1	Joint	10		0		Planar	Rough	with many black specks
5.01-5.13		Fracture	65		0		Planar	Rough	with many black specks
5.99	1	Joint	10		0		Planar	Rough	with many black specks
6.07	1	Joint	15		0		Planar	Rough	with many black specks
6.11	1	Joint	15		0		Planar	Rough	with many black specks
6.17	1	Joint	15		0		Planar	Rough	with many black specks
6.20	1	Joint	15		0		Planar	Rough	with many black specks
6.23	1	Joint	10		0		Planar	Rough	with many black specks
6.29	1	Joint	10		0		Planar	Rough	with many black specks
6.33	1	Joint	5		0		Planar	Rough	with many black specks
6.39	1	Joint	10		0		Planar	Rough	with many black specks
6.54-6.89	2	Joint	85		0		Planar	Rough	with many black specks
7.68	1	Joint	15		1	Comminuted chalk	Planar	Rough	with many black specks
7.81-7.87	2	Joint	85		0		Planar	Rough	with many black specks
8.14	1	Joint	10		1	Comminuted chalk	Planar	Rough	with many black specks
8.24	1	Joint	5		0		Planar	Rough	with many black specks
8.33	1	Joint	10		0		Planar	Rough	with many black specks
8.39-8.44	3	Joint	45		0		Planar	Rough	with many black specks and rare orangish brown surface staining
8.50	1	Joint	0		0		Planar	Rough	with many black specks
8.84	1	Joint	5		1	Comminuted chalk and marl	Undulating	Rough	with many black specks
9.08	1	Joint	5		0		Planar	Rough	with many black specks
9.08-9.26	2	Joint	85		0		Planar	Rough	with many black specks
9.26	1	Joint	0		0		Planar	Rough	with many black specks
9.40	1	Joint	5		0		Planar	Rough	with many black specks
9.53-9.60	3	Joint	45		2	Comminuted chalk	Planar	Rough	with many black specks and occasional orangish brown surface staining
9.70	1	Joint	10		0		Undulating	Rough	with many black specks
9.80-9.90	2	Joint	80		0		Planar	Rough	with many black specks
10.52	3	Joint	30		0		Planar	Rough	with many black specks
10.57-11.44	2	Joint	70		1	Comminuted chalk	Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71814

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
10.74	1	Joint	5		0		Planar	Rough	with many black specks
10.86	1	Joint	5		0		Planar	Rough	with many black specks and rare dark grey surface staining
11.29	1	Joint	5		0		Planar	Rough	with many black specks
11.45	1	Joint	5		0		Planar	Rough	with many black specks
12.29-12.30	3	Joint	20		1	Comminuted chalk	Planar	Rough	with many black specks
12.31-12.32	3	Joint	20		1	Comminuted chalk	Planar	Rough	with many black specks
12.33-12.34	3	Joint	20		1	Comminuted chalk	Planar	Rough	with many black specks
12.66-12.71	2	Joint	50		0		Planar	Rough	with many black specks
12.82-12.86	2	Joint	30		0		Planar	Rough	with many black specks
12.86-12.95	2	Joint	45		0		Planar	Rough	with many black specks
13.33-13.37	2	Joint	30		0		Planar	Rough	with many black specks
13.37	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
13.70	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
13.75	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
13.94	1	Joint	5		0		Planar	Rough	with many black specks
14.05	1	Joint	5		0		Planar	Rough	with many black specks
14.16	1	Joint	10		0		Planar	Rough	with many black specks
14.29	1	Joint	10		0		Planar	Rough	with many black specks
14.42-14.44	1	Joint	10		1	Marl	Planar	Rough	with many black specks
14.44-14.53	2	Joint	35		0		Planar	Rough	with many black specks
15.08	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
15.15	1	Joint	5		0		Planar	Rough	with many black specks
15.37-15.54		Fracture	80		0		Planar	Rough	with many black specks
15.58	1	Joint	5		0		Planar	Rough	with many black specks
15.61-15.65	3	Joint	20		0		Planar	Rough	with many black specks
15.66-15.70	3	Joint	20		0		Planar	Rough	with many black specks
15.84-15.87	1	Joint	10		0		Stepped	Rough	with many black specks
15.90-15.96	2	Joint	30		1	Marl	Planar	Rough	with many black specks
16.45-16.76		Fracture	70		0		Planar	Rough	with many black specks
16.60	1	Joint	5		0		Planar	Rough	with many black specks
16.76-16.84	2	Joint	45		0		Planar	Rough	with many black specks
16.90-17.00	2	Joint	30		0		Planar	Rough	with many black specks
17.05	1	Joint	5		0		Planar	Rough	with many black specks
17.26	1	Joint	0		0		Planar	Rough	with many black specks
17.50	1	Joint	5		1	Marl	Planar	Rough	with many black specks
17.85	1	Joint	5		0		Undulating	Rough	with many black specks
18.04-18.06	1	Joint	10		0		Undulating	Rough	with many black specks
18.20	1	Joint	0		0		Planar	Rough	with many black specks
18.20-18.33	2	Joint	45		0		Planar	Rough	with many black specks
18.53	1	Joint	5		0		Planar	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71814

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
18.56	1	Joint	10		1	Comminuted chalk	Planar	Rough	with many black specks
18.67-19.05		Fracture	70		0		Planar	Rough	with occasional black specks
18.67	1	Joint	10		0		Planar	Rough	with many black specks
19.40	1	Joint	10		1	Comminuted chalk	Planar	Rough	with occasional black specks
19.52	1	Joint	5		0		Planar	Rough	with many black specks
19.72-20.00	2	Joint	45		0		Planar	Rough	with many black specks and rare orangish brown surface staining
19.81	1	Joint	0		0		Planar	Rough	with many black specks
20.15	1	Joint	5		0		Planar	Rough	with many black specks
20.25-20.35	2	Joint	50		0		Planar	Rough	with many black specks
20.48-20.54	2	Joint	30		0		Planar	Rough	with many black specks
21.67	1	Joint	5		0		Planar	Rough	with many black specks
21.72-21.90		Joint	85		0		Planar	Rough	with many black specks
21.74	1	Joint	0		0		Planar	Rough	with many black specks
21.78-21.81	3	Joint	20		1	Comminuted chalk	Planar	Rough	with many black specks
21.81-21.90		Fracture	65		0		Planar	Rough	with many black specks and occasional grey surface staining
22.34	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
22.42	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
22.50-22.76		Joint	85		0		Planar	Rough	with many black specks
22.75	1	Joint	5		0		Planar	Rough	with many black specks
22.90-23.20	3	Joint	75		0		Planar	Rough	with many black specks
22.99	1	Joint	0		0		Planar	Rough	with many black specks
23.20-23.21		Fracture	45		0		Planar	Rough	with many black specks and occasional grey surface staining
23.31	1	Joint	15		0		Planar	Rough	with many black specks
23.34	1	Joint	15		0		Planar	Rough	with many black specks
23.40-23.65	3	Joint	85		0		Planar	Rough	with occasional black specks
23.56	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
24.10	1	Joint	5		0		Planar	Rough	with occasional black specks
24.40	1	Joint	5		0		Planar	Rough	with many black specks
24.54-24.58	2	Joint	40		0		Planar	Rough	with many black specks
24.66-24.76	2	Joint	45		1	Comminuted chalk	Planar	Rough	with many black specks
24.76-24.78	3	Joint	70		0		Planar	Rough	with many black specks
24.80	1	Joint	5		0		Planar	Rough	with many black specks
25.00-25.22	3	Joint	65		0		Planar	Rough	with many black specks
25.22-25.38	2	Joint	30		0		Planar	Rough	with many black specks
25.22-25.38	2	Joint	45		0		Planar	Rough	with many black specks
25.38-25.64	3	Joint	5		0		Planar	Rough	with many black specks
25.64	1	Joint	5		0		Planar	Rough	with many black specks
26.50	1	Joint	5		0		Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71814

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
26.56-26.65	3	Joint	85		0		Planar	Rough	with many black specks
26.76	1	Joint	0		2	Comminuted chalk	Planar	Rough	with occasional black specks
26.94	1	Joint	10		1	Comminuted chalk	Planar	Rough	with occasional black specks
27.21	1	Joint	5		1	Comminuted chalk	Planar	Rough	with occasional black specks
27.60	1	Joint	0		1	Comminuted chalk	Planar	Rough	with occasional black specks
27.90-27.99	3	Joint	85		0		Planar	Rough	with many black specks
27.99	1	Joint	5		1	Marl	Planar	Rough	with occasional black specks and much grey surface staining
28.15-28.43	2	Joint	85		0		Planar	Rough	
28.43	1	Joint	15		2	Comminuted chalk	Planar	Rough	
28.94-29.34	2	Joint	85		0		Planar	Rough	with rare black specks
30.07	1	Joint	5		0		Planar	Rough	with rare black specks
30.68	2	Joint	85		0		Planar	Rough	
30.85-31.10	2	Joint	85		0		Planar	Rough	
30.91-31.10	1	Joint	15		1	Comminuted chalk	Planar	Rough	
31.36	1	Joint	5		0		Planar	Rough	with occasional black specks
31.70	1	Joint	5		0		Planar	Rough	with many black specks
32.45	1	Joint	5		0		Planar	Rough	with many black specks
32.60-32.65		Fracture	30		0		Planar	Rough	with many black specks
32.65-32.75	2	Joint	85		0		Planar	Rough	with many black specks
32.75	1	Joint	5		0		Planar	Rough	with many black specks
32.90-32.93		Fracture	20		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
33.07	1	Joint	0		1	Marl	Planar	Rough	with many black specks
33.50	1	Joint	5		0		Planar	Rough	with many black specks
34.28	1	Joint	5		0		Undulating	Rough	with many black specks
34.41	1	Joint	5		1	Marl	Undulating	Rough	with many black specks and grey surface staining
34.83-35.02	2	Joint	60		0		Planar	Rough	with occasional black specks
35.10-35.15		Fracture	30		0		Planar	Rough	with many black specks
35.32	1	Joint	5		0		Planar	Rough	with occasional black specks
35.37	1	Joint	5		1	Marl	Planar	Rough	with occasional black specks
36.15	1	Joint	0		0		Planar	Rough	with many black specks
36.55-36.83	2	Joint	75		0		Planar	Rough	with many black specks
36.83	1	Joint	0		0		Planar	Rough	with many black specks
37.80-37.84	2	Joint	60		0		Planar	Rough	with many black specks and grey surface staining
38.65-39.10	2	Joint	85		0		Planar	Rough	with occasional black specks
39.10	1	Joint	5		0		Planar	Rough	with rare black specks
39.19-39.39	2	Joint	85		0		Planar	Rough	with many black specks
39.84-39.90	2	Joint	85		0		Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71814

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
40.41	1	Joint	5		0		Planar	Rough	with occasional black specks
41.03-41.17	2	Joint	70		0		Planar	Smooth	with many black specks and orangish brown surface staining
41.30-41.44	2	Joint	70		0		Planar	Smooth	with many black specks and orangish brown surface staining
41.44-41.52	2	Joint	65		0		Planar	Smooth	with many black specks and occasional orangish brown surface staining
41.96-42.17	2	Joint	70		0		Planar	Smooth	with many black specks and orangish brown surface staining
42.70	1	Joint	5		0		Planar	Rough	with occasional black specks
43.05	1	Joint	5		0		Planar	Rough	with occasional black specks
43.15	1	Joint	5		0		Planar	Smooth	with many black specks and occasional orangish brown surface staining
43.19	1	Joint	0		2	Comminuted chalk	Planar	Rough	with occasional black specks
44.42	1	Joint	5		0		Planar	Rough	with occasional black specks
44.65	1	Joint	5		0		Planar	Rough	with occasional black specks and rare orangish brown surface staining
44.94	1	Joint	10		2	Comminuted chalk	Planar	Rough	with occasional black specks
45.20-45.35	2	Joint	65		0		Planar	Rough	with many black specks
45.48-45.50	2	Joint	60		0		Planar	Rough	with many black specks
45.57-45.65	2	Joint	75		0		Planar	Smooth	with many black specks and orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71815

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
2.51-2.64		Fracture	80		0		Stepped	Rough	with rare black specks
2.64-2.70		Fracture	40		0		Stepped	Rough	with rare orangish brown surface staining
3.80-4.06		Fracture	70		0		Undulating	Rough	with occasional orangish brown surface staining
4.05-4.08		Joint	10		0		Stepped	Rough	with occasional black specks
4.11-4.13		Joint	10		0		Stepped	Rough	with rare orangish brown surface staining
4.18-4.20		Joint	10		0		Stepped	Rough	with occasional orangish brown surface staining
6.82		Joint	0		1	Grey marl	Planar	Smooth	with occasional black specks
8.49-8.50		Joint	8		0		Stepped	Rough	with occasional black specks
8.53-8.55		Joint	10		1	Grey marl	Undulating	Rough	with occasional black specks and orangish brown surface staining some sponges
8.58		Joint	5		0		Stepped	Rough	with occasional black specks
8.59		Joint	3		0		Stepped	Rough	with occasional black specks
8.60		Joint	0		0		Planar	Smooth	with occasional black specks
8.61		Joint	0		0		Planar	Smooth	with rare black specks
8.67		Joint	8		1	Grey marl	Planar	Smooth	with occasional black specks
9.71	1	Joint	0		0		Stepped	Rough	with rare black specks
9.82-9.85		Fracture	20		0		Stepped	Rough	with rare black specks
10.80	1	Joint	0		2	Grey marl	Stepped	Rough	with rare black specks and orangish brown surface staining
10.87	1	Joint	0		1	Grey marl	Stepped	Rough	with rare black specks and orangish brown surface staining
11.40-11.50	2	Joint	40				Stepped		incipient, closed
11.50-11.52	2	Joint	40				Stepped		incipient, closed
11.52-11.54	1	Joint	0				Stepped		incipient, closed
11.65	1	Joint	0		1	Grey marl	Stepped	Rough	with occasional black specks
12.20-12.35	2	Joint	50		0		Stepped	Rough	with occasional black specks
12.45	1	Joint	3		0		Planar	Smooth	with occasional black specks and rare orangish brown surface staining
12.58-12.70	3	Joint	90		0		Stepped	Rough	with occasional black specks and orangish brown surface staining
13.55-13.70	3	Joint	90		1	Comminuted chalk	Undulating	Rough	with occasional black specks and orangish brown surface staining
13.84-13.95	3	Joint	90		1	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
13.95	1	Joint	0		0		Planar	Smooth	with many black specks
14.50-14.51	1	Joint	10		1	Comminuted chalk	Planar	Smooth	with many black specks and occasional orangish brown

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71815

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									surface staining
15.10-15.18	2	Joint	50		1	Comminuted chalk	Undulating	Rough	with many black specks
15.39-15.42	4	Joint	20		1	Comminuted chalk	Stepped	Rough	with many black specks
15.47	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks
15.83	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
15.86-15.88	4	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
17.04-17.24	3	Joint	85		0		Undulating	Rough	incipient (opened during logging) with occasional black specks possibly insipient fracture opened during drilling
18.29-18.34	4	Joint	20		0		Undulating	Rough	with occasional orangish brown surface staining
18.58-18.60	4	Joint	20		1	Grey marl	Stepped	Smooth	with many black specks and occasional orangish brown surface staining
18.90	1	Joint	3		1	Comminuted chalk	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
19.83	1	Joint	0		1	Comminuted chalk	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
20.42	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
21.70	1	Joint	0		1	Comminuted chalk	Stepped	Smooth	with many black specks and occasional orangish brown surface staining
24.19-24.25	2	Joint	40		1	Comminuted chalk	Stepped	Rough	with many black specks and occasional orangish brown surface staining
24.48	1	Joint	5		0		Undulating	Smooth	with many black specks
24.60	1	Joint	0		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
28.70	1	Joint	0		1	Grey marl	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
28.77-28.83		Fracture	50		1	Grey marl	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
28.88	1	Joint	0		9	Sheet flint and grey marl	Undulating	Rough	with many black specks
29.25	1	Joint	0		4	Sheet flint	Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71815

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
30.48	1	Joint	0		2	Sheet flint and comminuted chalk	Stepped	Rough	with occasional black specks
30.93	1	Joint	0		1	Grey marl	Planar	Smooth	with many black specks and orangish brown surface staining
32.59	1	Joint	3		2	Grey marl	Stepped	Rough	with many black specks and occasional orangish brown surface staining
33.34-33.36	1	Joint	10		1	Comminuted chalk	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
33.55	1	Joint	0		2	Grey marl	Undulating	Smooth	with many black specks and occasional orangish brown surface staining
33.69-33.72		Fracture	20		1	Comminuted chalk	Stepped	Rough	with occasional black specks
34.88-34.93		Fracture	40		1	Comminuted chalk	Undulating	Rough	with occasional black specks and orangish brown surface staining
35.12	1	Joint	0		0		Stepped	Rough	with occasional black specks and orangish brown surface staining
35.36	1	Joint	0		1	Grey marl	Stepped	Rough	with occasional black specks and much orangish brown surface staining
36.83-36.85	1	Joint	10		1	Grey marl	Stepped	Rough	with occasional black specks and orangish brown surface staining
38.50-38.53	1	Joint	10		1	Comminuted chalk	Stepped	Rough	with occasional orangish brown surface staining
39.89	1	Joint	0		1	Comminuted chalk	Stepped	Rough	with rare black specks and much orangish brown surface staining
41.47	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with rare black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71816

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
3.05		Fracture	3		1	Comminuted chalk	Planar	Smooth	with occasional black specks and orangish brown surface staining
3.11		Fracture	10		1	Comminuted chalk	Undulating	Rough	with many black specks
3.13		Fracture	8		1	Comminuted chalk	Planar	Rough	with occasional black specks and orangish brown surface staining
3.16		Fracture	10		2	Comminuted chalk	Undulating	Rough	with rare black specks
3.22		Fracture	30		1	Comminuted chalk	Undulating	Rough	with many black specks
3.26		Fracture	10		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
3.28		Fracture	10		0		Planar	Smooth	with many black specks
3.32		Fracture	10		0		Planar	Smooth	with occasional black specks and much orangish brown surface staining
5.70-5.94	2	Joint	85		0		Undulating	Rough	localy stepped with many black specks and rare orangish brown surface staining
5.94	1	Joint	10		1	Comminuted chalk	Planar	Rough	with many black specks
6.02	1	Joint	10		0		Undulating	Rough	with occasional black specks
6.15	1	Joint	5		0		Undulating	Rough	with many black specks
6.23	1	Joint	6		1	Comminuted chalk	Undulating	Rough	with many black specks
6.23-6.50	2	Joint	86		0		Undulating	Rough	locally stepped with many black specks and occasional orangish brown surface staining
6.37	1	Joint	10		0		Undulating	Rough	with rare black specks
6.40	1	Joint	10		0		Undulating	Rough	with rare black specks
6.44	1	Joint	10		0		Undulating	Rough	with rare black specks
7.05	1	Joint	3		0		Planar	Rough	with occasional black specks
7.18	1	Joint	5		0		Planar	Rough	with occasional black specks
7.34-7.44	3	Joint	45		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
7.56	1	Joint	10		1	Comminuted chalk	Undulating	Rough	locally stepped with occasional black specks
7.61	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
7.70	1	Joint	10		0		Undulating	Rough	with occasional black specks
7.76		Fracture	30		0		Planar	Rough	with occasional black specks
7.81		Fracture	30		0		Planar	Rough	with occasional black specks
8.09-8.20	2	Joint	80		0		Undulating	Rough	with many black specks
8.64	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71816

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
8.70-8.78	3	Joint	40		0		Undulating	Rough	locally stepped with many black specks and rare orangish brown surface staining
8.80	1	Joint	10		0		Undulating	Rough	with many black specks
8.83	1	Joint	8		0		Undulating	Smooth	with many black specks
8.88	1	Joint	10		0		Planar	Smooth	with rare black specks
9.04	1	Joint	10		0		Planar	Rough	with rare black specks
9.15	1	Joint	10		0		Planar	Rough	with rare black specks
9.17	1	Joint	10		0		Undulating	Rough	with occasional black specks
9.22	1	Joint	5		0		Undulating	Rough	with occasional black specks
9.37	1	Joint	8		0		Planar	Rough	with many black specks
9.42-9.54	3	Joint	50		1	Comminuted chalk	Undulating	Rough	locally stepped with many black specks and rare orangish brown surface staining
9.64	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
10.35-10.48	3	Joint	40		0		Planar	Rough	with rare black specks
10.50	1	Joint	10		0		Planar	Rough	with many black specks
10.83	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
10.83-11.00	3	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
11.00	1	Joint	10		0		Undulating	Rough	with rare black specks
11.02-11.08		Fracture	30		0		Undulating	Rough	locally stepped with rare black specks
11.15	1	Joint	10		0		Planar	Rough	with rare black specks
11.21	1	Joint	10		0		Undulating	Rough	with many black specks
11.72	1	Joint	5		0		Undulating	Smooth	with rare black specks
11.72-11.86	2	Joint	87		0		Stepped	Rough	with many black specks and rare orangish brown surface staining
11.80	1	Joint	6		0		Undulating	Smooth	with rare black specks and occasional orangish brown surface staining
11.86	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
12.18	1	Joint	10		1	Grey marl	Undulating	Rough	with many black specks and rare orangish brown surface staining
12.34	1	Joint	10		1	Comminuted chalk	Undulating	Rough	locally stepped with many black specks and orangish brown surface staining
12.52	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks
12.54-12.63	3	Joint	50		0		Undulating	Rough	with many black specks
13.12	1	Joint	10		0		Undulating	Rough	with many black specks
13.21	1	Joint	10		1	Comminuted chalk	Undulating	Rough	locally stepped with many black specks
13.41	3	Joint	40		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
13.56-13.78	2	Joint	90		0		Stepped	Rough	with many black specks and rare

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71816

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									orangish brown surface staining
13.63	1	Joint	7		1	Comminuted chalk	Undulating	Rough	with many black specks
13.78	1	Joint	10		0		Undulating	Rough	with rare black specks
13.85	1	Joint	10		0		Undulating	Rough	with many black specks
14.60-14.67	3	Joint	45		0		Undulating	Striated	with many black specks and occasional orangish brown surface staining
14.67	1	Joint	10		0		Planar	Smooth	with many black specks and rare orangish brown surface staining
14.67-14.79	2	Joint	85		0		Undulating	Rough	locally stepped with occasional black specks and orangish brown surface staining
14.79	1	Joint	10		0		Undulating	Rough	with occasional black specks
14.85	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with rare black specks
15.32		Fracture	30		1	Marl	Undulating	Rough	with many black specks and rare orangish brown surface staining
16.28-16.38	3	Joint	50		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
16.38	1	Joint	5		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
16.65	1	Joint	10		1	Marl	Undulating	Rough	with many black specks and occasional orangish brown surface staining
17.97	1	Joint	10		0		Undulating	Rough	locally planar with many black specks and rare orangish brown surface staining
18.16	1	Joint	10		0		Undulating	Rough	locally planar with many black specks
18.32-18.66	2	Joint	85		0		Undulating	Rough	locally stepped with many black specks
18.55	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
18.66	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with rare black specks
19.24-19.30	3	Joint	40		0		Planar	Striated	with many black specks
19.26	1	Joint	10		0		Undulating	Rough	with many black specks
19.46	1	Joint	10		0		Undulating	Rough	with occasional black specks
19.61	1	Joint	10		0		Undulating	Rough	with rare black specks
20.72	1	Joint	10		0		Planar	Rough	with many black specks and rare orangish brown surface staining
20.84-20.95	3	Joint	50						incipient, closed
20.95	1	Joint	6		0		Undulating	Rough	with many black specks
20.95-21.11	3	Joint	50		0		Planar	Rough	with many black specks
21.26	1	Joint	3		0		Undulating	Rough	with rare black specks
22.18	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with rare black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71816

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
22.34-22.42		Fracture	30		0		Undulating	Rough	with many black specks
23.83	1	Joint	10		0		Planar	Smooth	with many black specks
24.67	1	Joint	3		0		Planar	Smooth	with many black specks
25.58	1	Joint	3		0		Planar	Rough	with many black specks
25.58-25.66	2	Joint	40		0		Undulating	Rough	with occasional black specks
26.36	1	Joint	10		0		Undulating	Rough	with many black specks
27.02	1	Joint	5		0		Undulating	Rough	with occasional black specks
27.84	1	Joint	10		0		Undulating	Rough	with many black specks
27.92	1	Joint	8		0		Undulating	Rough	with many black specks
28.26-28.39	2	Joint	45		0				incipient, closed
28.39	1	Joint	10		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
28.88	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
28.88-28.93	2	Joint	40		0		Undulating	Rough	with many black specks
29.34	1	Joint	6		0		Undulating	Rough	with many black specks
29.87	1	Joint	10		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
30.21	1	Joint	3		0		Undulating	Rough	with occasional black specks and orangish brown surface staining
30.50	1	Joint	5		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
30.71	1	Joint	5		0		Planar	Rough	with occasional black specks and orangish brown surface staining
31.33	1	Joint	6		0		Undulating	Rough	with occasional black specks
31.55	1	Joint	10		0		Undulating	Rough	with occasional black specks
31.81	1	Joint	5		0		Undulating	Rough	with rare black specks
32.05	1	Joint	3		0		Undulating	Rough	with occasional black specks
32.10	1	Joint	5		0		Undulating	Rough	with occasional black specks
32.72	1	Joint	5		0		Undulating	Rough	with occasional black specks
32.84	1	Joint	15		0		Undulating	Rough	with many black specks
33.38	1	Joint	10		0		Undulating	Rough	with many black specks
33.52	1	Joint	8		0		Undulating	Rough	with many black specks
33.72	1	Joint	10		0		Undulating	Rough	with many black specks
34.64	1	Joint	5		0		Undulating	Rough	with many black specks
35.50	1	Joint	3		0		Undulating	Rough	with many black specks
36.12	1	Joint	5		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
36.50-36.58	2	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
36.60-36.66	2	Joint	45		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
37.22	1	Joint	0		0		Stepped	Rough	with occasional black specks
37.48	1	Joint	0		0		Undulating	Rough	with rare black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71816

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
37.64	1	Joint	5		0		Undulating	Rough	with rare black specks
37.98	1	Joint	5		0		Undulating	Rough	with many black specks
38.65	1	Joint	10		0		Undulating	Rough	with many black specks
38.97-39.10	2	Joint	50		0		Undulating	Rough	with many black specks
39.10-39.20		Fracture	85		0		Undulating	Rough	with many black specks
39.10	1	Joint	5		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
40.26	1	Joint	10		0		Undulating	Rough	with rare black specks
40.34	1	Joint	10		0		Undulating	Rough	with occasional black specks
41.29	1	Joint	2		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
41.44	1	Joint	6		0		Undulating	Rough	with many black specks
41.83	1	Joint	10		0		Undulating	Rough	with occasional black specks
42.08	1	Joint	10		0		Undulating	Rough	with rare black specks
42.23	1	Joint	10		0		Undulating	Rough	with rare black specks
42.54	1	Joint	5		0		Planar	Rough	with rare black specks
42.71	1	Joint	6		0		Undulating	Rough	with occasional black specks
43.62	1	Joint	5		0		Planar	Rough	with many black specks and rare orangish brown surface staining
43.77	1	Joint	10		1	Marl	Undulating	Rough	with many black specks and rare orangish brown surface staining
44.00	1	Joint	6		0		Planar	Rough	with many black specks and rare orangish brown surface staining
44.16	1	Joint	10		0		Undulating	Rough	with occasional black specks and rare orangish brown surface staining
44.78	1	Joint	10		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
44.92	1	Joint	5		0		Undulating	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71818

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.94-1.99		Joint	35		1	Comminuted chalk	Undulating	Rough	with many black specks
2.04		Joint	3		1	Comminuted chalk	Planar	Rough	with occasional black specks and orangish brown surface staining
2.08		Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks and orangish brown surface staining
7.55		Joint	2		3	Comminuted chalk	Undulating	Rough	with rare black specks
7.62-7.66		Joint	35		1	Comminuted chalk	Planar	Rough	with occasional black specks and orangish brown surface staining
8.56	1	Joint	10		1	Comminuted chalk	Planar	Rough	with many black specks
8.58	1	Joint	15		1	Comminuted chalk	Planar	Rough	with many black specks
8.61	1	Joint	10		1	Comminuted chalk	Planar	Rough	with occasional black specks
8.65	2	Joint	32		1	Comminuted chalk	Stepped	Rough	with many black specks
8.70	1	Joint	3		3	Comminuted chalk	Planar	Rough	with many black specks
8.77-8.83	2	Joint	37		0		Undulating	Rough	with many black specks
8.83-8.94		Fracture	80		0		Undulating	Rough	with many black specks
8.92-8.99		Fracture	50		0		Undulating	Rough	with occasional black specks
9.25	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
9.29	2	Joint	38		1	Comminuted chalk	Stepped	Rough	with many black specks
9.32	2	Joint	20		1	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
9.41	1	Joint	5		2	Comminuted chalk	Planar	Rough	with rare black specks
10.13-10.27	2	Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
10.16	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
10.17-10.21	3	Joint	30		1	Comminuted chalk	Planar	Rough	with occasional black specks
10.24-10.29	3	Joint	40		0		Undulating	Rough	with occasional black specks
10.41	1	Joint	10		1	Marl	Planar	Rough	with many black specks
10.41-10.57	2	Joint	90		0		Undulating	Rough	with many black specks
10.44	3	Joint	31		1	Comminuted chalk	Planar	Rough	with many black specks
10.57	1	Joint	10		0		Planar	Smooth	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71818

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
10.59	1	Joint	10		0		Planar	Rough	with many black speckswith many black specks
10.61	1	Joint	10		0		Planar	Rough	with many black specks
10.63	1	Joint	10		0		Undulating	Rough	with many black specks
10.66	1	Joint	6		0		Undulating	Rough	with many black specks
10.68	3	Joint	35		0				incipient, closed
10.72	3	Joint	33		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
11.08	1	Joint	10		1	Comminuted chalk	Planar	Rough	with many black specks
11.82	1	Joint	3		1	Comminuted chalk	Undulating	Rough	with many black specks
11.82-11.97	2	Joint	85		0		Planar	Rough	incipien (opend during logging) with many black specks
11.97	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with many black specks
12.06-12.09		Fracture	60		1	Comminuted chalk	Undulating	Rough	with many black specks
12.10-12.17		Fracture	60		1	Comminuted chalk	Planar	Rough	with many black specks, fracture was insipeint, closed that opened under pressure
12.17	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specs
12.17-12.47	2	Joint	85		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
12.31	1	Joint	10		0		Planar	Smooth	with occasional black specks
12.35	1	Joint	10		0		Planar	Smooth	with rare black specks
12.38	3	Joint	30		0		Planar	Rough	with occasional black specks and rare orangish brown surface staining
12.47	1	Joint	5		1	Marl	Planar	Rough	with many black specks
12.50-12.65	2	Joint	85		0		Undulating	Rough	incipient, partially open, with occasional black specks
12.61	1	Joint	5		0		Undulating	Rough	with rare black specks and orangish brown surface staining
13.16	1	Joint	7		1	Comminuted chalk	Planar	Rough	with occasional black specks and orangish brown surface staining
13.36	1	Joint	6		0		Undulating	Rough	with occasional black specks
13.38-13.54	3	Joint	45		0		Planar	Rough	incipient (opened during logging) with many black specs
13.54	1	Joint	5		0		Undulating	Smooth	with many black specs
13.56	1	Joint	5		0		Undulating	Rough	with many black specs
13.59	1	Joint	8		0		Undulating	Rough	with many black specks
13.66	1	Joint	4		1	Comminuted chalk	Planar	Smooth	with rare black specs
13.86	1	Joint	2		0		Planar	Smooth	with many black specks and occasional orangish brown surface staining.

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71818

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
14.21	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
14.21-14.31	2	Joint	87		0		Planar	Smooth	with many black specks and occasional orangish brown surface staining
14.31	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
14.41	1	Joint	10		0		Planar	Rough	with occasional black specks
14.43-14.50	3	Joint	40		0		Planar	Rough	incipient (opened during logging) with many black specks
14.50-14.89	2	Joint	85		0		Undulating	Rough	incipient (opened during logging) with many black specks and rare orangish brown surface staining
14.89	1	Joint	6		1	Comminuted chalk	Undulating	Rough	with occasional black specks
14.89-15.07	3	Joint	45		0		Planar	Smooth	with many black specks and rare orangish brown surface staining
15.03	1	Joint	5		0		Planar	Rough	with occasional black specs
15.16	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks
15.53	1	Joint	5		0		Undulating	Rough	with occasional black specks
15.57	1	Joint	8						insipient, closed
15.62	1	Joint	10		1	Comminuted chalk	Planar	Rough	with many black specks and occasional orangish brown surface staining
15.69	1	Joint	15		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
15.83-15.94	3	Joint	30		0		Planar	Smooth	with occasional black specks and rare orangish brown surface staining
16.08-16.17	2	Joint	75		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
16.14	1	Joint	20		1	Comminuted chalk	Undulating	Rough	with many black specks
16.14-16.30	2	Joint	75		0		Undulating	Rough	incipient (opened during logging) with many black specks
16.45	1	Joint	10		0		Planar	Rough	with occasional black specs
16.45-16.71	2	Joint	87		0		Undulating	Rough	with many black specks
16.61	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specs
16.67	1	Joint	20		1	Comminuted chalk	Planar	Rough	with occasional black specks and rare orangish brown surface staining
16.67-16.73	3	Joint	35		1	Comminuted chalk	Planar	Rough	with many black specks and occasional orangish brown surface staining
16.93	1	Joint	2		1	Comminuted	Undulating	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71818

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
						chalk			and rare orangish brown surface staining
16.99-17.15	2	Joint	80		0		Planar	Rough	with many black specks and rare orangish brown surface staining
17.06	1	Joint	5		0		Planar	Smooth	with occasional black specks and rare orangish brown surface staining
17.50-17.77	2	Joint	87		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
17.62-17.67	3	Joint	30		1	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
17.90	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specs
18.03	1	Joint	5		1	Comminuted chalk	Planar	Rough	with occasional black specks
18.03-18.12	2	Joint	83		0		Undulating	Rough	with occasional black specks
18.12	1	Joint	10		1	Comminuted chalk	Planar	Rough	with occasional black specks
18.39	3	Joint	35		1	Comminuted chalk	Undulating	Rough	with rare black specks
18.50	1	Joint	7		0		Planar	Smooth	locally stepped with many black specks
18.56	1	Joint	10		0		Planar	Smooth	with occasional black specks
18.56-19.00	2	Joint	85		0		Undulating	Rough	locally stepped, with many black specks and rare orangish brown surface staining
18.77	3	Joint	40		1	Comminuted chalk	Planar	Rough	with occasional black specks
18.90	1	Joint	10		0		Planar	Rough	with many black specks
19.23	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
19.35	1	Joint	7		1	Comminuted chalk	Undulating	Rough	with many black specks and rare orangish brown surface staining
19.65	1	Joint	5		0		Planar	Rough	with many black specks
19.82	1	Joint	10		0		Planar	Rough	with many black specks
19.82-20.17	2	Joint	85						incipient (opened during logging) with many black specks
20.17	1	Joint	0		0		Planar	Rough	with many black specks
20.21	1	Joint	0		0		Planar	Rough	with many black specks
20.24	1	Joint	2				Planar	Rough	incipient (opened during logging) with many black specks
20.26	1	Joint	0				Planar	Smooth	incipient (opened during logging) with many black specks
20.50-20.66	2	Joint	85		0		Undulating	Rough	with many black specks,
20.77	1	Joint	15		1	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
20.88	1	Joint	7		0		Planar	Rough	with occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71818

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
21.01	1	Joint	8		0		Planar	Rough	with many black specks
21.08		Fracture	20		1	Comminuted chalk	Planar	Smooth	with occasional orangish brown surface staining
21.34	3	Joint	30		0		Undulating	Rough	with occasional orangish brown surface staining
21.54	1	Joint	3		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
21.58-21.62	3	Joint	38		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
21.62	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
21.74	1	Joint	10		2	Marl	Undulating	Rough	with occasional black specks and rare orangish brown and grey surface staining
21.74-22.00	2	Joint	85		0		Undulating	Rough	locally stepped, with occasional black specks and orangish brown surface staining
21.74-21.85	3	Joint	40		0		Planar	Rough	with many black specks and rare orangish brown surface staining
21.96	1	Joint	10		0		Undulating	Rough	locally stepped, with occasional black specks
22.11-22.28	2	Joint	86						incipient, closed
22.11	3	Joint	30		1	Comminuted chalk	Undulating	Rough	with occasional black specks and many orangish brown surface staining (possible trace fossil beds)
22.28	1	Joint	15		0		Undulating	Rough	with occasional black specks
22.48	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
22.55-23.00	2	Joint	85		0		Undulating	Rough	locally stepped, with many black specks and occasional orangish brown surface staining
22.65	1	Joint	10		0		Planar	Rough	with many black specks and rare orangish brown surface staining
22.83		Fracture	20		1	Comminuted chalk	Undulating	Rough	with occasional black specks
22.87	3	Joint	35		0		Planar	Rough	with many black specs
23.36	1	Joint	3		0		Undulating	Rough	with occasional black specks
23.40-23.50		Fracture	50		0		Planar	Rough	with occasional black specks and orangish brown surface staining
23.40	1	Joint	10		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
23.68	3	Joint	35		0		Planar	Rough	incipient, partially open, with many blcak specks
23.92	3	Joint	40		0		Undulating	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71818

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									and rare orangish brown surface staining
24.07	1	Joint	10		0		Undulating	Rough	locally stepped with rare black specks
24.61	1	Joint	6		1	Comminuted chalk	Undulating	Rough	with rare black specks
24.71	1	Joint	9		1	Comminuted chalk	Undulating	Rough	with occasional black specks
24.81	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks and orangish brown surface staining
24.97	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
25.00-25.22	2	Joint	87		0		Undulating	Rough	with many black specs
25.40	1	Joint	3		0		Undulating	Rough	with occasional black specks
26.26-26.50	2	Joint	90		0		Undulating	Smooth	incipient, partially open with many black specks and rare orangish brown surface staining
26.26	3	Joint	35		0		Stepped	Rough	with occasional black specks
26.37	1	Joint	6		0		Undulating	Rough	with occasional black specks
26.50	1	Joint	10		0		Planar	Smooth	with occasional black specks and rare orangish brown surface staining
26.50-26.83	2	Joint	86		0		Planar	Rough	with many black specks and occasional orangish brown surface staining (possible sponges)
26.62	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
26.83	1	Joint	5		1	Comminuted chalk	Planar	Rough	with occasional black specks
27.24	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
28.06	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
28.49-28.54	3	Joint	40		0		Undulating	Rough	with occasional black specks
28.79	1	Joint	10		0		Undulating	Rough	with occasional black specks
29.60	1	Joint	10		0		Planar	Rough	with many black specks
29.87		Fracture	20		0		Undulating	Rough	with occasional black specks
29.95	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
30.45	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specs
30.87	1	Joint	6		1	Comminuted chalk and marl	Undulating	Rough	with many black specks and occasional orangish brown and grey marl surface staining
31.15	1	Joint	5		0		Planar	Rough	locally undulating with many black specs
31.39	1	Joint	3		1	Comminuted chalk	Planar	Rough	locally undulating with rare black speacks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71818

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
31.97	1	Joint	3		0		Planar	Smooth	with many black specs
32.69	1	Joint	5		0		Planar	Rough	with many black specs
33.02	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with occasional black specks
33.53	1	Joint	8		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
33.71	1	Joint	15		0		Planar	Rough	with occasional black specks and rare orangish brown surface staining
34.34	1	Joint	15		0		Planar	Rough	with many black specks
34.40	1	Joint	10		0		Undulating	Rough	with many black specks
34.40-34.42	3	Joint	45		0		Undulating	Rough	with many black specks
34.44	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with occasional black specks
34.60	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks
34.60-35.00	2	Joint	85		0		Undulating	Rough	locally stepped with many black specks
34.69	1	Joint	10		0		Undulating	Rough	with many black specks
34.71-34.79	3	Joint	40		1	Comminuted chalk and marl	Undulating	Rough	locally stepped with many black specks and rare orangish brown surface staining
34.86	1	Joint	10		0		Undulating	Rough	with occasional black specks
34.93	1	Joint	10		0		Undulating	Rough	with many black specks
35.87	1	Joint	5		0		Undulating	Rough	with occasional black specks
35.92	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with many black specks
36.12	1	Joint	10		0		Planar	Rough	with many black specks
36.40-36.67	3	Joint	50		0		Undulating	Rough	with many black specks
36.63-36.67	3	Joint	30		1	Marl	Undulating	Rough	with many black specks and rare grey surface staining and grey marl colouration
37.00-37.17	2	Joint	85		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
37.49	1	Joint	10		0		Undulating	Rough	
37.49-37.59	3	Joint	50		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
39.12	1	Joint	5		1	Marl	Undulating	Rough	with many black specks and rare grey surface staining and grey marl
39.61-40.00	2	Joint	85		0		Undulating	Rough	locally stepped with occasional black specks and rare orangish brown surface staining
39.80	1	Joint	10		0		Undulating	Rough	with rare black specks
39.92	1	Joint	10		0		Undulating	Rough	with rare black specks
40.09	1	Joint	10		0		Undulating	Rough	with rare black specks
40.14	1	Joint	8		1	Comminuted chalk	Undulating	Rough	with rare black specks
40.50-40.70	3	Joint	50		0		Undulating	Rough	locally stepped with occasional

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71818

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
									black specks and orangish brown surface staining
40.60	1	Joint	10		0		Undulating	Rough	with occasional black specks
41.28	1	Joint	10		0		Stepped	Rough	with rare black specks
42.06	1	Joint	10		0		Planar	Rough	with rare black specks
42.50-42.69	3	Joint	50		0		Undulating	Rough	locally stepped with many black specks and occasional orangish brown surface staining
42.69	1	Joint	10		0		Undulating	Rough	with occasional black specks and orangish brown and grey surface staining
42.95	1	Joint	10		0		Undulating	Rough	with rare black specks and orangish brown surface staining
43.31	1	Joint	10		0		Undulating	Rough	with occasional black specks and much orangish brown surface staining
43.58	1	Joint	10		0		Undulating	Rough	with rare blck specks
43.69	1	Joint	10		0		Undulating	Rough	with rare black specks and orangish brown surface staining
43.69-43.86	3	Joint	50		0		Undulating	Rough	locally stepped with occasional black specks and orangish brown surface staining
43.79	1	Joint	10		0		Undulating	Rough	locally stepped with rare black specks and occasional orangish brown surface staining
44.32	1	Joint	10		0		Undulating	Rough	locally stepped with occasional black specks and rare orangish brown surface staining
44.36	1	Joint	10		0		Undulating	Rough	with occasional black specks
44.66	1	Joint	2		0		Planar	Rough	locally undulating with rare black specks
44.84	1	Joint	10		1	Comminuted chalk	Undulating	Rough	with rare black specks
44.90	1	Joint	5		1	Comminuted chalk	Undulating	Rough	with rare black specks and orangish brown surface staining
45.50	1	Joint	10		0		Undulating	Rough	with occasional black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71819

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
2.72-2.93		Joint	70		0		Undulating	Rough	
2.72-3.10		Joint	70		0		Undulating	Rough	
2.74-3.10		Joint	70		0		Stepped	Rough	
2.85-3.10		Joint	70		1	Comminuted chalk	Undulating	Rough	
4.22-4.30	1	Joint	65		0		Stepped	Rough	
4.36-4.50		Fracture	30		0		Stepped	Rough	
5.50-5.57	1	Joint	50		1	Grey marl	Stepped	Rough	with occasional black specks and grey staining
5.57-5.75	1	Joint	70		0		Undulating	Rough	with occasional black specks
5.75-5.95	2	Joint	85		0		Undulating	Rough	3 No. extremely closely spaced discontinuities. Locally stepped with occasional black specks and rare orangish brown surface staining
5.80-5.95	2	Joint	85		0		Stepped	Rough	with many black specks
6.00-6.30	1	Joint	50		0		Planar	Smooth	
6.20-6.30	1	Joint	50		0		Planar	Smooth	
6.32-6.40	1	Joint	60		0		Planar	Smooth	
6.33-6.45	1	Joint	50		0		Planar	Smooth	
7.20-7.35	3	Joint	65		0		Stepped	Rough	
7.35-7.38	1	Joint	10		0		Stepped	Rough	
7.55-7.62	3	Joint	50		0		Stepped	Rough	
7.62-7.66	3	Joint	50		0		Stepped	Rough	
8.47-8.60	4	Joint	90		0		Stepped	Rough	with occasional black specks
8.53-8.60	2	Joint	40		0		Stepped	Rough	with occasional black specks
8.70-9.30	4	Joint	85		0		Undulating	Rough	with occasional black specks
9.05-9.15	3	Joint	55		0		Planar	Smooth	
9.20-9.23	2	Joint	30		0		Stepped	Rough	with occasional black specks
10.25-10.27	1	Joint	15		1	Comminuted chalk	Planar	Rough	with rare black specks and occasional orangish brown surface staining
10.28-10.32	2	Joint	40		0		Stepped		incipient, closed
10.32-10.35	2	Joint	30		0		Planar		incipient, closed
10.36-10.40	1	Joint	20		0		Planar		incipient, closed
10.40-10.45	2	Joint	40		0		Planar		incipient, closed
10.41-10.43	1	Joint	10		0		Stepped	Rough	
10.60-10.72	1	Joint	75		1	Comminuted chalk	Planar	Rough	with occasional black specks
10.60-10.78	1	Joint	75		0		Stepped	Rough	with rare black specks
10.60-10.70	1	Joint	75		0		Stepped		incipient, closed
10.65-10.85	1	Joint	75		1	Comminuted chalk	Stepped	Rough	with rare black specks
10.73-10.90	1	Joint	75		0		Planar	Rough	
11.47-11.56	2	Joint	40		0		Planar	Smooth	with many black specks
11.56	1	Joint	0		10	Sheet flint	Stepped	Rough	

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71819

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
11.69-12.00		Fracture	75		0		Stepped	Rough	
11.70-12.00		Fracture	70		1	Comminuted chalk	Stepped	Rough	with occasional black specks
12.63	1	Joint	3		1	Grey marl	Planar	Smooth	with occasional black specks and grey surface staining
12.98	1	Joint	10		1	Grey marl	Stepped	Rough	with occasional grey surface staining
13.00-13.70		Fracture	90		0		Stepped	Rough	with occasional black specks
13.58	1	Joint	10		1	Grey marl	Stepped	Rough	with occasional black specks
14.80-14.84	2	Joint	20		1	Grey marl	Stepped	Rough	with occasional orangish brown surface staining
14.88	1	Joint	3		2	Grey marl	Stepped	Rough	with much orangish brown surface staining
14.95	1	Joint	0		2	Grey marl	Stepped	Rough	with rare orangish brown surface staining
15.38-15.42	2	Joint	30		0		Planar	Smooth	
16.35	1	Joint	0		1	Grey marl	Stepped	Rough	
16.68	1	Joint	10		2	Grey marl	Planar	Smooth	with occasional black specks
16.72	1	Joint	10		2	Grey marl	Planar	Smooth	
17.15	1	Joint	10		1	Comminuted chalk	Stepped	Rough	
17.20	1	Joint	0		1	Comminuted chalk	Stepped	Rough	
18.00-18.04	2	Joint	30		0		Stepped	Rough	
18.14	1	Joint	3		0		Stepped	Rough	
19.45	1	Joint	10		1	Comminuted chalk	Stepped	Rough	with rare black specks
19.54-19.60	2	Joint	45		1	Grey marl	Planar	Smooth	
19.61	2	Joint	45		1	Grey marl	Planar	Smooth	
20.20-20.40	2	Joint	30		1	Comminuted chalk	Stepped	Rough	
20.66	1	Joint	10		0		Planar	Smooth	
20.77	1	Joint	0		0		Planar	Smooth	
20.90-20.97		Fracture	30		0		Planar	Smooth	
22.40	1	Joint	5		0		Stepped	Rough	with occasional black specks
22.57	1	Joint	0		0		Stepped	Rough	with rare orangish brown surface staining
23.06	1	Joint	0		0		Stepped	Rough	
23.40-23.50		Fracture	50		0		Planar	Smooth	with occasional black specks
23.75	1	Joint	10		1	Grey marl	Stepped	Rough	with occasional black specks
23.98	1	Joint	10		2	Grey marl	Stepped	Rough	with occasional black specks
25.32-25.44	1	Joint	50		0		Stepped	Rough	with rare black specks
26.50-26.58	1	Joint	50		1	Grey marl	Stepped	Rough	
28.00-28.10	1	Joint	50		1	Grey marl	Planar	Smooth	
28.53-28.60	1	Joint	40		0		Stepped	Rough	
29.08-29.10		Fracture	20		0		Planar	Smooth	
30.47-30.53	1	Joint	40		0		Stepped	Rough	

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71819

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
32.35		Fracture	0		2	Grey marl	Stepped	Rough	
32.40		Fracture	0		2	Grey marl	Planar	Smooth	with occasional orangish brown surface staining
32.85	1	Joint	0		0		Planar	Rough	with occasional black specks
34.24-34.30		Fracture	35		0		Stepped	Rough	
34.80	1	Joint	0		2	Grey marl	Stepped	Rough	
36.53	1	Joint	10		1	Grey marl	Planar	Smooth	
36.67	1	Joint	14		1	Grey marl	Planar	Smooth	
36.75	1	Joint	10		2	Grey marl	Stepped	Rough	
36.90	1	Joint	0		1	Grey marl	Stepped	Rough	
37.29-37.32		Fracture	25		1	Grey marl	Planar	Smooth	
37.41-37.60	2	Joint	40		1	Grey marl	Stepped	Rough	
38.38	1	Joint	0		1	Grey marl	Stepped	Rough	
40.90	1	Joint	0		1	Grey marl	Stepped	Rough	
41.40	1	Joint	8		1	Grey marl	Stepped	Rough	with occasional orangish brown surface staining
41.83-41.98	2	Joint	50		1	Grey marl	Stepped	Striated	
42.38-42.44	2	Joint	50		0		Stepped	Rough	
43.63-43.64		Fracture	25		1	Grey marl	Stepped	Rough	
44.68	1	Joint	0		1	Grey marl	Stepped	Rough	

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71820

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
1.72-1.79	1	Joint	30		1	Comminuted chalk	Planar	Rough	with many black specs
1.75-1.92	2	Joint	80		0		Undulating	Rough	with many black specks
2.07-2.10	1	Joint	30		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
2.28-2.45	2	Joint	85		1	Comminuted chalk	Undulating	Rough	with many black specks
2.39-2.42	1	Joint	20		0		Planar	Rough	with many black specks
2.41-2.44	1	Joint	25		0		Planar	Rough	with many black specks
2.53-2.59	1	Joint	30		0		Planar	Rough	with many black specks
2.75-3.35	2	Joint	90		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
2.95-3.05	1	Joint	30		0		Planar	Rough	with many black specks
3.09-3.13	1	Joint	30		0		Planar	Rough	with many black specks
3.55-3.90	2	Joint	85		1	Comminuted chalk	Undulating	Rough	with many black specks
3.84-3.90	1	Joint	30		0		Planar	Rough	with many black specks and rare orangish brown surface staining
3.85-3.93		Fracture	45		0		Undulating	Rough	with many black specks
4.40-4.60	2	Joint	80		0		Planar	Rough	with many black specks
4.46-4.48	1	Joint	30		0		Undulating	Rough	with many black specks
4.80-4.86	2	Joint	75		1	Comminuted chalk	Planar	Rough	with many black specks
4.88-4.95	1	Joint	20		0		Stepped	Rough	with rare orangish brown surface staining
4.95	1	Joint	5		0		Planar	Rough	with rare orangish brown surface staining
5.82-6.15		Fracture	80		0		Planar	Rough	with many black specks
6.07-6.15	2	Joint	45		0		Undulating	Rough	with many black specks
6.37-6.39	2	Joint	30		0		Planar	Rough	with many black specks
6.40	1	Joint	5		0		Planar	Rough	with many black specks and rare orangish brown surface staining
6.42-6.44	2	Joint	35		0		Planar	Rough	with many black specks
6.46	1	Joint	0		0		Planar	Rough	with many black specks
6.63	1	Joint	0		1	Comminuted chalk	Planar	Rough	with many black specks
6.80-6.82	2	Joint	30		0		Planar	Rough	with many black specks
7.43-7.45	2	Joint	30		1	Marl	Undulating	Rough	with many black specks
7.57-7.62	2	Joint	45		1	Comminuted chalk	Undulating	Rough	with many black specks
7.67	1	Joint	5		1	Marl	Planar	Rough	with many black specks
7.68-7.81		Fracture	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
7.69-7.73	2	Joint	30		0		Planar	Rough	with many black specks
7.76	1	Joint	0		0		Planar	Rough	with many black specks
7.77	1	Joint	0		0		Planar	Rough	with many black specks
7.81	1	Joint	5		0		Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71820

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
7.82	1	Joint	0		0		Planar	Rough	with many black specks
7.90-7.98	2	Joint	45		1	Comminuted chalk	Undulating	Rough	with occasional black specks and rare orangish brown surface staining
8.15-8.23		Fracture	60		0		Planar	Rough	with rare orangish brown surface staining
8.31-8.34	2	Joint	30		0		Planar	Rough	with many black specks
8.98		Fracture	5		1	Comminuted chalk	Undulating	Rough	with many black specks
9.00-9.30	2	Joint	80		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
9.47-9.56	1	Joint	50		0		Undulating	Rough	with many black specks
9.65-9.83	2	Joint	75		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
9.77-9.83	1	Joint	50		0		Undulating	Rough	with many black specks
9.83-10.00	2	Joint	80		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
9.83-9.94	2	Joint	75		0		Undulating	Rough	with many black specks and rare orangish brown surface staining
10.18-10.23		Fracture	25		0		Planar	Rough	with many black specks
10.36-10.44	1	Joint	70		0		Planar	Rough	with many black specks
10.50-10.70	1	Joint	85		0		Undulating	Rough	with many black specks
10.90	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
11.04	1	Joint	0		0		Planar	Rough	with many black specks
11.70-11.74		Fracture	30		1	Comminuted chalk	Planar	Rough	with many black specks
12.15-12.55		Fracture	85		0		Undulating	Rough	with many black specks
12.66-12.79	1	Joint	70		0		Planar	Rough	with many black specks
12.68-12.77	1	Joint	70		0		Planar	Rough	with many black specks
12.70-12.81	1	Joint	70		0		Planar	Rough	with many black specks
12.75-12.87	1	Joint	70		0		Planar	Rough	with many black specks
12.86-12.95	1	Joint	70		0		Planar	Rough	with many black specks
13.01-13.10	1	Joint	70		0		Planar	Rough	with many black specks
13.15-13.28	1	Joint	70		0		Planar	Rough	with many black specks
14.16-14.20		Fracture	35		0		Planar	Rough	with many black specks
14.21-14.35	1	Joint	70		0		Planar	Rough	with many black specks
14.55-14.60	1	Joint	70		0		Planar	Rough	with many black specks
14.71-14.72		Fracture	5		0		Undulating	Rough	with many black specks
14.83-14.86	1	Joint	30		0		Planar	Rough	with many black specks and rare orangish brown surface staining
14.92-14.95	1	Joint	45		0		Planar	Rough	with many black specks and rare orangish brown surface staining
15.16		Fracture	0		0		Undulating	Rough	with many black specks
15.44-15.47	1	Joint	30		1	Comminuted chalk	Stepped	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71820

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
15.58-15.66	1	Joint	30		0		Undulating	Rough	with many black specks
15.75-15.78	1	Joint	40		0		Planar	Rough	with many black specks
15.82-15.86	1	Joint	45		0		Planar	Rough	with many black specks
15.98		Fracture	5		0		Planar	Rough	with many black specks
16.38-16.43	1	Joint	45		0		Planar	Rough	with many black specks and rare orangish brown surface staining
17.81-17.83	1	Joint	45		0		Planar	Rough	with many black specks and rare orangish brown surface staining
18.36-18.53		Fracture	85		0		Planar	Rough	with many black specks
18.62-18.67	1	Joint	45		0		Planar	Rough	with many black specks
18.77-18.84	1	Joint	40		0		Planar	Rough	with many black specks
18.93-18.97		Fracture	45		0		Planar	Rough	with many black specks
19.82	1	Joint	0		0		Planar	Rough	with occasional black specks and rare orangish brown surface staining
19.85-19.91	3	Joint	85		0		Undulating	Rough	with many black specks
20.45-20.48	1	Joint	5		0		Stepped	Rough	with occasional black specks
21.12-21.15		Fracture	60		0		Undulating	Rough	with many black specks
21.15-21.75	3	Joint	80		0		Planar	Rough	with many black specks
21.45	1	Joint	0		0		Planar	Rough	with many black specks
21.75-21.85	3	Joint	80		0		Planar	Rough	with many black specks
21.88	1	Joint	5		0		Planar	Rough	with many black specks
21.99	1	Joint	0		0		Planar	Rough	with many black specks
22.21-22.23	1	Joint	10		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
22.40-22.43	2	Joint	25		0		Planar	Rough	with many black specks and rare orangish brown surface staining
22.56-22.60	2	Joint	30		0		Planar	Rough	with many black specks
22.88-22.92	2	Joint	20		0		Planar	Rough	with many black specks
23.21-23.25	2	Joint	35		0		Planar	Rough	with many black specks
23.70-23.75	3	Joint	75		0		Planar	Rough	with rare orangish brown surface staining
23.76	1	Joint	5		0		Planar	Rough	with many black specks
23.99	1	Joint	5		0		Planar	Rough	with many black specks
24.54-24.57	2	Joint	45		0		Planar	Rough	with many black specks
24.61	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
24.68	1	Joint	0		0		Planar	Rough	with many black specks
24.90	1	Joint	0		0		Planar	Rough	with many black specks
25.60-25.63		Fracture	40		0		Planar	Smooth	with many black specks
25.85	1	Joint	0		0		Planar	Smooth	with many black specks
26.25	1	Joint	5		0		Planar	Smooth	with many black specks
26.54-26.57	2	Joint	75		0		Undulating	Rough	with many black specks
27.30	1	Joint	0		0		Planar	Rough	with many black specks
27.63	1	Joint	0		1	Comminuted chalk	Planar	Rough	with many black specks
27.81	1	Joint	5		1	Comminuted	Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71820

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
						chalk			
27.93-27.96		Fracture	35		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
27.98	1	Joint	0		1	Comminuted chalk	Planar	Smooth	with many black specks
28.55-28.59		Fracture	20		1	Comminuted chalk	Undulating	Rough	with many black specks and occasional orangish brown surface staining
28.68-28.70	3	Joint	45		0		Undulating	Rough	with many black specks
28.71-28.95	2	Joint	88		0		Planar	Rough	with many black specks
29.38	1	Joint	0		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
29.60	1	Joint	8		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
30.23	1	Joint	5		0		Planar	Rough	with many black specks
31.09	1	Joint	0		1	Comminuted chalk	Planar	Rough	with many black specks
31.75	1	Joint	0		1	Comminuted chalk	Planar	Rough	with many black specks
32.23	1	Joint	5		0		Planar	Rough	with many black specks
32.23-32.39	2	Joint	85		0		Planar	Rough	with many black specks and occasional orangish brown surface staining
32.39-32.41	3	Joint	45		0		Undulating	Rough	with many black specks
32.70-32.82	2	Joint	75		0		Undulating	Rough	with many black specks and occasional orangish brown surface staining
32.82	1	Joint	0		1	Comminuted chalk	Planar	Rough	with many black specks
32.91	1	Joint	5		0		Planar	Rough	with many black specks
33.25-33.27		Fracture	30		1	Comminuted chalk	Undulating	Rough	with many black specks
33.48	1	Joint	0		0		Planar	Rough	with many black specks
33.66-33.78	3	Joint	65		0		Planar	Rough	with many black specks and rare orangish brown surface staining
33.99-34.08	3	Joint	65		1	Comminuted chalk	Planar	Rough	with many black specks and rare orangish brown surface staining
34.45	1	Joint	5		1	Comminuted chalk	Planar	Rough	with many black specks
34.62-34.78	3	Joint	50		0		Planar	Rough	with many black specks
34.78	1	Joint	0		0		Planar	Rough	with many black specks
35.10	1	Joint	0		0		Planar	Rough	with many black specks
35.28-35.34	3	Joint	45		0		Undulating	Rough	with many black specks
35.96-36.03	2	Joint	70		0		Planar	Rough	with many black specks
35.96-36.07	2	Joint	80		0		Planar	Rough	with many black specks and occasional orangish brown surface staining

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No.** PC197626

Client HIGHWAYS ENGLAND **Hole No.** R71820

Depth / Length (m)	Discontinuity								Remarks
	Set No.	Type	Dip	Aperture	Infill (mm)	Infill Material Desc.	Roughness (Intermediate)	Roughness (Small)	
36.38-36.50	3	Joint	50		0		Undulating	Rough	with many black specks
36.62-36.75	2	Joint	70		0		Planar	Rough	with many black specks
36.68	1	Joint	5		0		Planar	Rough	with many black specks
37.15	1	Joint	0		1	Comminuted chalk	Planar	Rough	with many black specks
37.37-37.49	2	Joint	85		0		Planar	Rough	with many black specks
37.55	1	Joint	5		1	Marl	Planar	Rough	with many black specks
37.96-38.10	3	Joint	45		0		Planar	Smooth	with many black specks and orangish brown surface staining
37.99	1	Joint	0		0		Planar	Rough	with many black specks
38.14	1	Joint	0		0		Undulating	Rough	with many black specks
38.55-39.00	2	Joint	85		0		Planar	Rough	with many black specks and orangish brown surface staining
38.55-39.04	3	Joint	60		0		Planar	Smooth	with many black specks
39.28	1	Joint	0		0		Undulating	Rough	with many black specks and orangish brown surface staining
39.95-40.04	2	Joint	75		0		Planar	Rough	with many black specks and orangish brown surface staining
40.15-40.37	2	Joint	88		0		Planar	Rough	with many black specks and orangish brown surface staining
40.67	1	Joint	0		1	Marl	Undulating	Rough	with many black specks
41.47-42.57	1	Joint	10		0		Undulating	Rough	with many black specks
41.65	1	Joint	0		0		Planar	Rough	with many black specks and orangish brown surface staining
42.38	1	Joint	0		1	Comminuted chalk	Undulating	Rough	with many black specks
42.79-42.84		Fracture	20		0		Planar	Rough	with many black specks
42.94	1	Joint	5		0		Planar	Rough	with many black specks
43.15	1	Joint	0		0		Undulating	Rough	with many black specks and orangish brown surface staining
43.68	1	Joint	0		0		Planar	Rough	with many black specks
43.68-44.96	2	Joint	85		0		Planar	Rough	with occasional black specks
44.13	1	Joint	0		0		Planar	Rough	with many black specks
45.08	1	Joint	5		0		Planar	Rough	with many black specks
45.20	1	Joint	0		0		Planar	Rough	with many black specks
45.20	1	Joint	0		0		Planar	Rough	with many black specks

AGS Dip recorded as measured perpendicular to the core axis.
Stratum boundary

GEOTECHNICS

Fieldwork Results - SPT Results Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No** PC197626

Client HIGHWAYS ENGLAND

Hole	Depth m bgl	Level m OD	Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N'
					0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)		10 20 30 40 50
R71803	1.20	105.00	S	-	12	13	23	20	13	18	74	
R71803	2.20	104.00	S	-	6	17	17	26	24	23	90	
R71803	3.20	103.00	S	-	9	13	12	13	14	21	60	
R71803	4.20	102.00	S	-	8	14	18	22	17	16	73	
R71803	5.20	101.00	S	-	4	7	11	15	16	20	62	
R71803	6.20	100.00	S	-	20	5	30	29	17	11	87	
R71803	7.20	99.00	S	-	9	13	19	20	12	18	69	
R71803	8.20	98.00	S	-	10	12	17	19	19	21	76	
R71803	9.20	97.00	S	-	11	14	16	16	25	23	80	
R71803	10.20	96.00	S	-	12	12	13	14	22	23	72	
R71803	11.70	94.50	S	-	6	6	17	26	26	30	99	
R71803	13.20	93.00	S	-	5	8	21	24	29	31	105	

Driller	Stuart Proudlock
Hammer No.	SPT2
Energy Ratio, Er (%)	53.00
Calibration Date	09/05/2019

Remarks
Equipment checked and calibration carried out in accordance with BS EN ISO 22476-3: 2005

-/- Blows/penetration (mm) after seating
-*/- Total blows/penetration (mm)
SWP Penetration under own weight (mm)

S - Standard Penetration Test (SPT)
C - SPT with cone
L - Split Spoon with liner used

GEOTECHNICS

Fieldwork Results - SPT Results Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No** PC197626

Client HIGHWAYS ENGLAND

Hole	Depth m bgl	Level m OD	Type	SWP (mm)	Seating Drive 0-75 (mm)	Seating Drive 75-150 (mm)	Test Drive 0-75 (mm)	Test Drive 75-150 (mm)	Test Drive 150-225 (mm)	Test Drive 225-300 (mm)	SPT 'N' Value	Uncorrected SPT 'N' 10 20 30 40 50
R71803	14.70	91.50	S	-	12	12	13	25	27	33	98	>
R71803	16.20	90.00	S	-	9	15	26	15	20	27	88	>
R71803	17.70	88.50	S	-	10	12	12	14	37	58	121	>
R71803	19.20	87.00	C	-	5	13	16	22	24	31	93	>
R71803	20.70	85.50	C	-	6	11	17	30	36	33	116	>
R71803	22.20	84.00	C	-	3	7	14	20	21	40	95	>
R71803	23.70	82.50	C	-	5	6	9	9	13	17	48	*
R71803	25.20	81.00	C	-	10	14	18	22	25	27	92	>
R71803	26.70	79.50	C	-	6	14	30	100			130/150	>
R71803	28.20	78.00	C	-	8	16	28	37	35/35		100/185	>
R71803	29.70	76.50	C	-	6	19/25	59	41/65			100/140	>
R71803	31.20	75.00	C	-	12	13/45	35	40	25/40		100/190	>
R71803	32.70	73.50	C	-	5	14	22	25	28	25	100	>
R71803	34.20	72.00	C	-	6	15	25	23	36	16/25	100/250	>
R71803	35.70	70.50	C	-	6	12	18	25	27	30/65	100/290	>
R71803	37.20	69.00	C	-	12	13/65	31	33	36/50		100/200	>
R71803	38.70	67.50	C	-	8	17/50	36	64			100/150	>
R71803	40.20	66.00	C	-	9	16/20	100/25				100/25	>
R71803	41.70	64.50	C	-	8	16	76	24/25			100/100	>
R71803	43.20	63.00	C	-	10	15/20	60	40/35			100/110	>
R71803	44.70	61.50	C	-	20	5/5	90	10/5			100/80	>

Driller	Alex Clark
Hammer No.	DS15-3
Energy Ratio, Er (%)	68.00
Calibration Date	24/09/2018

Remarks
Equipment checked and calibration carried out in accordance with BS EN ISO 22476-3: 2005

-/- Blows/penetration (mm) after seating
-*/- Total blows/penetration (mm)
SWP Penetration under own weight (mm)

S - Standard Penetration Test (SPT)
C - SPT with cone
L - Split Spoon with liner used

GEOTECHNICS

Fieldwork Results - SPT Results Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No** PC197626

Client HIGHWAYS ENGLAND

Hole	Depth m bgl	Level m OD	Type	SWP (mm)	Seating Drive 0-75 (mm)	Seating Drive 75-150 (mm)	Test Drive 0-75 (mm)	Test Drive 75-150 (mm)	Test Drive 150-225 (mm)	Test Drive 225-300 (mm)	SPT 'N' Value	Uncorrected SPT 'N' 10 20 30 40 50
R71811	1.20	98.75	S	-	3	5	8	9	9	10	36	
R71811	2.20	97.75	S	-	4	3	2	3	4	5	14	
R71811	3.20	96.75	S	-	1	2	2	3	4	6	15	
R71811	4.20	95.75	S	-	1	3	2	4	6	4	16	
R71811	5.20	94.75	S	-	1	1	4	6	13	24	47	
R71811	6.20	93.75	S	-	2	7	9	13	15	19	56	
R71811	7.00	92.95	S	-	2	2	4	8	11	10	33	
R71811	8.00	91.95	S	-	2	4	6	8	10	13	37	
R71811	9.00	90.95	S	-	6	8	8	10	30	22	70	
R71811	10.00	89.95	S	-	5	6	8	11	13	16	48	
R71811	11.50	88.45	S	-	6	7	22	25	22	19	88	
R71811	13.00	86.95	C	-	5	7	12	12	17	18	59	
R71811	14.50	85.45	C	-	7	18/70	55	45/50			100/125	
R71811	16.00	83.95	C	-	5	13	11	18	50	21/35	100/260	
R71811	17.50	82.45	C	-	3	15	28	32	40/50		100/200	
R71811	19.00	80.95	C	-	8	17/60	46	54/50			100/125	
R71811	20.50	79.45	C	-	6	19/70	62	38/30			100/105	
R71811	22.00	77.95	C	-	7	18/45	46	54/50			100/125	
R71811	23.50	76.45	C	-	9	16	17	20	38/65		75/215	
R71811	25.00	74.95	C	-	25/50		91	9/5			100/80	
R71811	26.50	73.45	C	-	6	16	29	22	49/65		100/215	
R71811	28.00	71.95	C	-	4	16	35	34	21/20		90/170	
R71811	29.50	70.45	C	-	4	14	30	70			100/150	
R71811	31.00	68.95	C	-	4	19	68	32/10			100/85	
R71811	32.50	67.45	C	-	11	14/30	44	56/50			100/125	
R71811	34.00	65.95	C	-	6	13	22	40	38/30		100/180	
R71811	35.50	64.45	C	-	8	17	38	47	15/10		100/160	

Driller	Stuart Proudlock
Hammer No.	SPT2
Energy Ratio, Er (%)	53.00
Calibration Date	09/05/2019

Remarks
Equipment checked and calibration carried out in accordance with BS EN ISO 22476-3: 2005

-/- Blows/penetration (mm) after seating
-*/- Total blows/penetration (mm)
SWP Penetration under own weight (mm)

S - Standard Penetration Test (SPT)
C - SPT with cone
L - Split Spoon with liner used

GEOTECHNICS

Fieldwork Results - SPT Results Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No** PC197626

Client HIGHWAYS ENGLAND

Hole	Depth m bgl	Level m OD	Type	SWP (mm)	Seating Drive 0-75 (mm)	Seating Drive 75-150 (mm)	Test Drive 0-75 (mm)	Test Drive 75-150 (mm)	Test Drive 150-225 (mm)	Test Drive 225-300 (mm)	SPT 'N' Value	Uncorrected SPT 'N' 10 20 30 40 50
R71811	37.00	62.95	C	-	12	13/45	26	32	42/20		100/170	>
R71811	38.50	61.45	C	-	7	18/65	41	34	25/50		100/200	>
R71811	40.00	59.95	C	-	5	20	44	42	14/10		100/160	>
R71811	41.50	58.45	C	-	4	21/70	81	19/10			100/85	>
R71811	43.00	56.95	C	-	10	15/15	92	8/5			100/80	>
R71811	44.50	55.45	C	-	16	9/10	81	19/5			100/80	>
R71811	46.00	53.95	C	-	25/65		100/60				100/60	>
R71811	47.50	52.45	C	-	25/70		100/60				100/60	>
R71811	49.00	50.95	C	-	25/35		100/55				100/55	>
R71811	50.50	49.45	C	-	9	16/25	73	27/20			100/95	>

Driller	Stuart Proudlock
Hammer No.	SPT2
Energy Ratio, Er (%)	53.00
Calibration Date	09/05/2019

Remarks
Equipment checked and calibration carried out in accordance with BS EN ISO 22476-3: 2005

-/- Blows/penetration (mm) after seating
-*/- Total blows/penetration (mm)
SWP Penetration under own weight (mm)

S - Standard Penetration Test (SPT)
C - SPT with cone
L - Split Spoon with liner used

GEOTECHNICS

Fieldwork Results - SPT Results Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No** PC197626

Client HIGHWAYS ENGLAND

Hole	Depth m bgl	Level m OD	Type	SWP (mm)	Seating Drive 0-75 (mm)	Seating Drive 75-150 (mm)	Test Drive 0-75 (mm)	Test Drive 75-150 (mm)	Test Drive 150-225 (mm)	Test Drive 225-300 (mm)	SPT 'N' Value	Uncorrected SPT 'N' 10 20 30 40 50
R71815	9.00	88.36	S	-	15/10	70	100/65				100/65	>
R71815	10.00	87.36	S	-	22	3/6	100/50				100/50	>
R71815	11.20	86.16	C	-	19	6/7	47	53/40			100/115	>
R71815	12.70	84.66	C	-	7	16	22	23	46	9/20	100/245	>

Driller	Stuart Proudlock
Hammer No.	SPT2
Energy Ratio, Er (%)	53.00
Calibration Date	09/05/2019

Remarks
Equipment checked and calibration carried out in accordance with BS EN ISO 22476-3: 2005

-/- Blows/penetration (mm) after seating
-*/- Total blows/penetration (mm)
SWP Penetration under own weight (mm)

S - Standard Penetration Test (SPT)
C - SPT with cone
L - Split Spoon with liner used

GEOTECHNICS

Fieldwork Results - SPT Results Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No** PC197626

Client HIGHWAYS ENGLAND

Hole	Depth m bgl	Level m OD	Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' 10 20 30 40 50
					0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)		
R71815	14.65	82.71	S	-	1	7	11	12	16	35	74	
R71815	16.15	81.21	S	-	5	9	12	26	27	17	82	
R71815	17.65	79.71	S	-	13	12/50	60	40/70			100/145	
R71815	19.15	78.21	C	-	5	9	22	29	35	14/10	100/235	
R71815	20.65	76.71	C	-	17	8/10	53	47/30			100/105	
R71815	22.15	75.21	C	-	2	7	18	38	41	3/1	100/226	
R71815	23.65	73.71	C	-	5	9	15	11	14	24	64	
R71815	25.15	72.21	C	-	7	18/70	17	16	21	24	78	
R71815	26.65	70.71	C	-	6	11	17	43	40/50		100/200	
R71815	28.15	69.21	C	-	6	19/30	35	43	22/10		100/160	
R71815	29.65	67.71	C	-	4	10	27	38	35/5		100/155	
R71815	31.15	66.21	C	-	20	5/1	43	57			100/150	
R71815	32.65	64.71	C	-	6	19/25	66	34/25			100/100	
R71815	34.15	63.21	C	-	15	10/25	42	37	21/50		100/200	
R71815	35.65	61.71	C	-	10	15/45	34	42	24/45		100/195	
R71815	37.15	60.21	C	-	23	2/1	55	45/25			100/100	
R71815	38.65	58.71	C	-	7	18/30	51	49/40			100/115	
R71815	40.15	57.21	C	-	14	11/20	57	43/35			100/110	
R71815	41.65	55.71	C	-	5	20/55	53	47/25			100/100	
R71815	43.15	54.21	C	-	4	21	94	6/1			100/76	
R71815	44.65	52.71	C	-	25/45		100/65				100/65	

Driller	Alex Clark
Hammer No.	DS15-3
Energy Ratio, Er (%)	68.00
Calibration Date	24/09/2018

Remarks
Equipment checked and calibration carried out in accordance with BS EN ISO 22476-3: 2005

-/- Blows/penetration (mm) after seating
-*/- Total blows/penetration (mm)
SWP Penetration under own weight (mm)

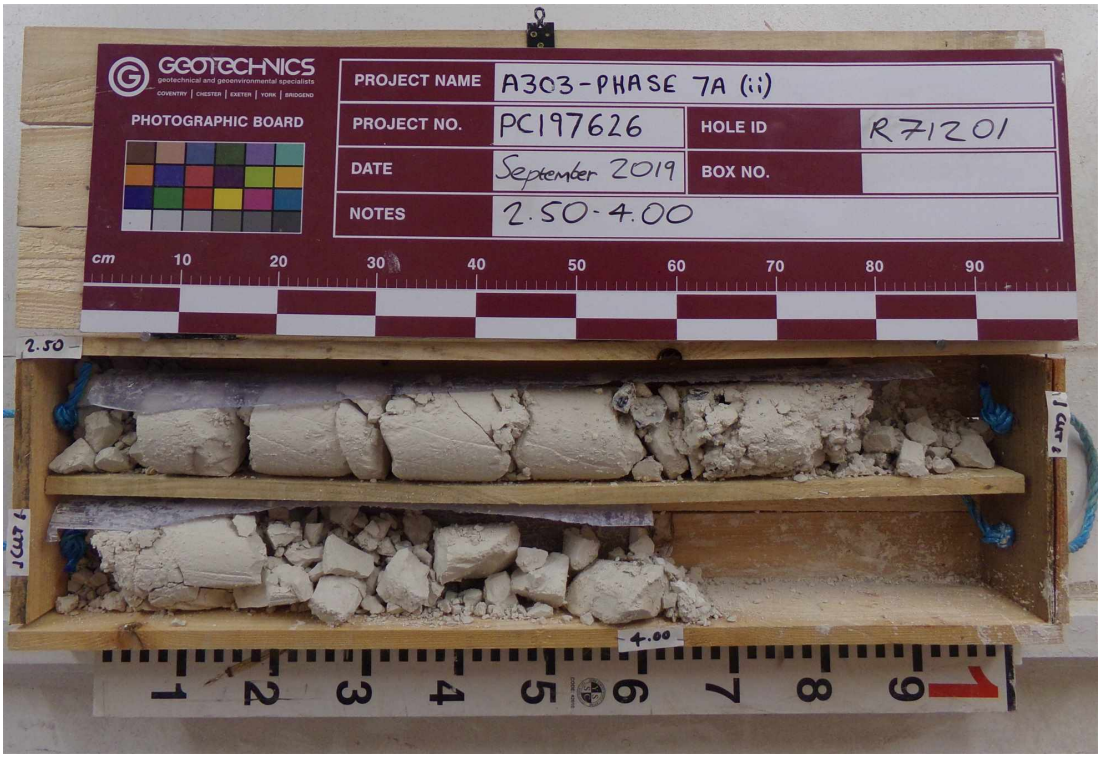
S - Standard Penetration Test (SPT)
C - SPT with cone
L - Split Spoon with liner used

GEOTECHNICS

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71201 1.20-2.50m



R71201 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71201 4.00-5.50m

R71201 5.50-7.00m

Project Number : PC197626

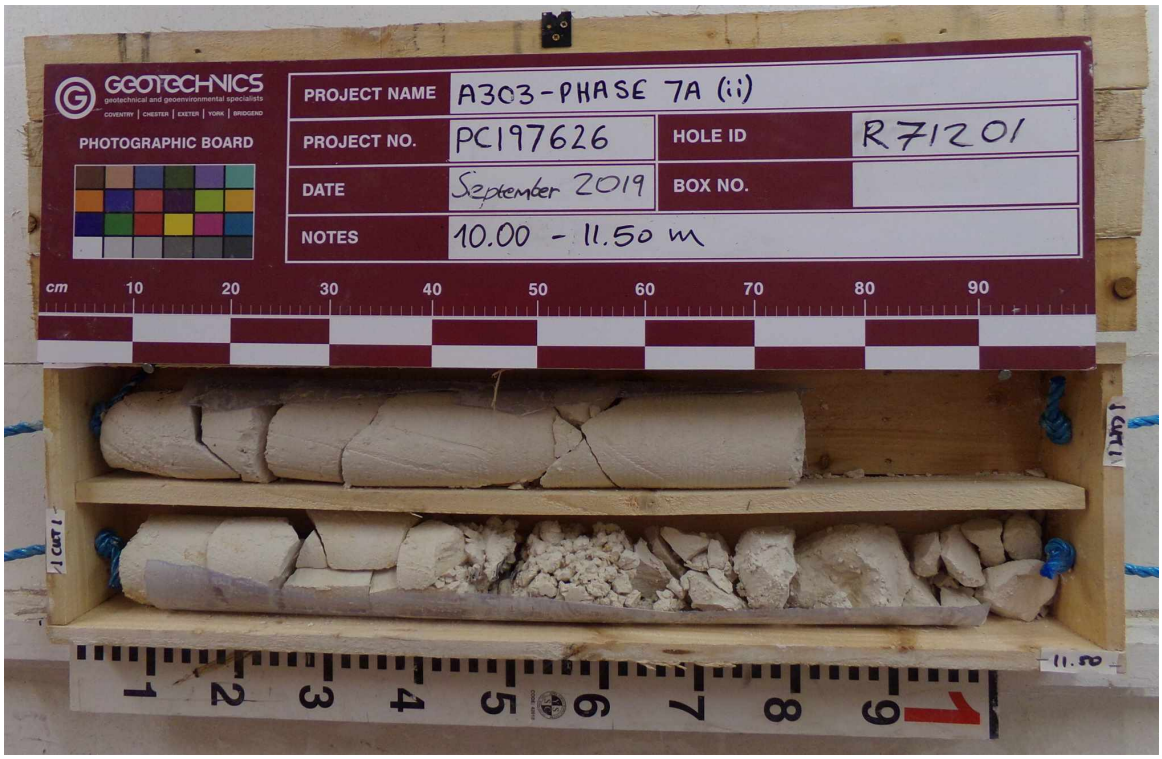
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71201 7.00-8.50m

R71201 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

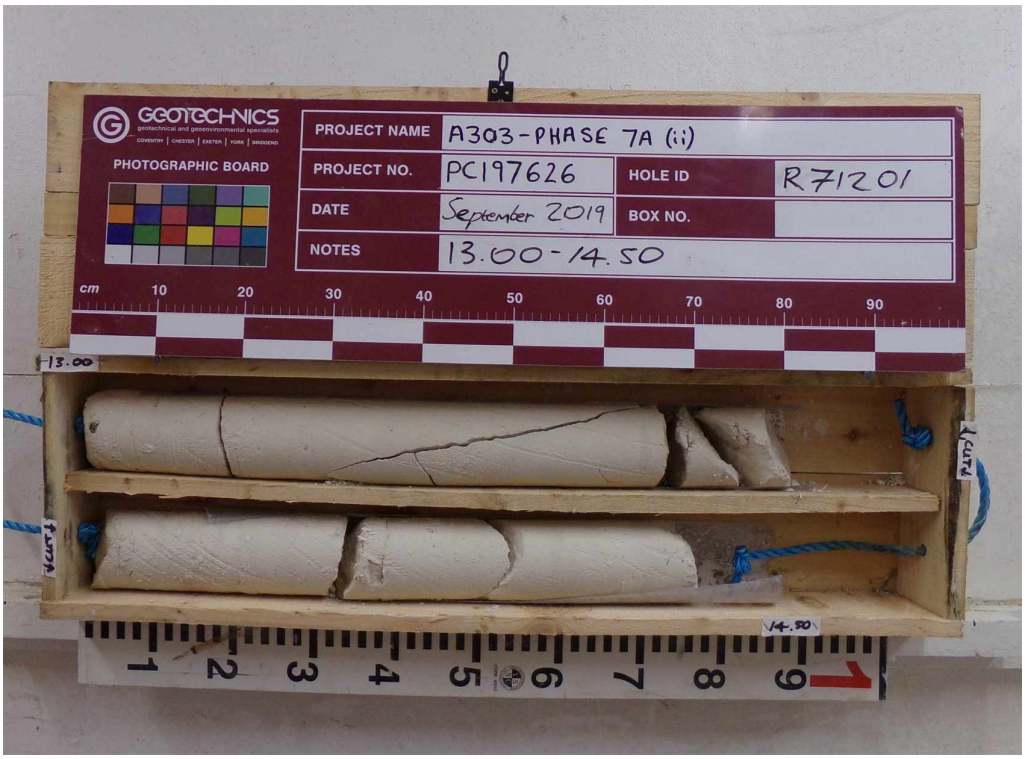


R71201 10.00-11.50m

R71201 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71201 13.00-14.50m

R71201 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71202 1.20-2.50m

R71202 2.50-4.00m

Project Number : PC197626

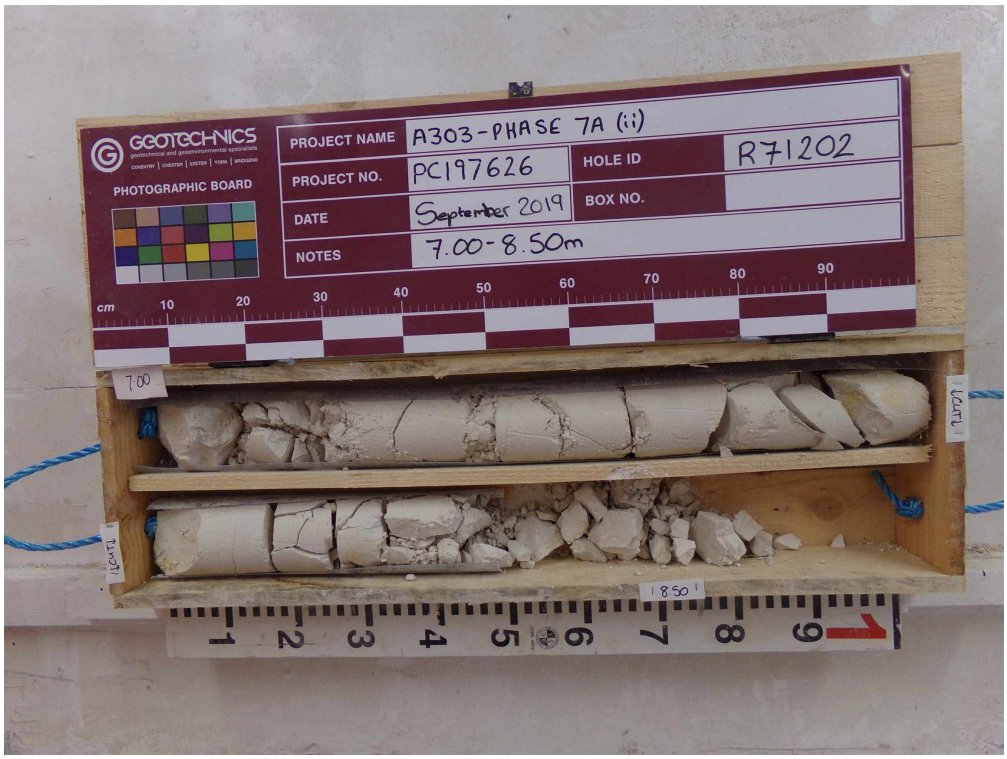
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71202 4.00-5.50m

R71202 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71202 7.00-8.50m

R71202 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71202 10.00-11.50m

R71202 11.50-13.00m

Project Number : PC197626

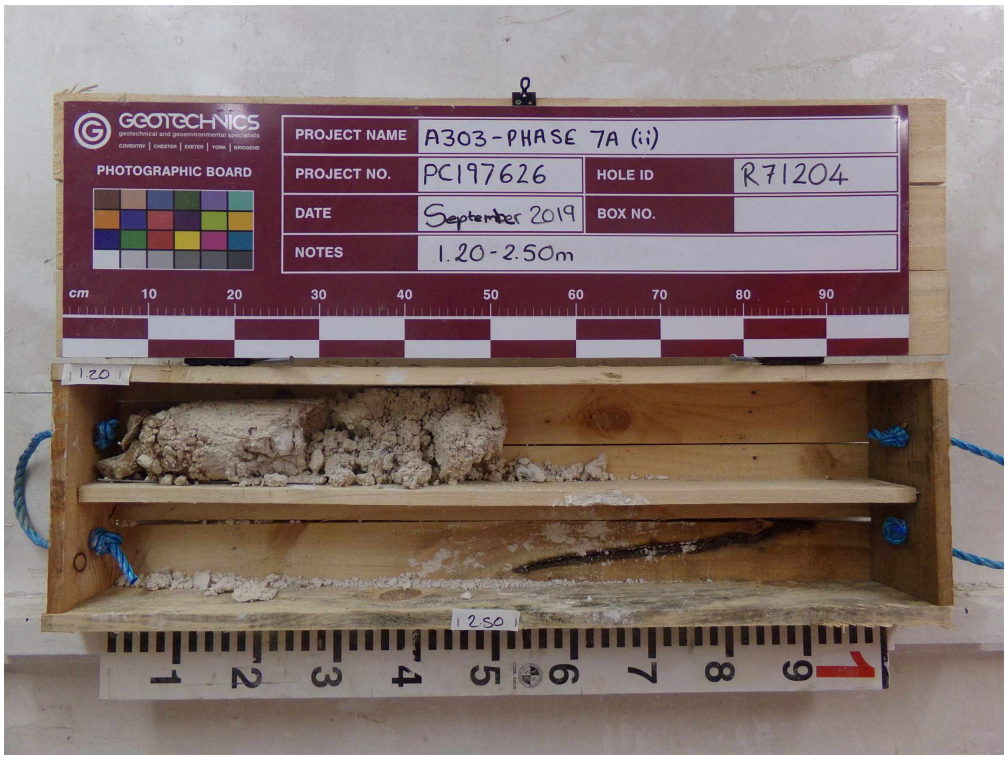
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71202 13.00-14.50m

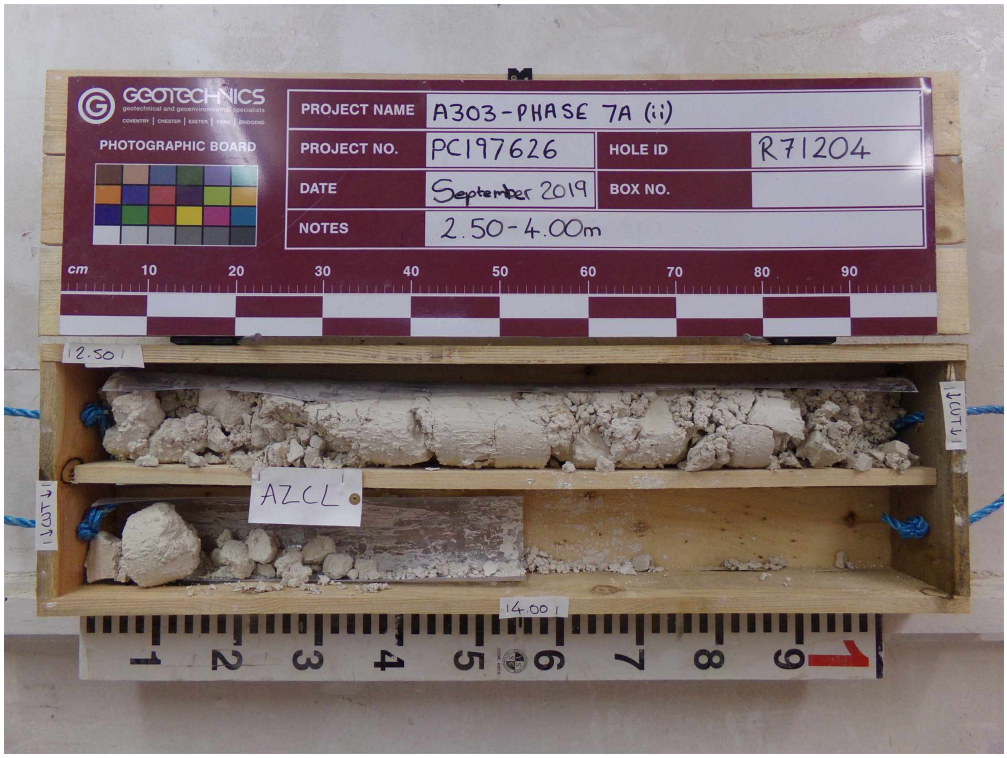
R71202 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71204 1.20-2.50m



R71204 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71204 4.00-5.50m

R71204 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

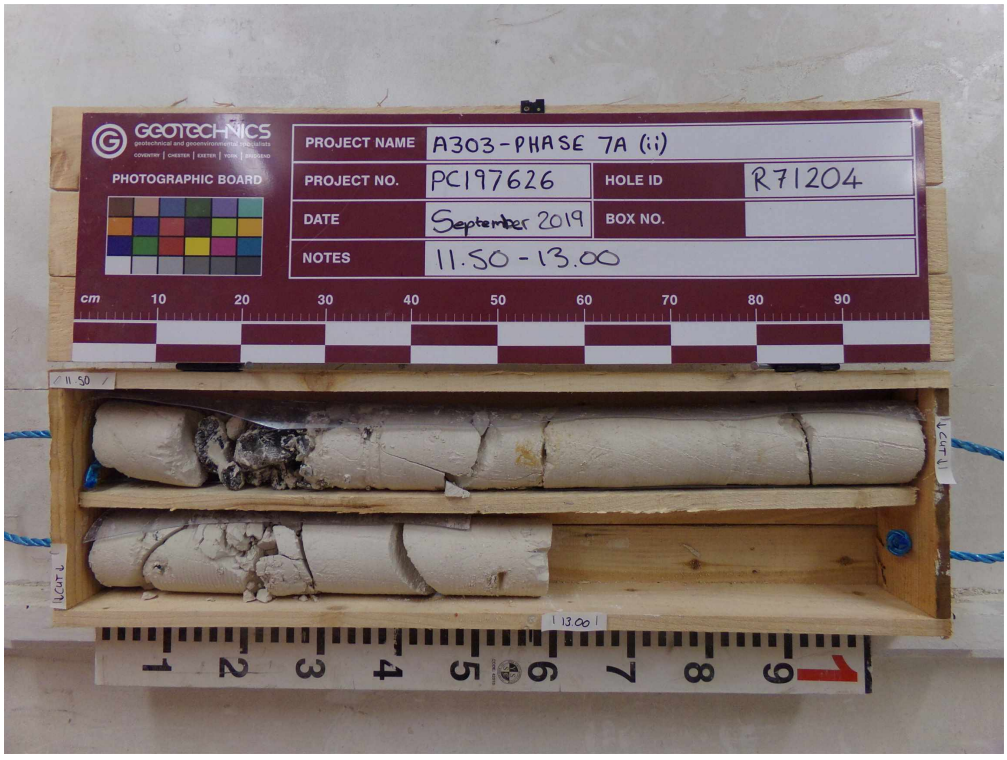
R71204 7.00-8.50m

R71204 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

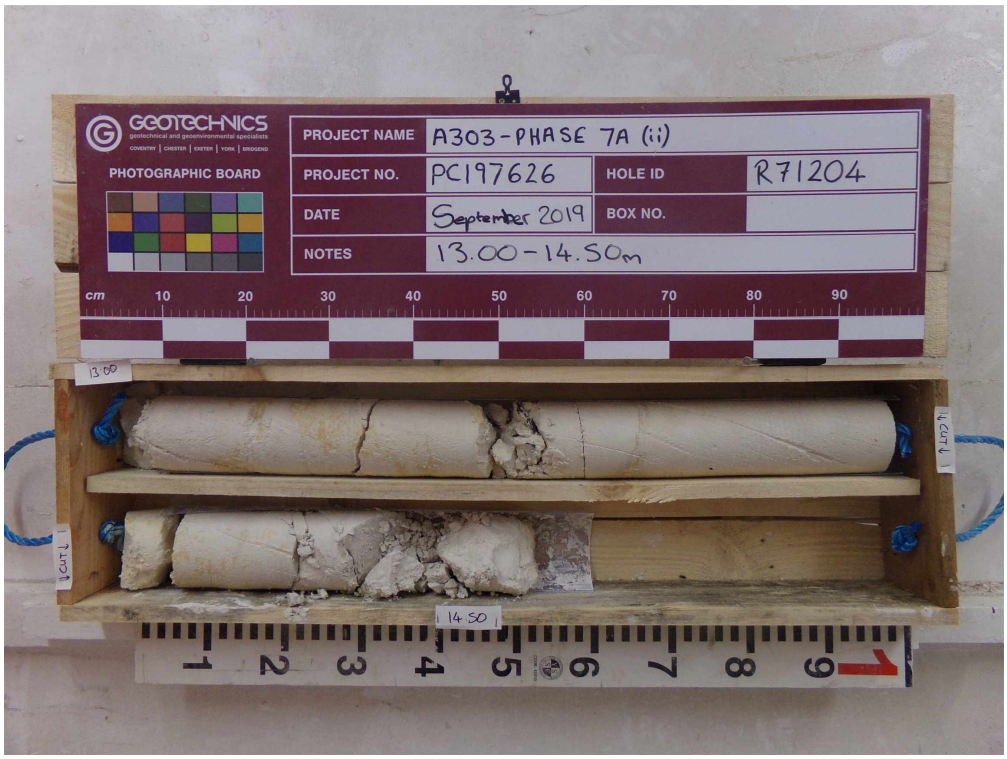
R71204 10.00-11.50m



R71204 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71204 13.00-14.50m

R71204 14.50-16.00m

Project Number : PC197626

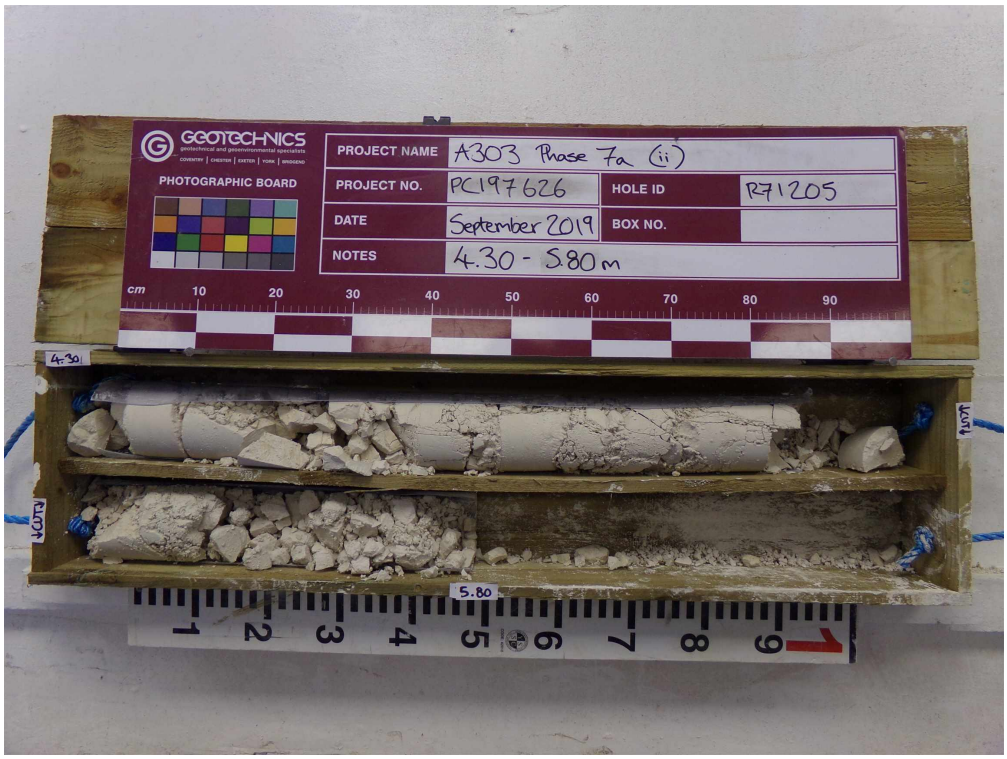
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71205 1.30-2.80m

R71205 2.80-4.30m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71205 4.30-5.80m

R71205 5.80-7.30m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71205 7.30-8.80m

R71205 8.80-10.30m

Project Number : PC197626

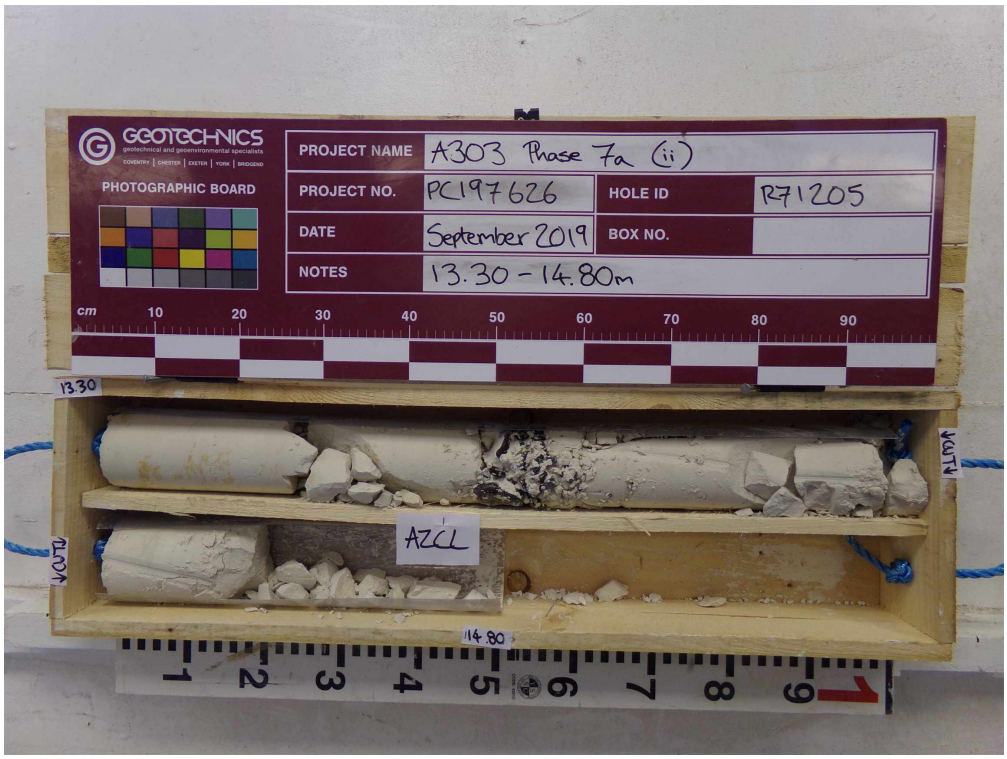
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71205 10.30-11.80m

R71205 11.80-13.30m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

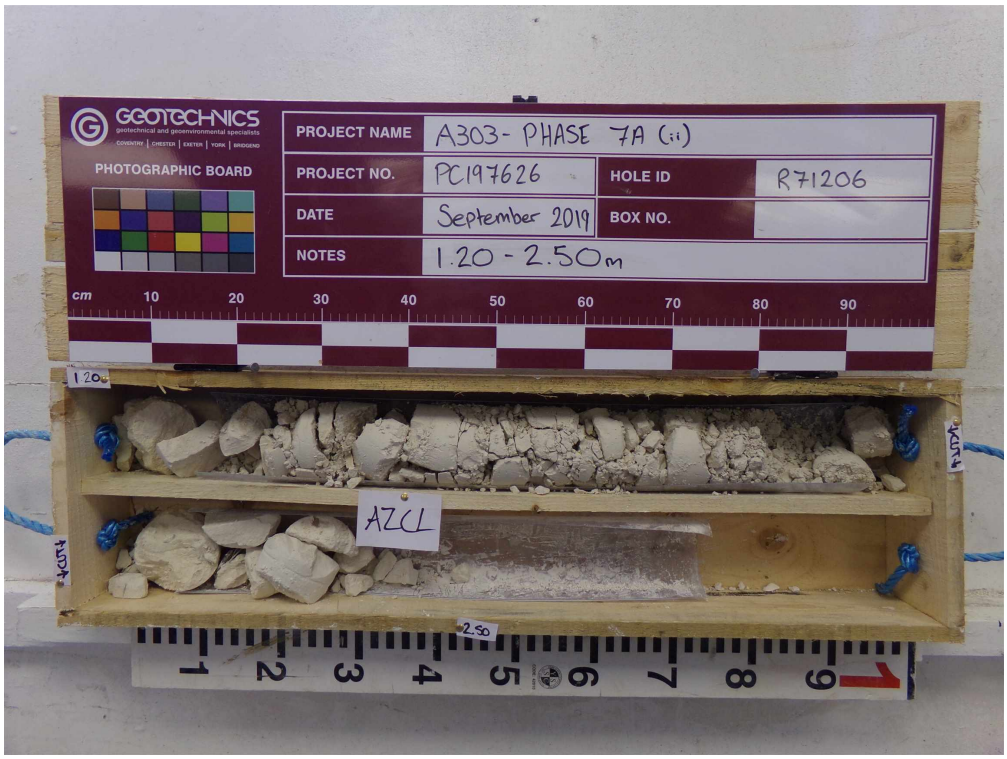


R71205 13.30-14.80m

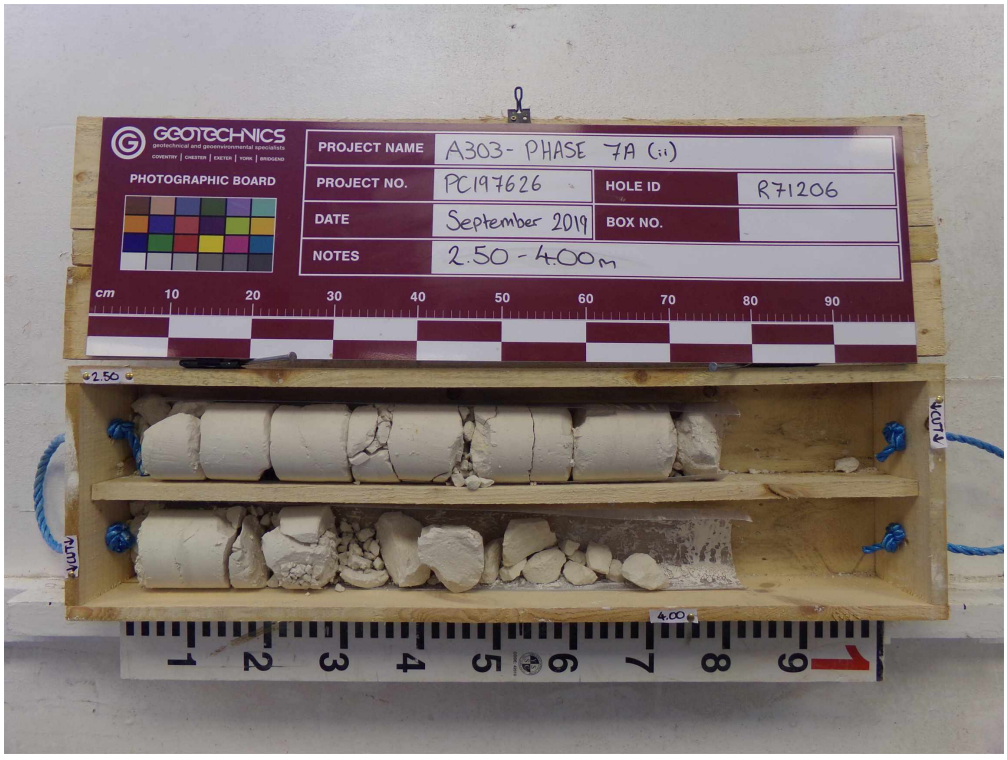
R71205 14.80-15.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71206 1.20-2.50m



R71206 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71206 4.00-5.50m

R71206 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

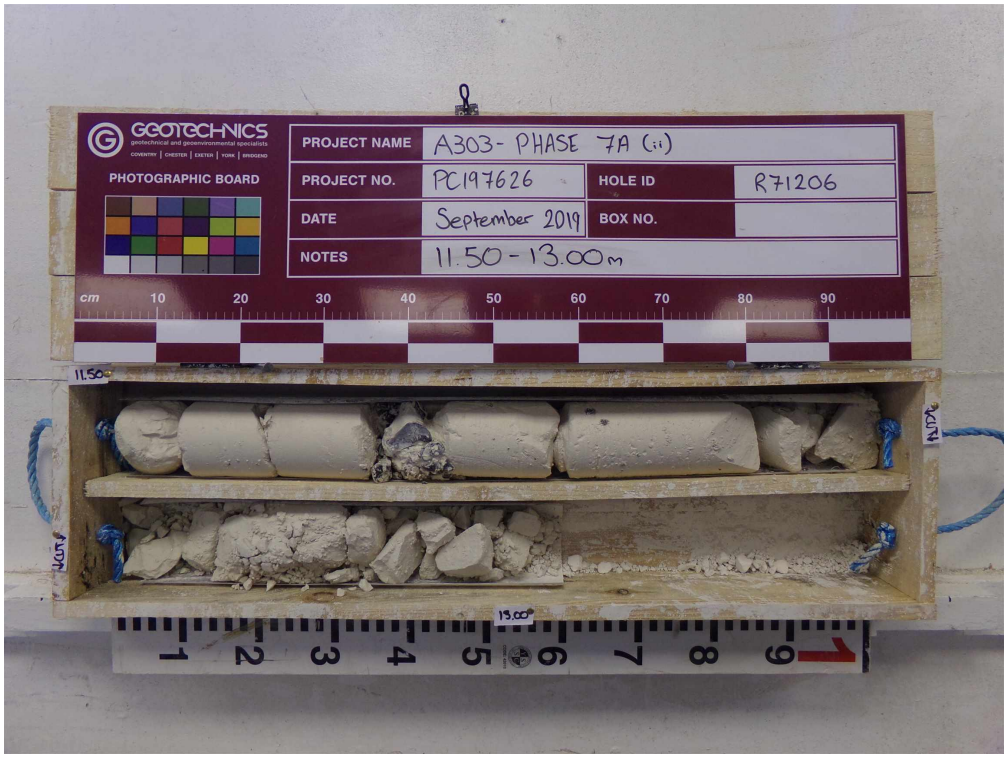
R71206 7.00-8.50m

R71206 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71206 10.00-11.50m



R71206 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

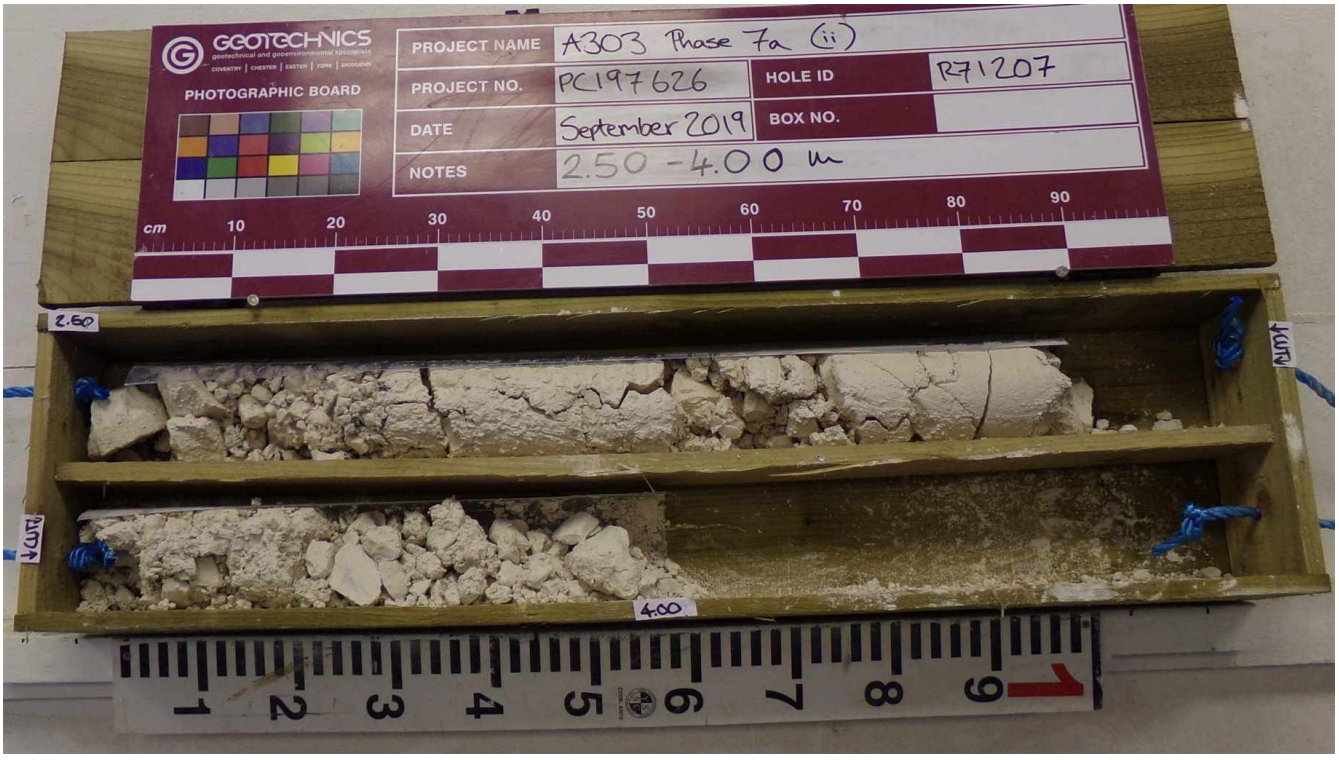
R71206 13.00-14.50m

R71206 14.50-15.30m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

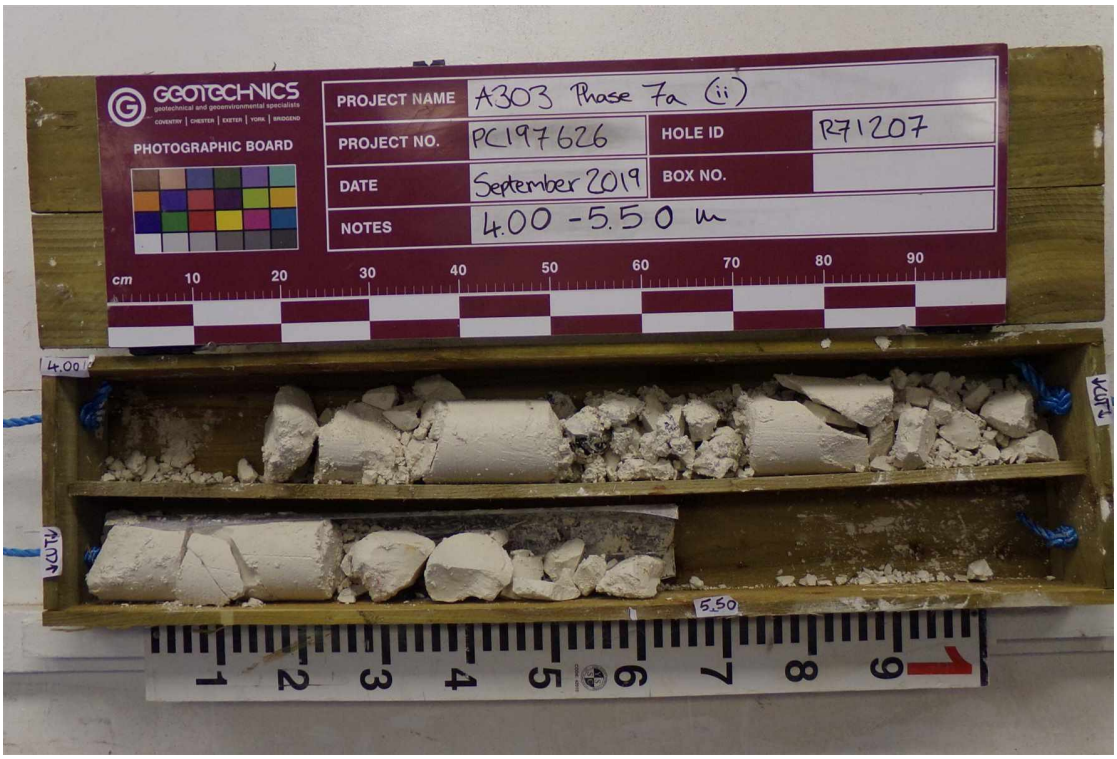
R71207 1.20-2.50m



R71207 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

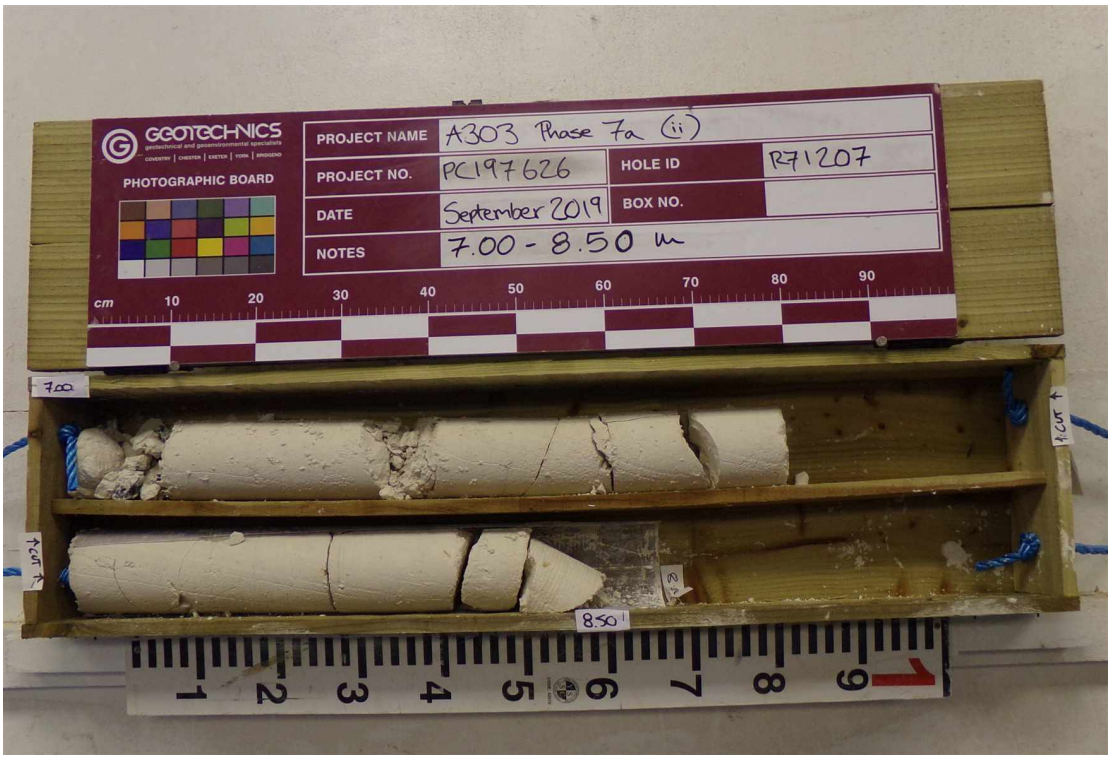


R71207 4.00-5.50m

R71207 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



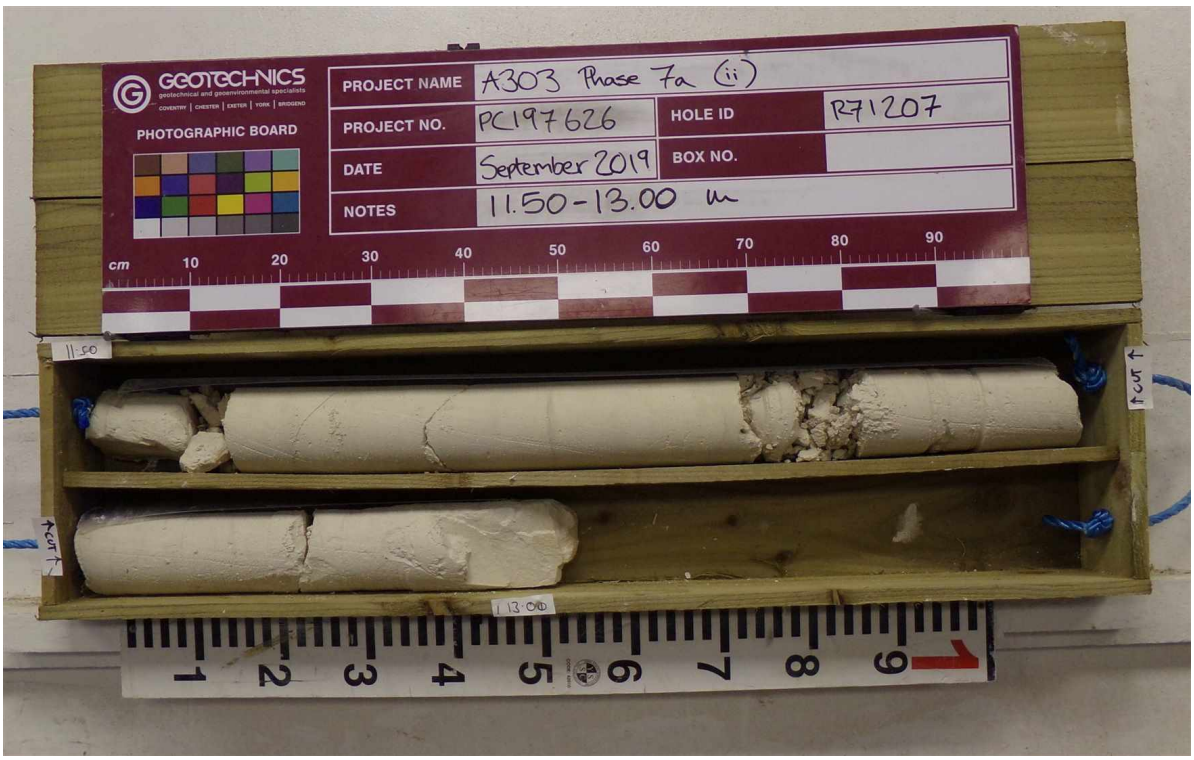
R71207 7.00-8.50m

R71207 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71207 10.00-11.50m



R71207 11.50-13.00m

Project Number : PC197626

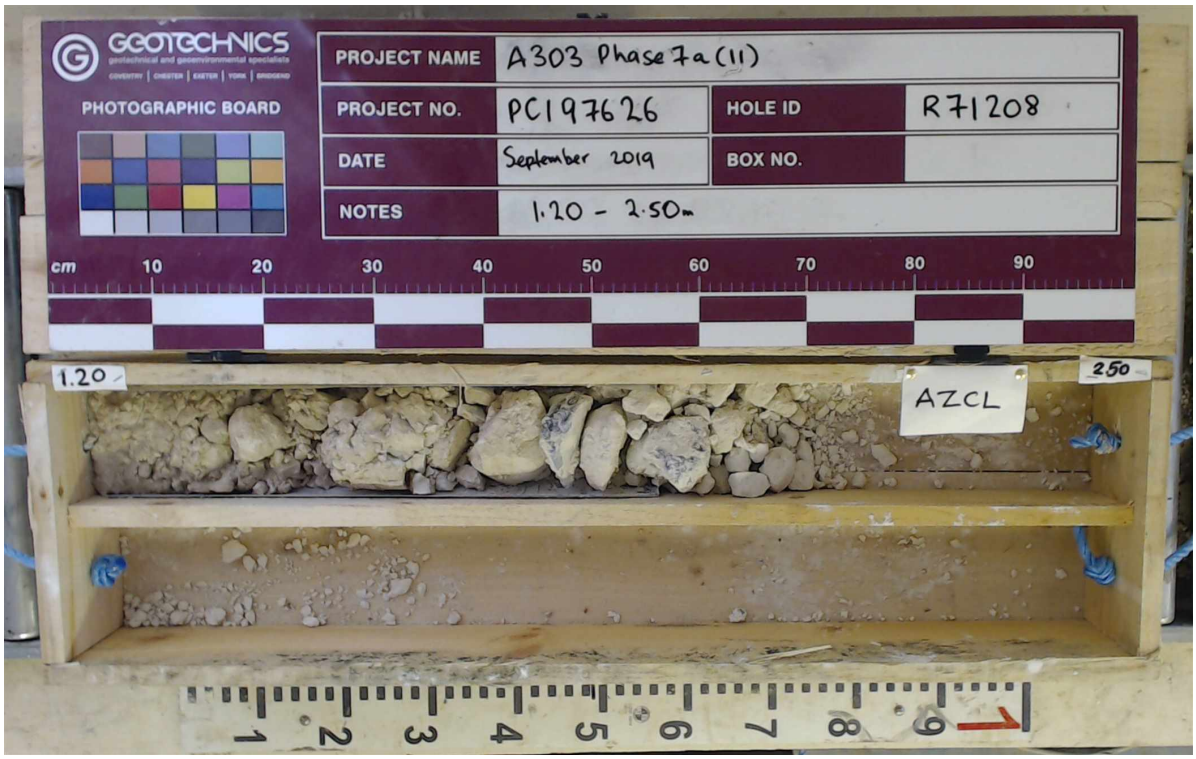
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71207 13.00-14.50m

R71207 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71208 1.20-2.50m

R71208 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71208 4.00-5.50m

R71208 5.50-7.00m

Project Number : PC197626

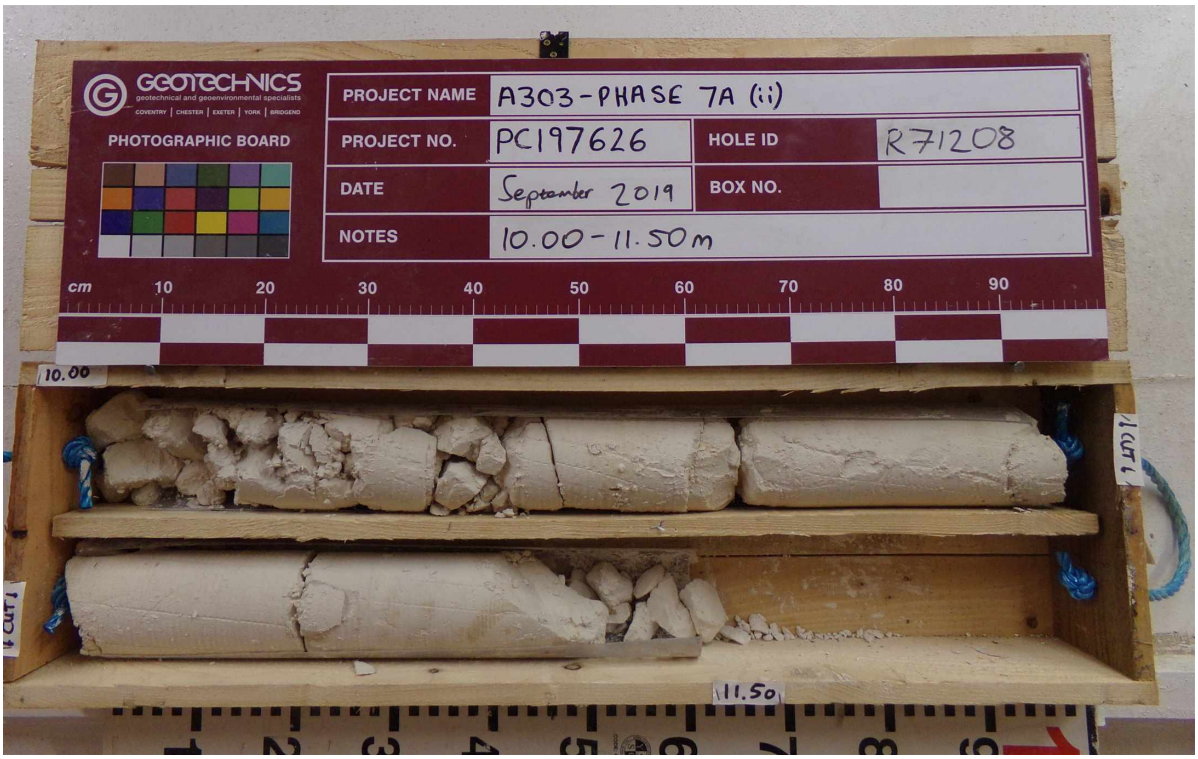
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71208 7.00-8.50m

R71208 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71208 10.00-11.50m

R71208 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71208 13.00-14.50m

R71208 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71209 1.20-2.50m

R71209 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71209 4.00-5.50m

R71209 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71209 7.00-8.50m

R71209 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

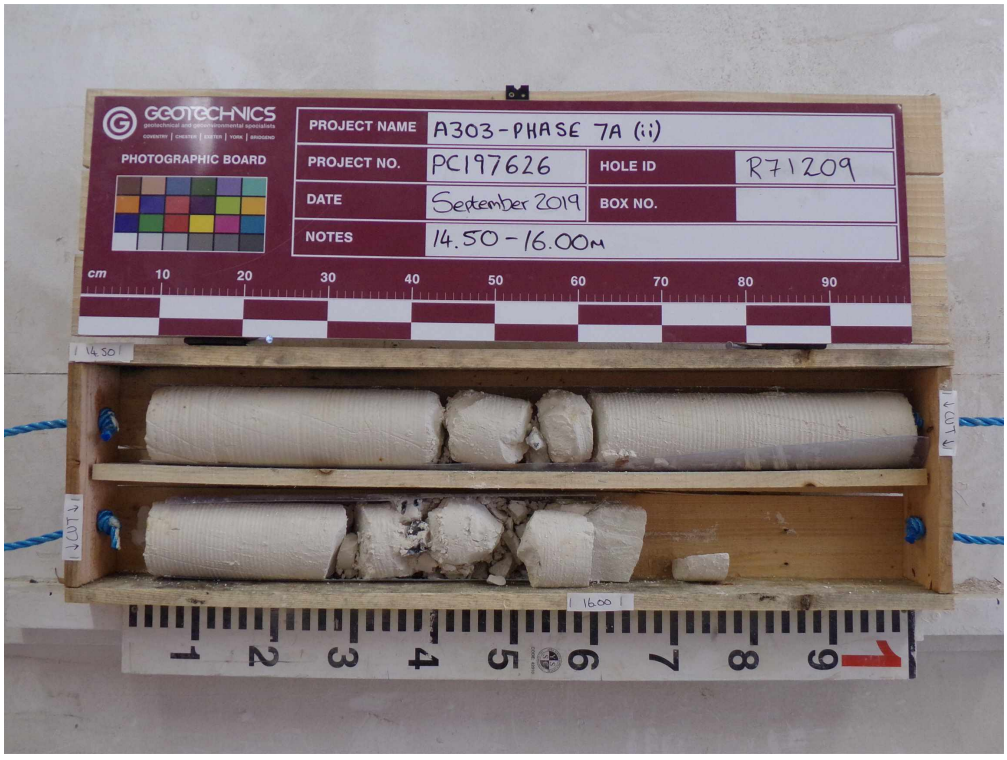
R71209 10.00-11.50m

R71209 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71209 13.00-14.50m



R71209 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71211 1.20-3.00m

R71211 3.00-3.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71211 3.90-5.40m

R71211 5.40-6.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

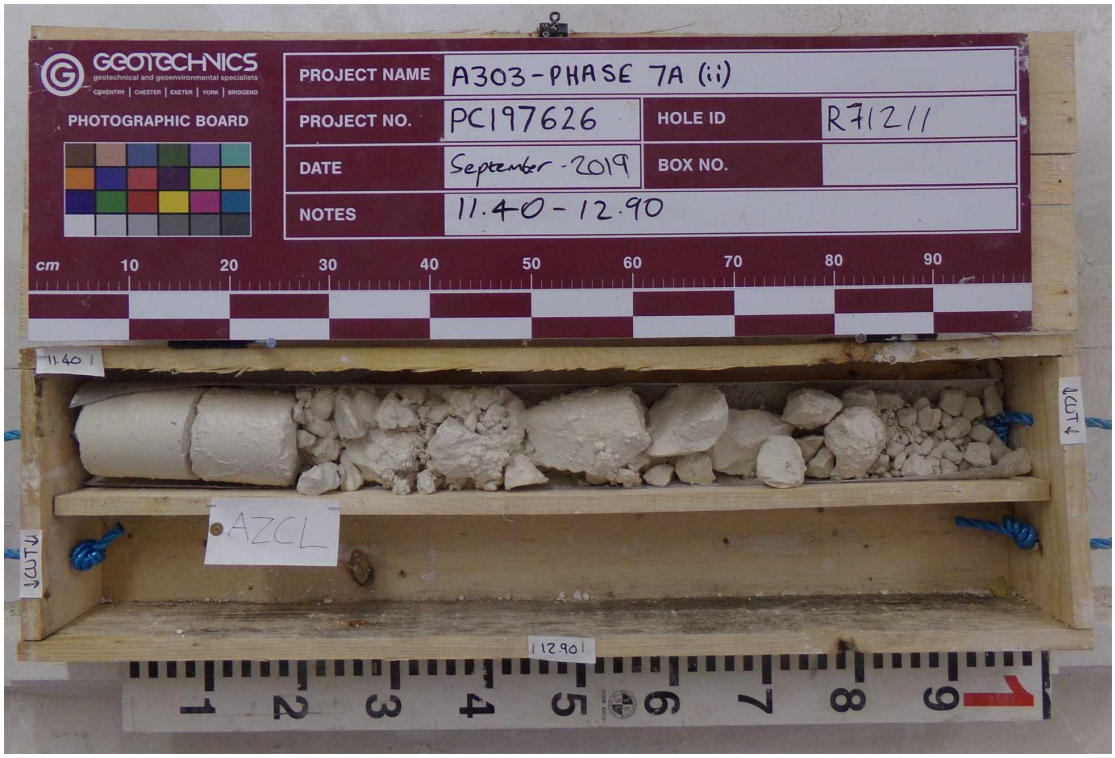
R71211 6.90-8.40m

R71211 8.40-9.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71211 9.90-11.40m

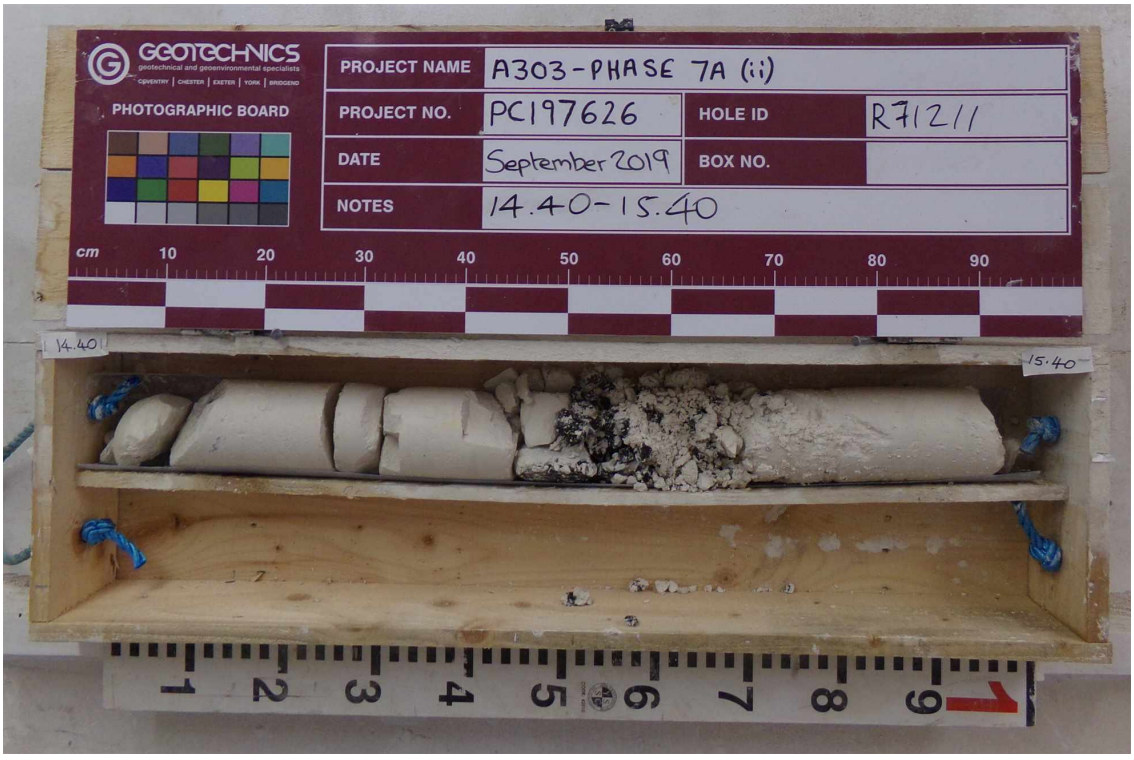


R71211 11.40-12.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

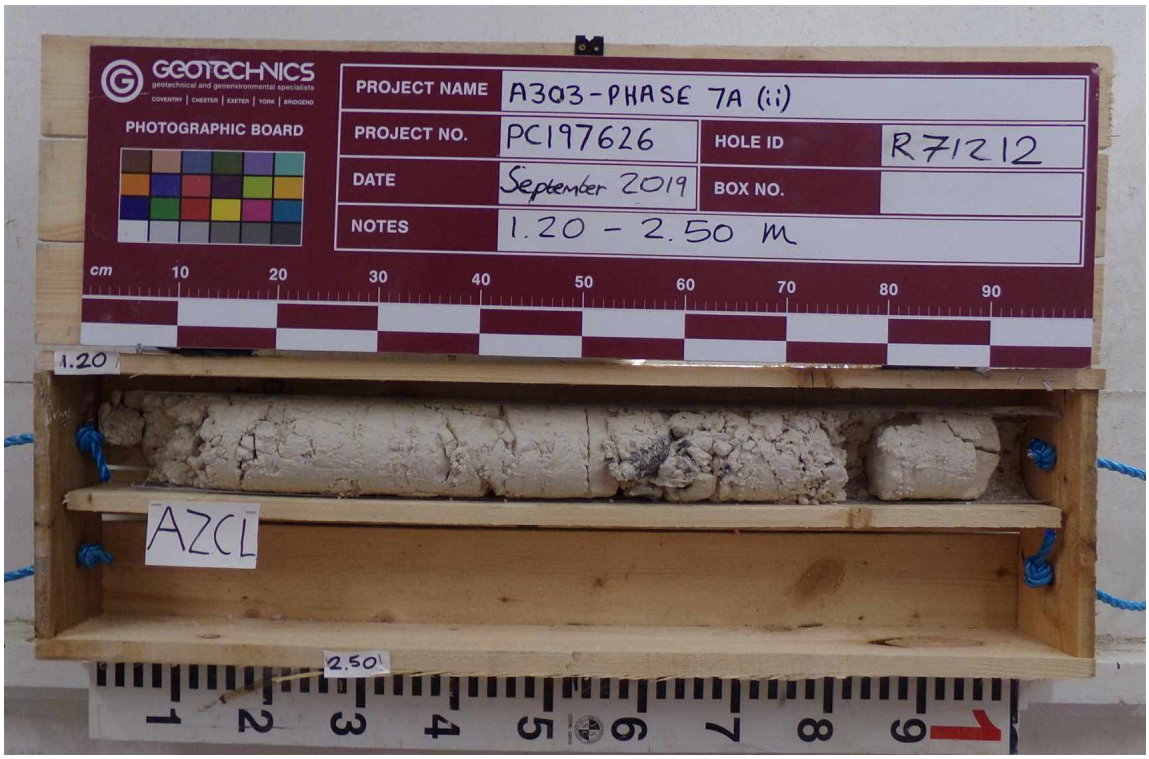
R71211 12.90-14.40m



R71211 14.40-15.40m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

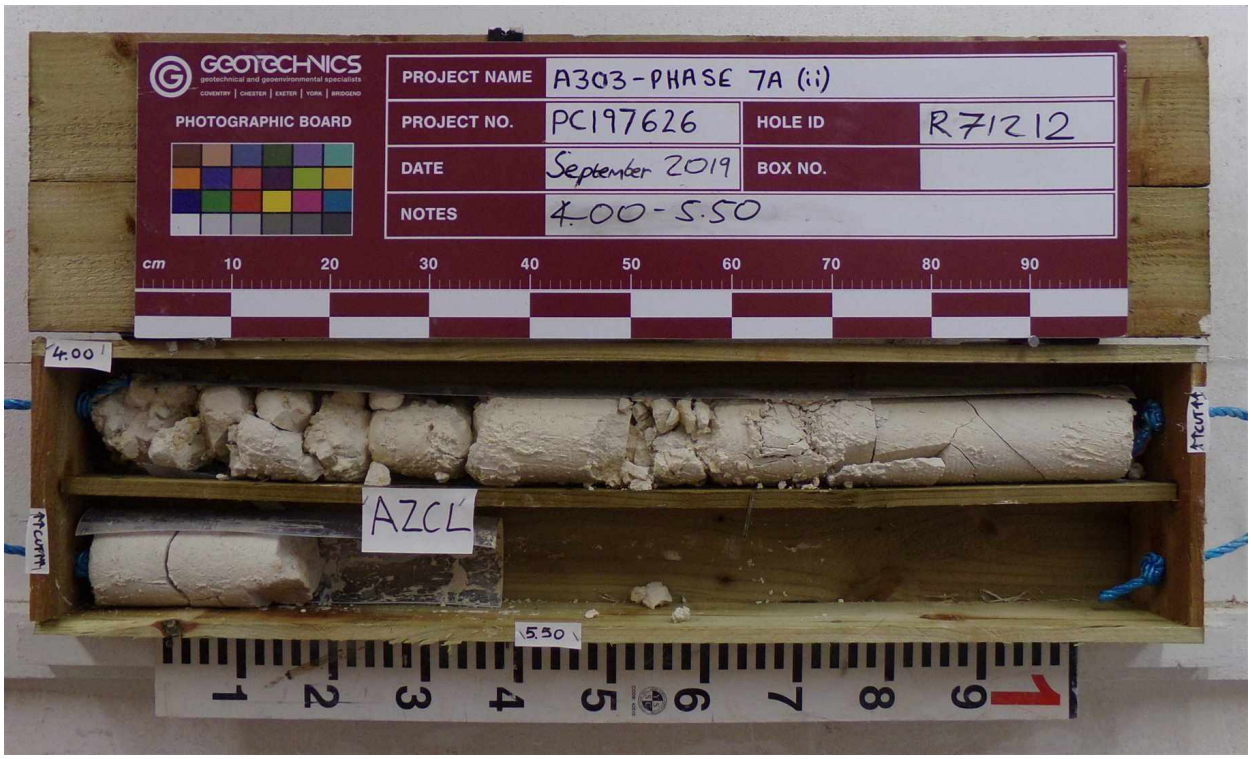


R71212 1.20-2.50m

R71212 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71212 4.00-5.50m

R71212 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

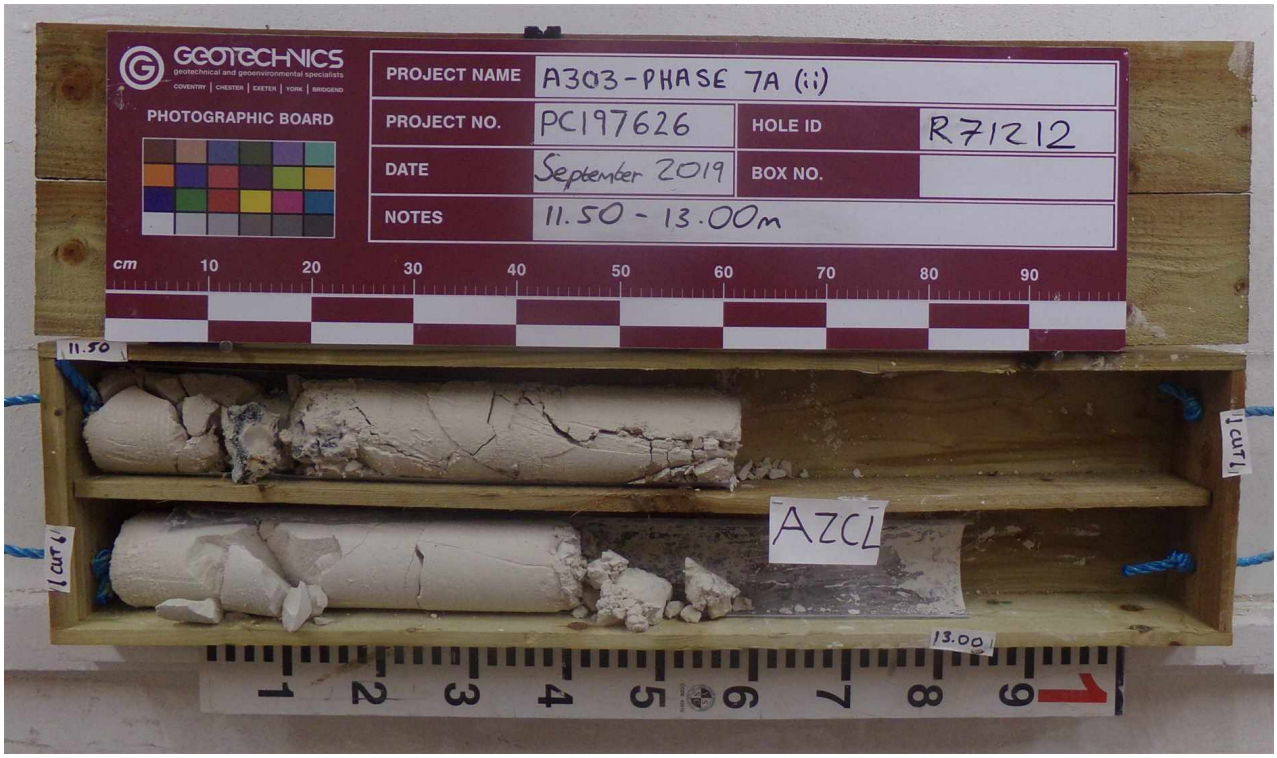
R71212 7.00-8.50m

R71212 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71212 10.00-11.50m



R71212 11.50-13.00m

PHOTOGRAPHS

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71212 13.00-14.50m

R71212 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71213 1.20-2.50m

R71213 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

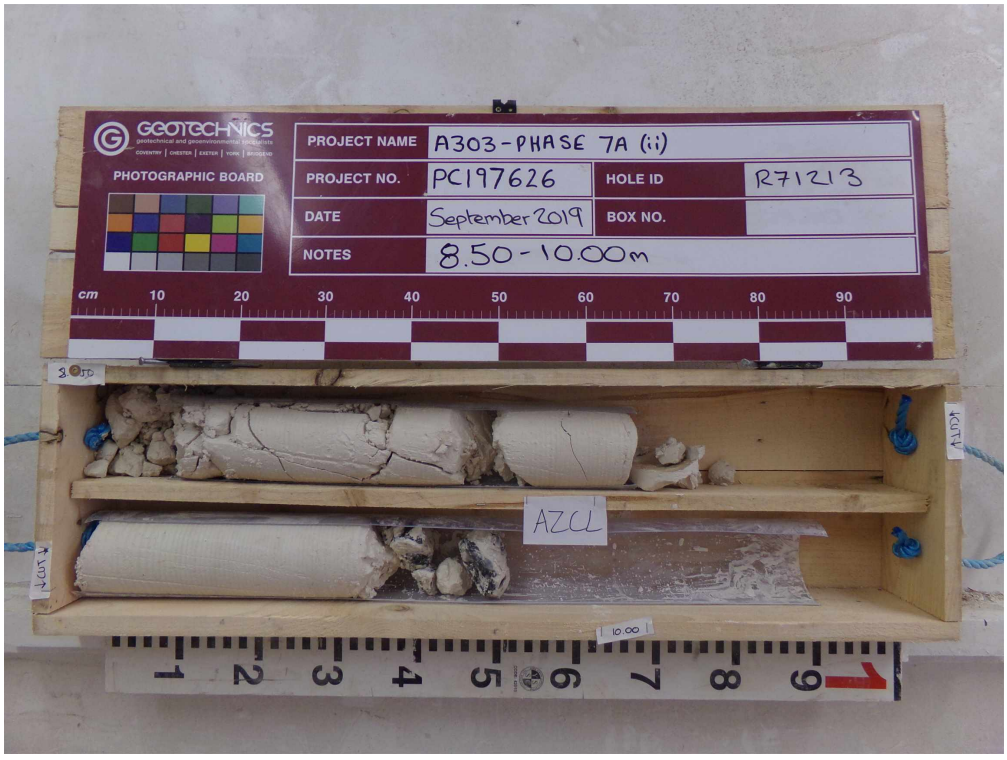
R71213 4.00-5.50m

R71213 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71213 7.00-8.50m



R71213 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71213 10.00-11.50m

R71213 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71213 13.00-14.50m

R71213 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71802 1.20-2.10m

R71802 2.10-3.60m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71802 3.60-5.10m

R71802 5.10-6.60m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71802 6.60-8.10m

R71802 8.10-9.60m

Project Number : PC197626

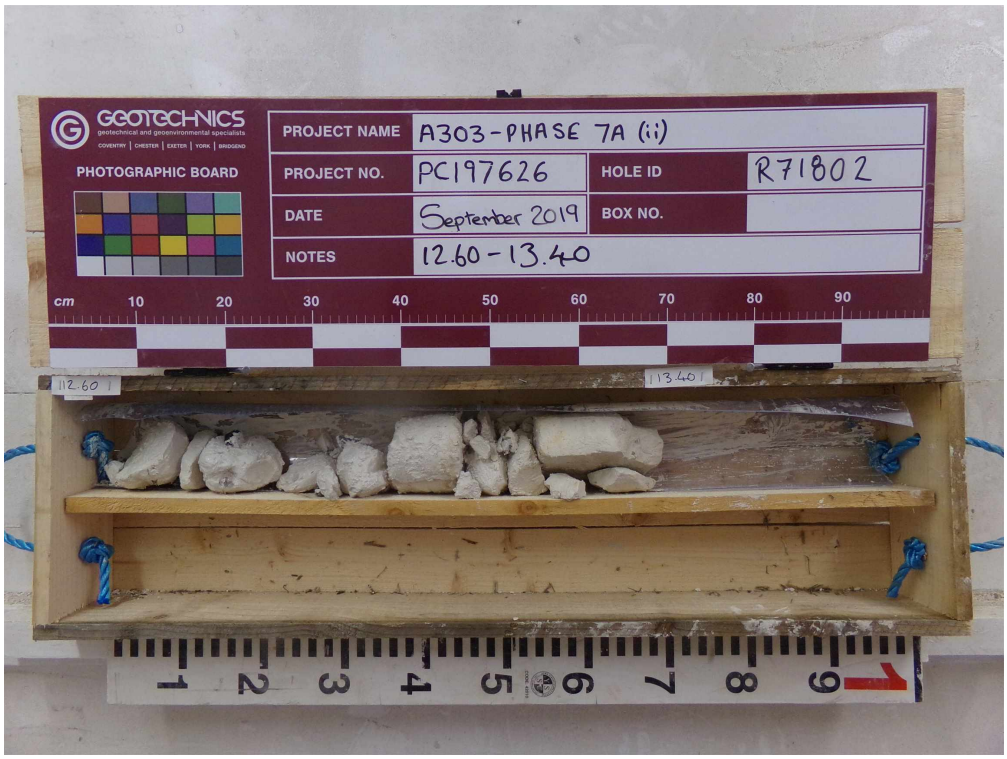
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71802 9.60-11.10m

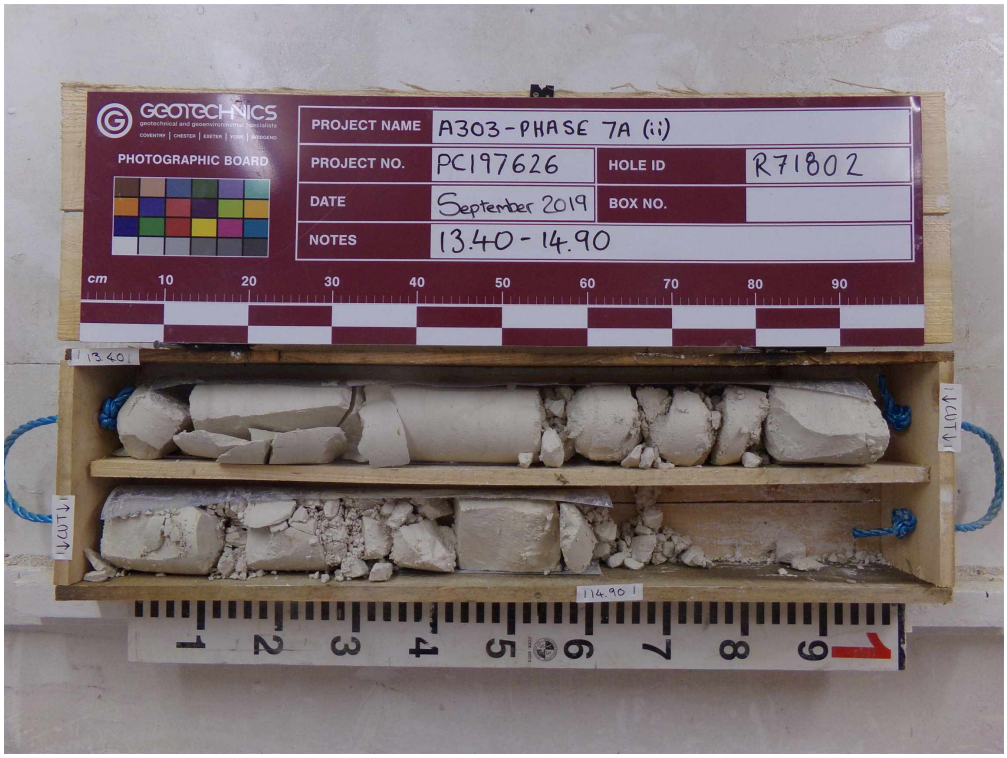
R71802 11.10-12.60m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71802 12.60-13.40m

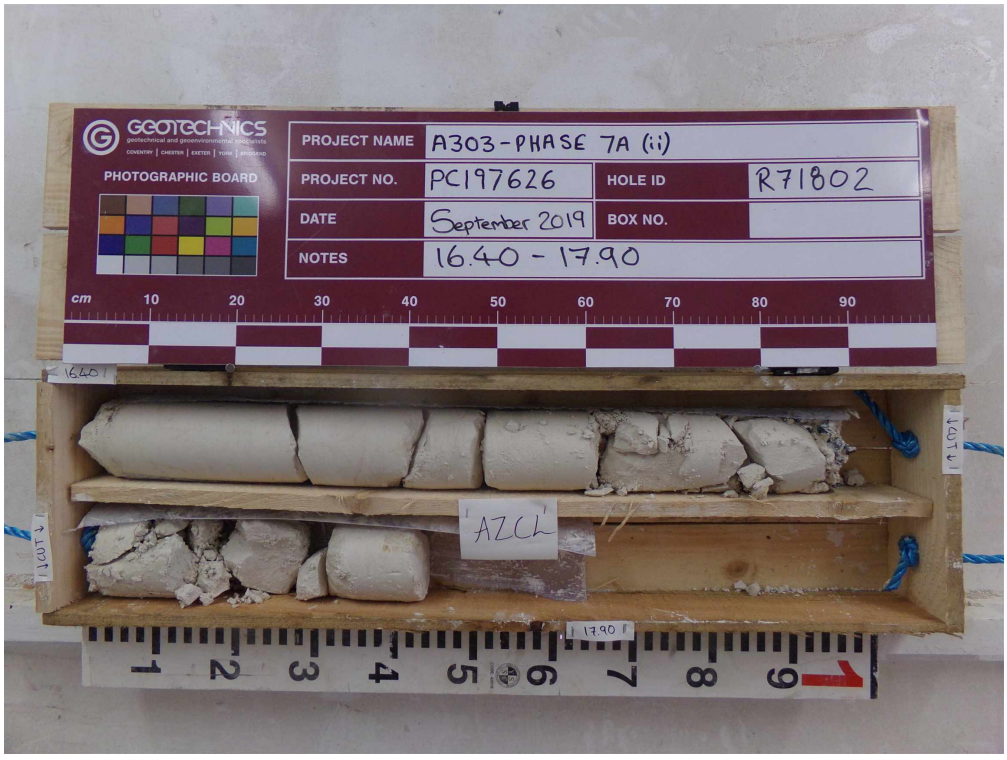


R71802 13.40-14.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71802 14.90-16.40m



R71802 16.40-17.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

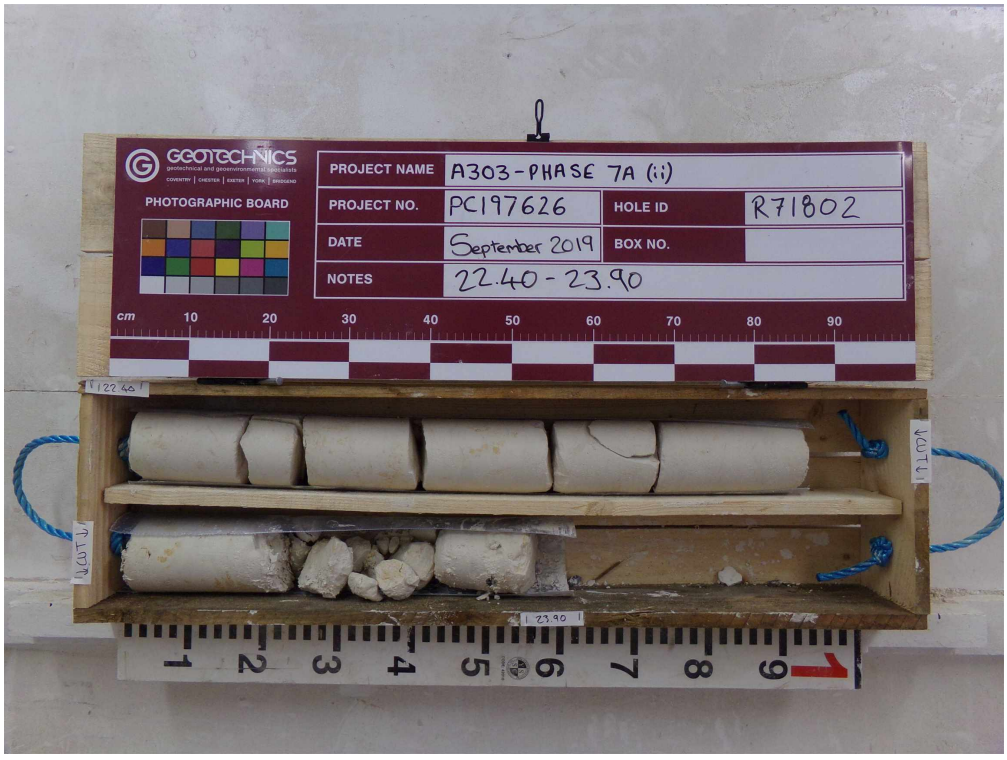
R71802 17.90-19.40m

R71802 19.40-20.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71802 20.90-22.40m



R71802 22.40-23.90m

Project Number : PC197626

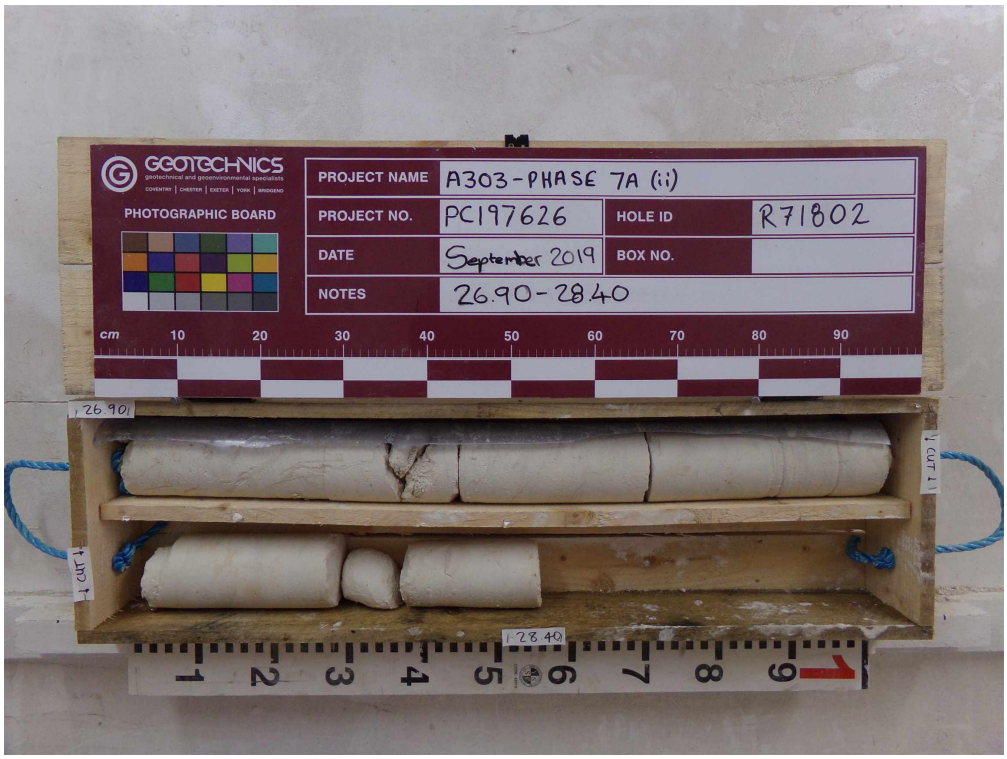
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71802 23.90-25.40m

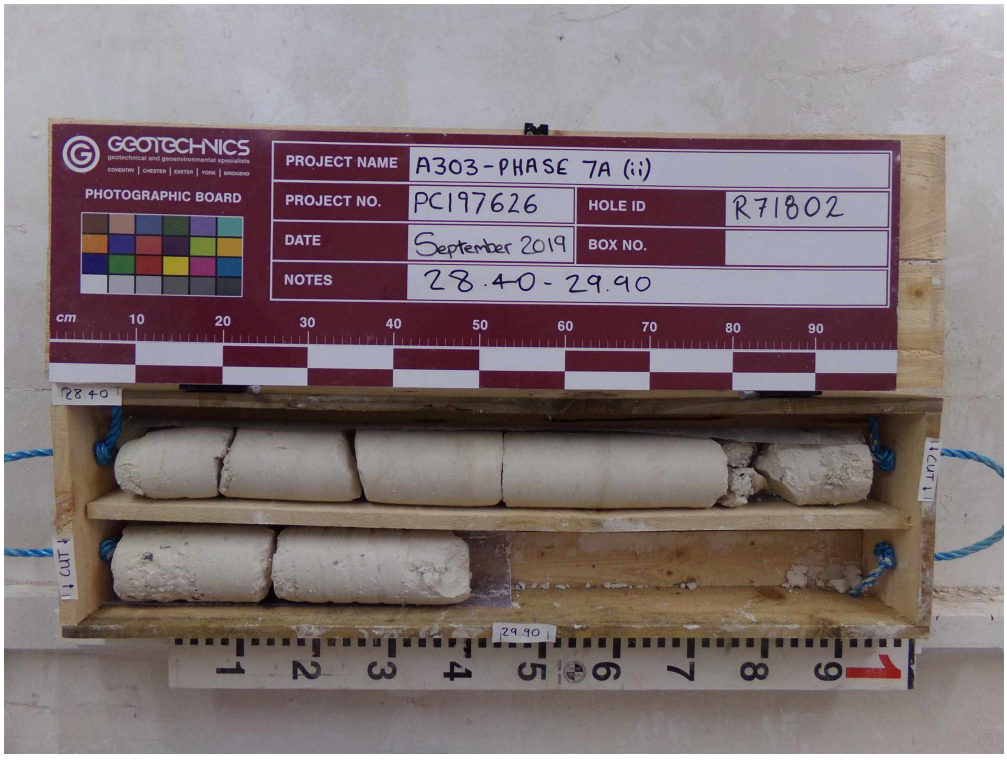
R71802 25.40-26.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



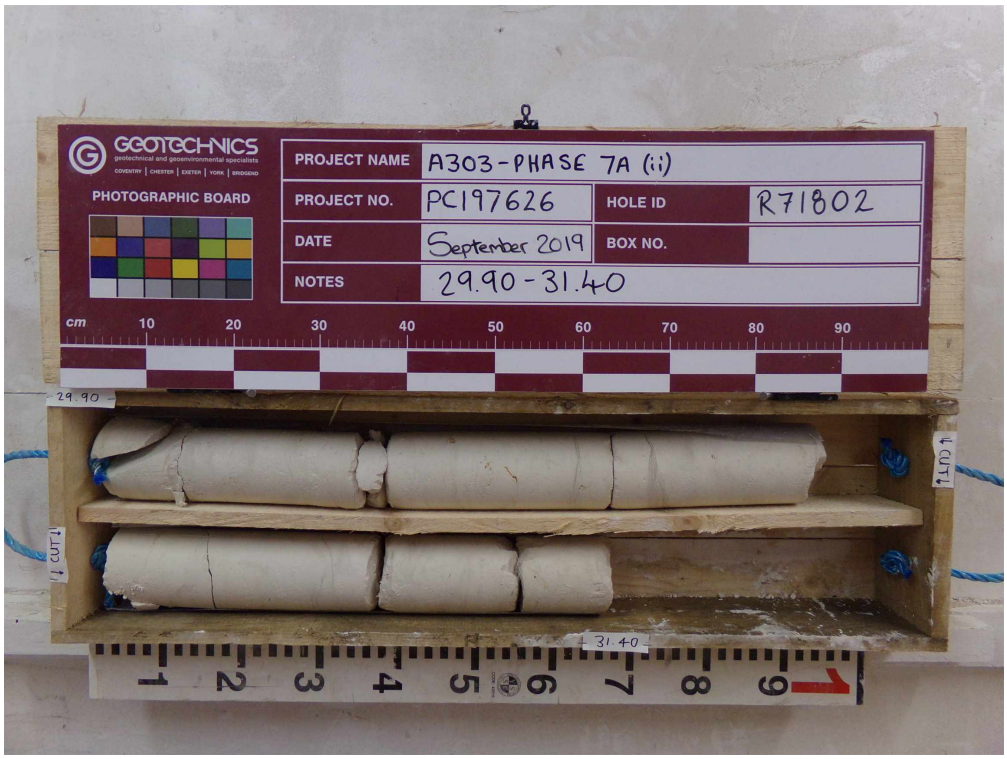
R71802 26.90-28.40m



R71802 28.40-29.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

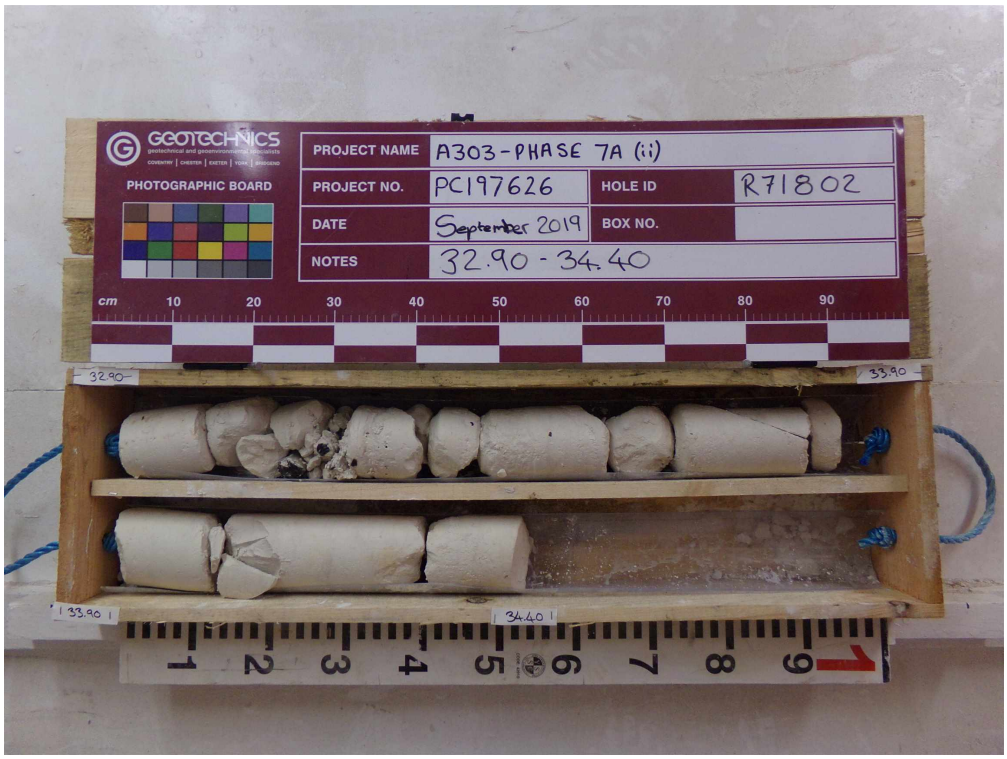


R71802 29.90-31.40m

R71802 31.40-32.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71802 32.90-34.40m

R71802 34.40-35.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

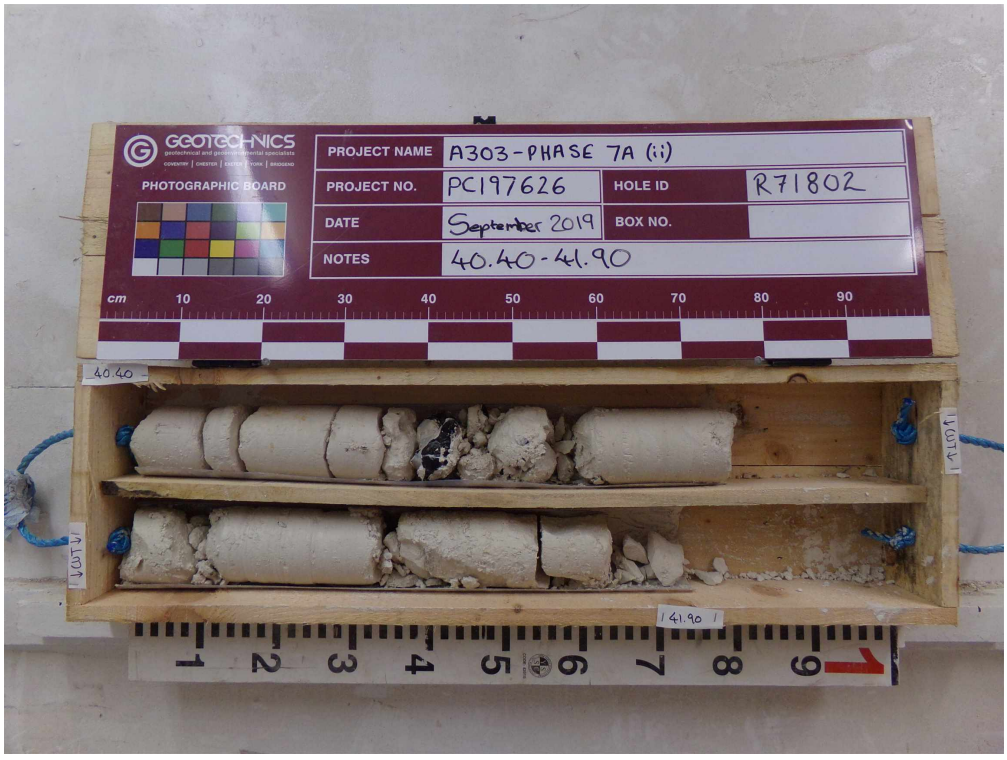
R71802 35.90-37.40m

R71802 37.40-38.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

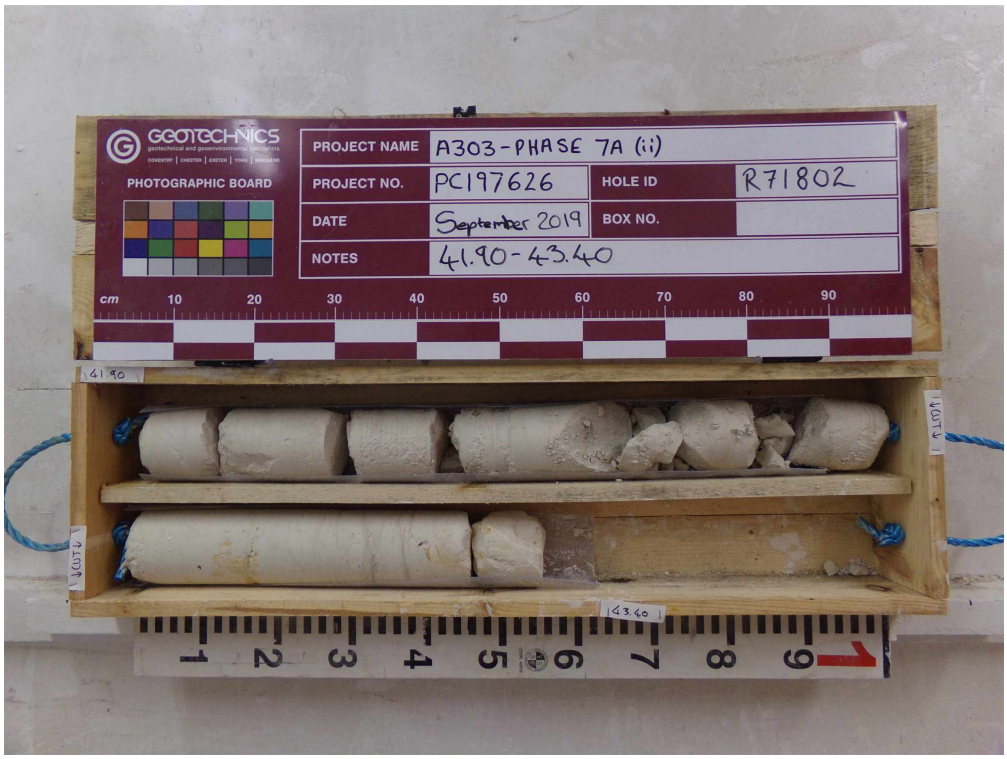
R71802 38.90-40.40m



R71802 40.40-41.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71802 41.90-43.40m

R71802 43.40-44.90m

Project Number : PC197626

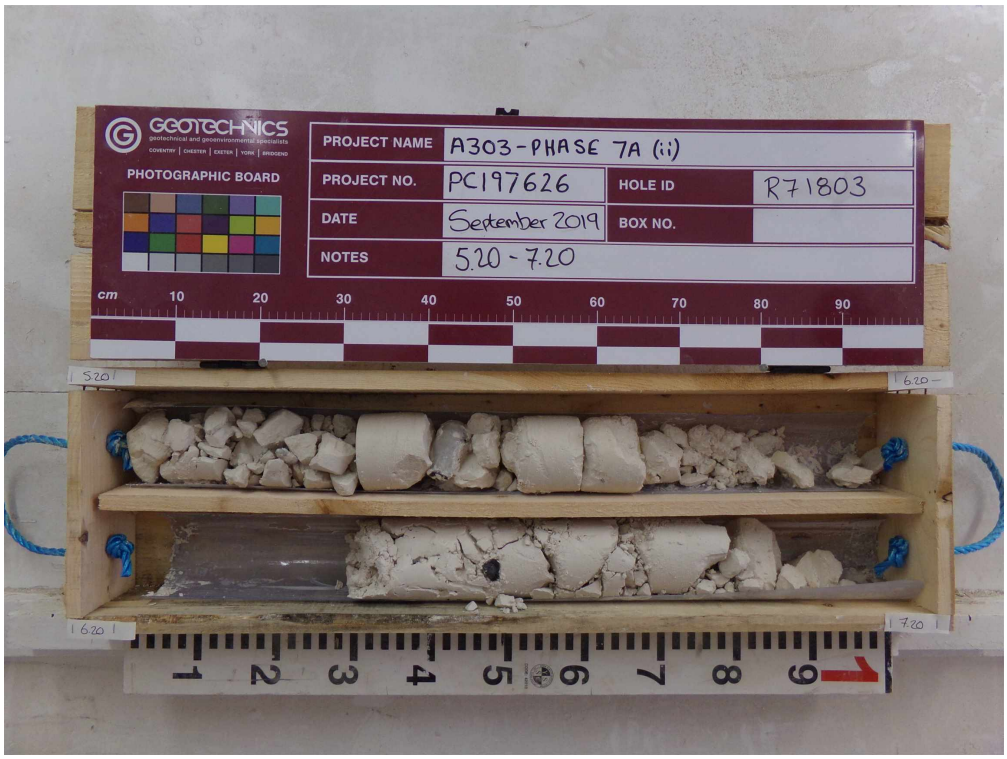
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71803 1.20-3.20m

R71803 3.20-5.20m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71803 5.20-7.20m

R71803 7.20-9.20m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

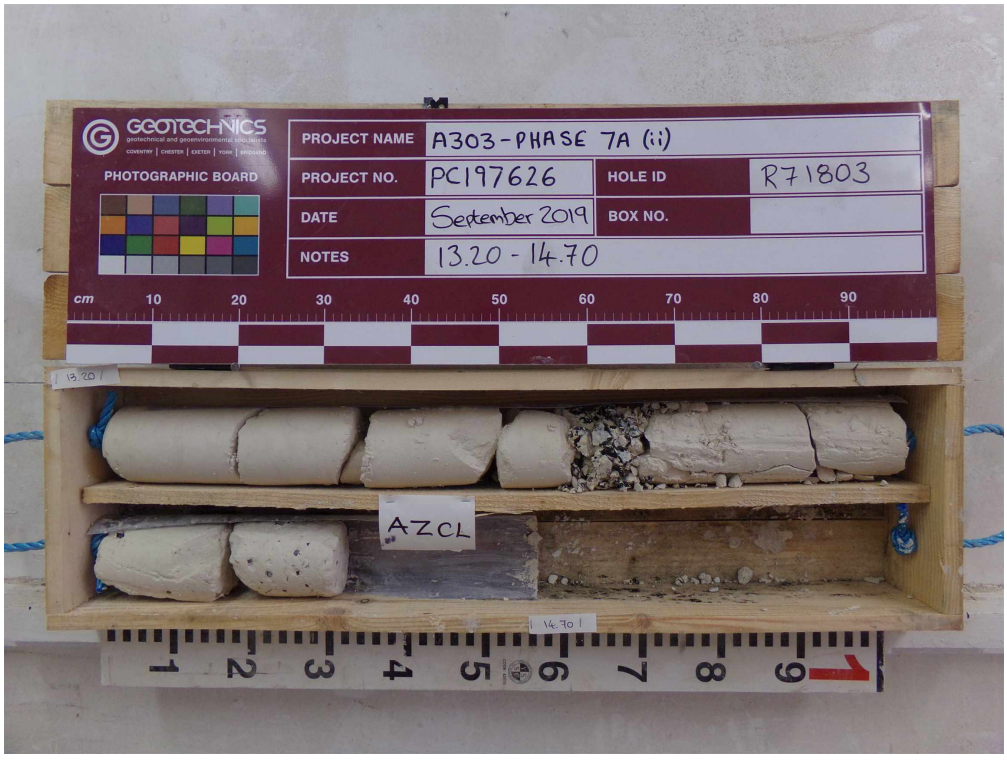
R71803 9.20-10.20m

R71803 10.20-11.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71803 11.70-13.20m



R71803 13.20-14.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

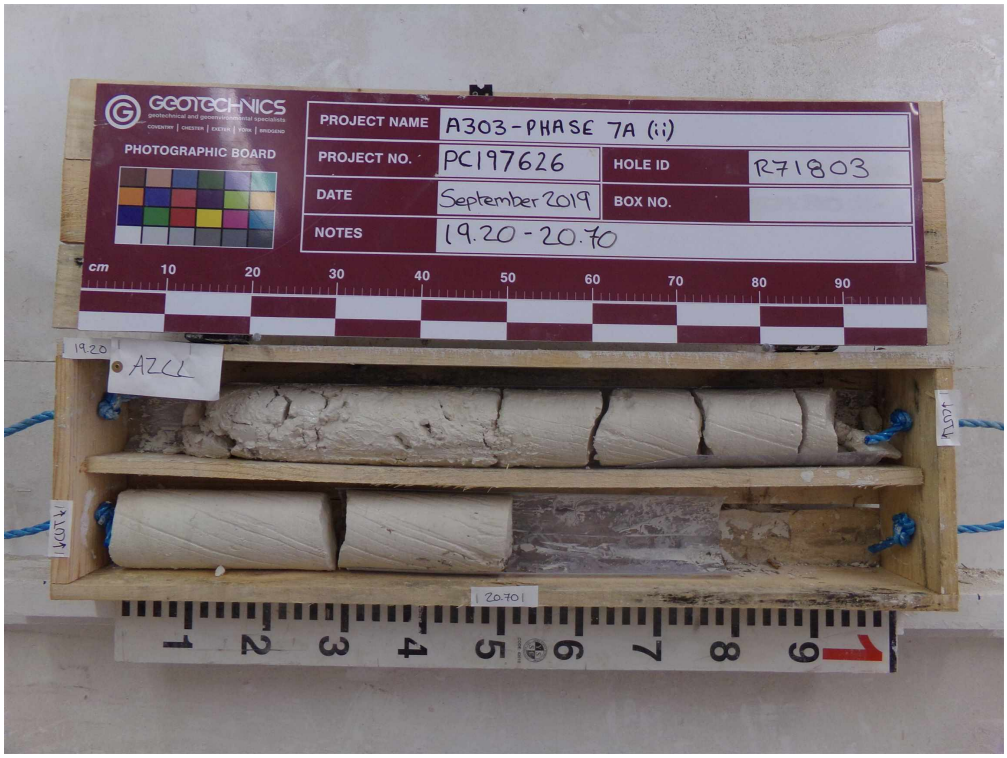
R71803 14.70-16.20m

R71803 16.20-17.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

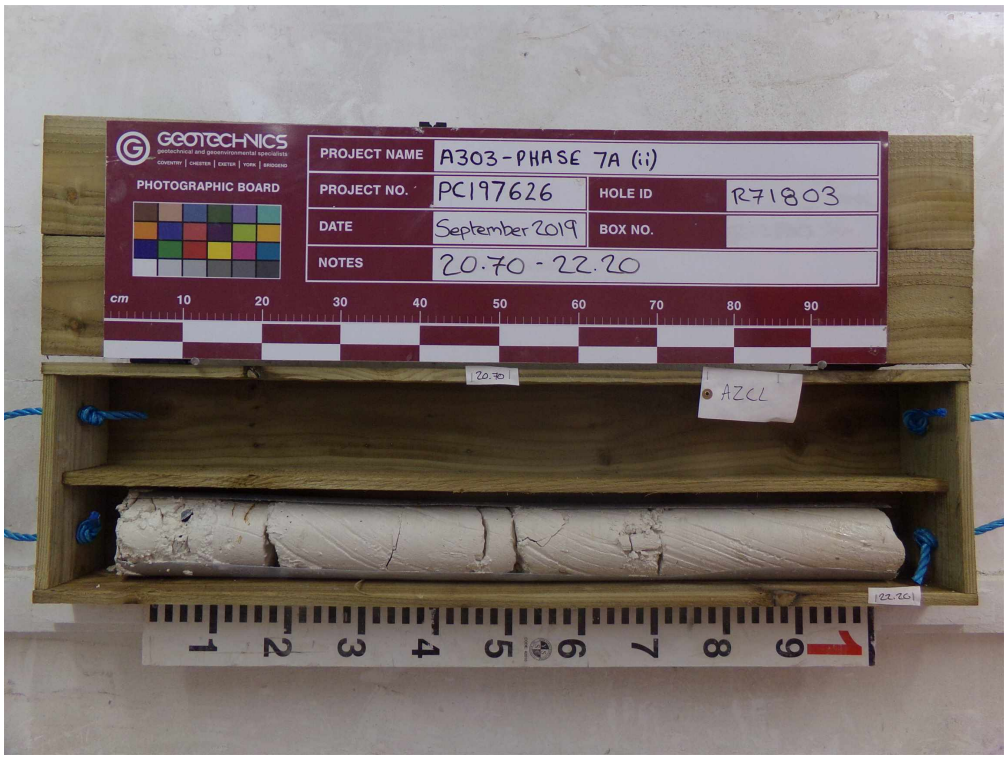
R71803 17.70-19.20m



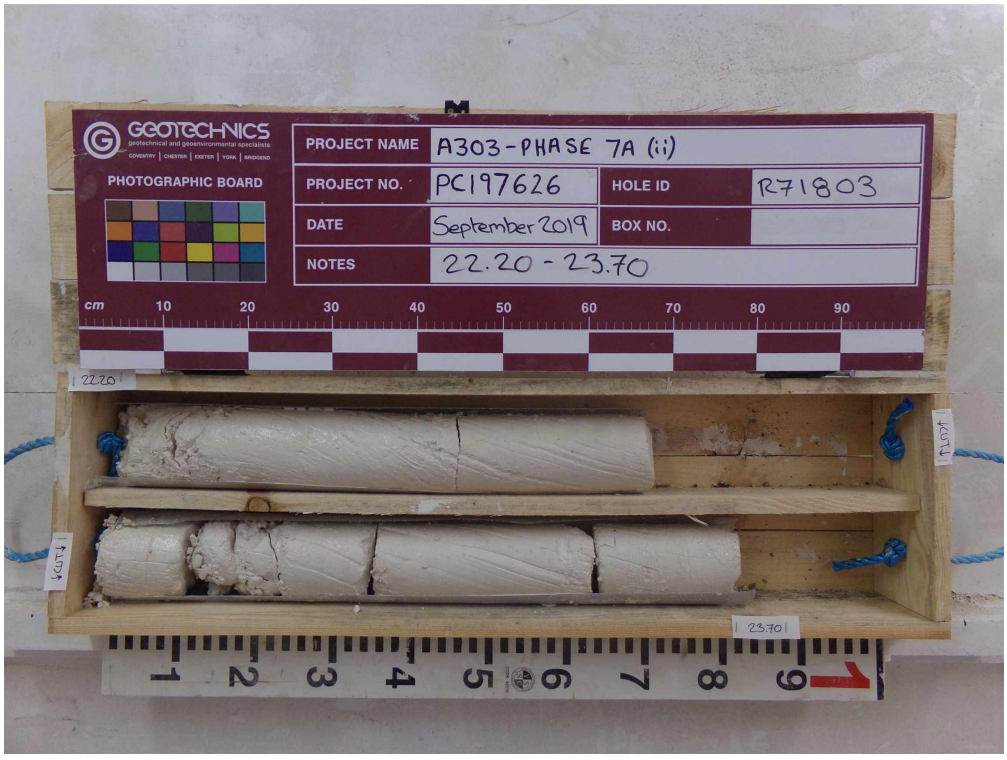
R71803 19.20-20.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71803 20.70-22.20m



R71803 22.20-23.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71803 23.70-25.20m

R71803 25.20-26.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71803 26.70-28.20m

R71803 28.20-29.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

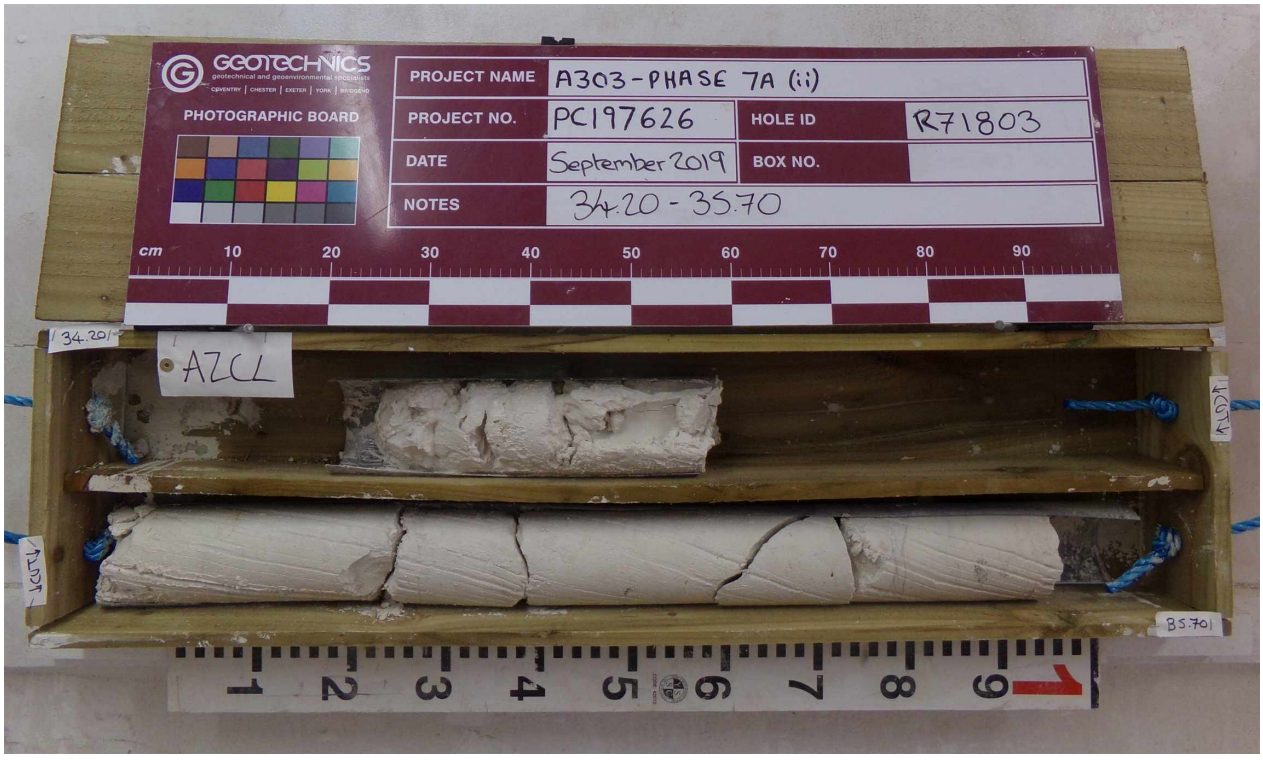
R71803 29.70-31.20m

R71803 31.20-32.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71803 32.70-34.20m



R71803 34.20-35.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71803 35.70-37.20m

R71803 37.20-38.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71803 38.70-40.20m

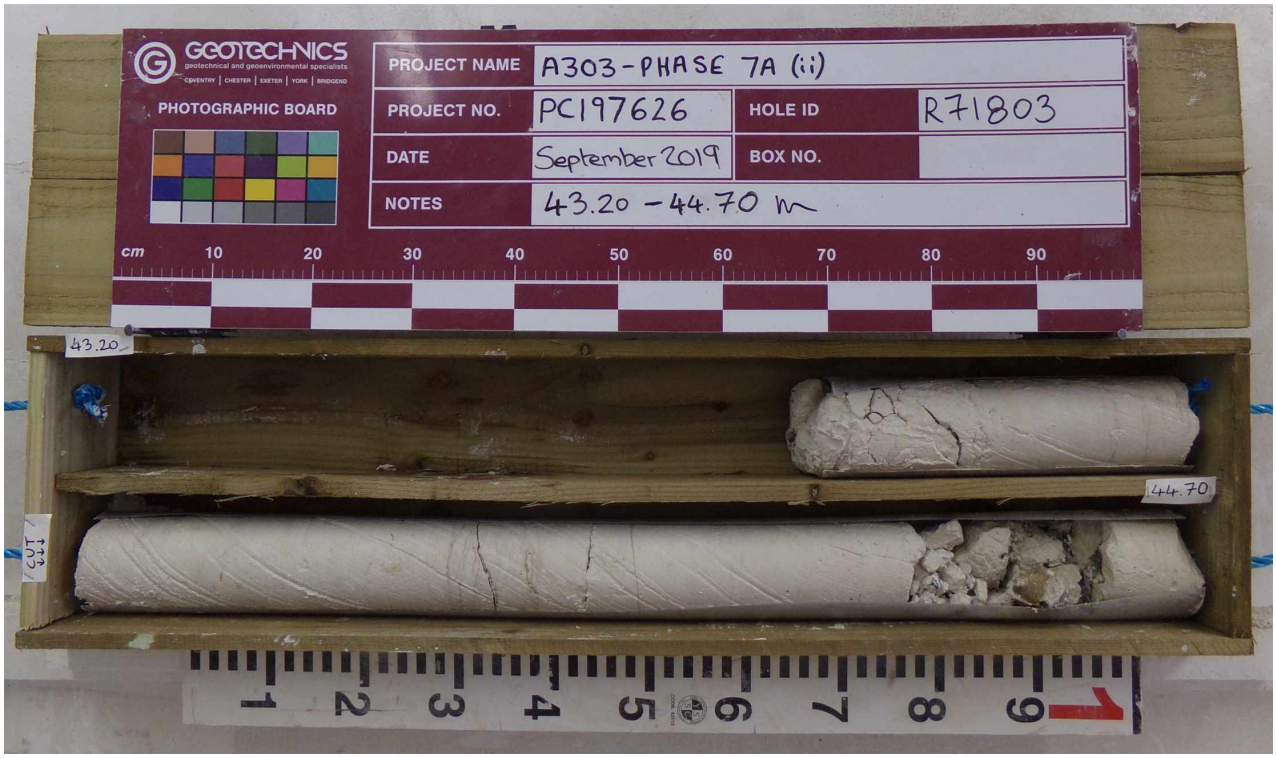
R71803 40.20-41.70m

PHOTOGRAPHS

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

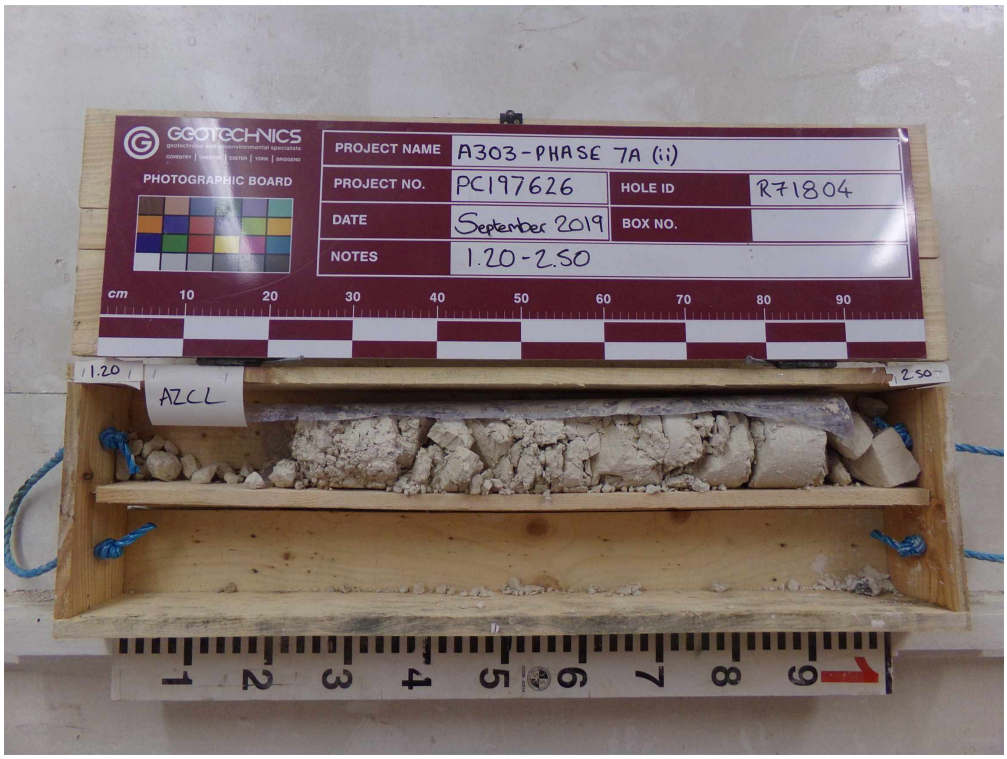
R71803 41.70-43.20m



R71803 43.20-44.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71804 1.20-2.50m

R71804 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 4.00-5.50m

R71804 5.50-7.00m

Project Number : PC197626

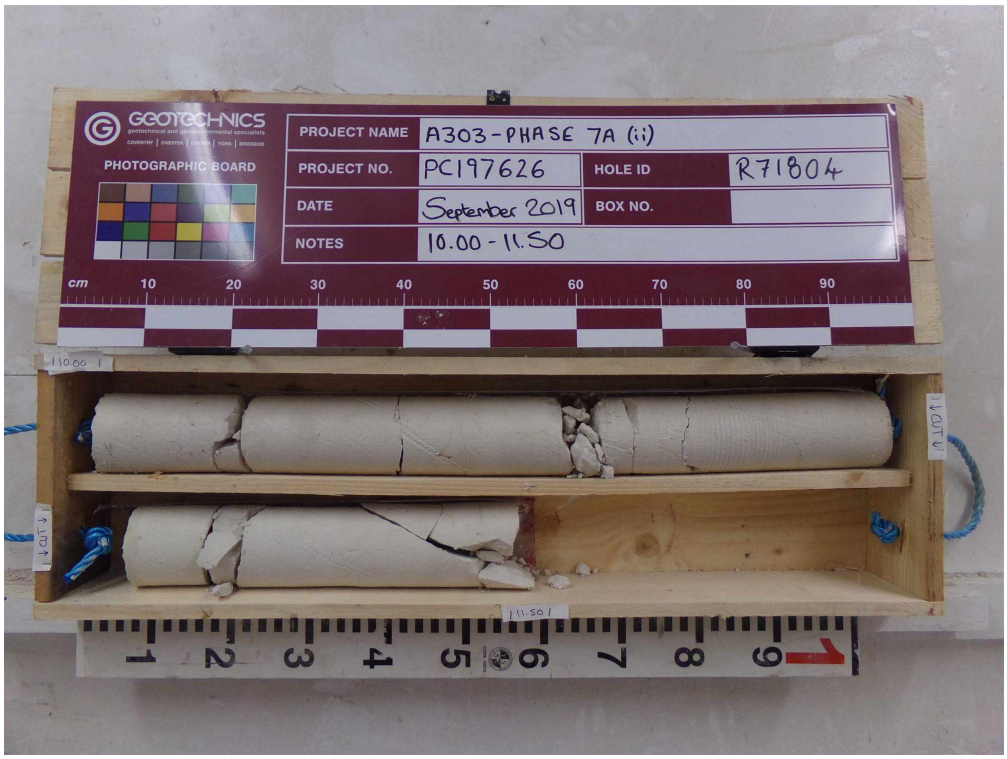
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 7.00-8.50m

R71804 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71804 10.00-11.50m

R71804 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 13.00-14.50m

R71804 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 16.00-17.50m

R71804 17.50-19.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 19.00-20.50m

R71804 20.50-22.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 22.00-23.50m

R71804 23.50-25.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 25.00-26.50m

R71804 26.50-28.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 28.00-29.50m

R71804 29.50-31.00m

Project Number : PC197626

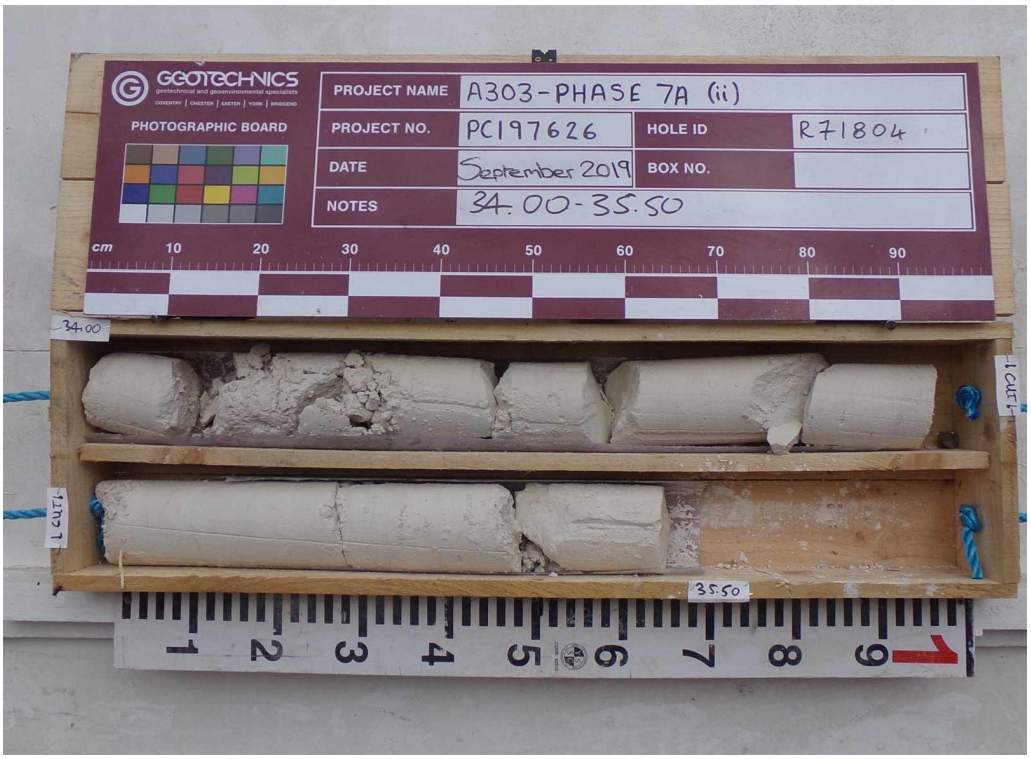
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 31.00-32.50m

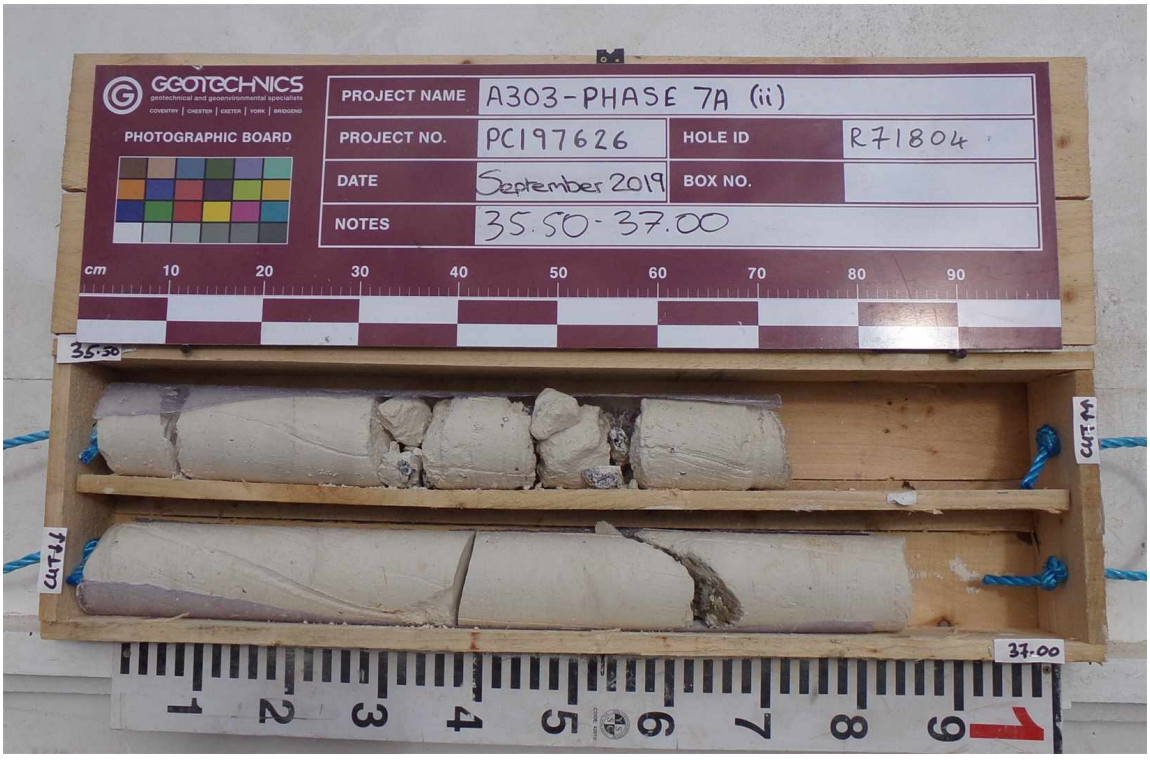
R71804 32.50-34.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71804 34.00-35.50m



R71804 35.50-37.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 37.00-38.50m

R71804 38.50-40.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 40.00-41.50m

R71804 41.50-43.00m

Project Number : PC197626

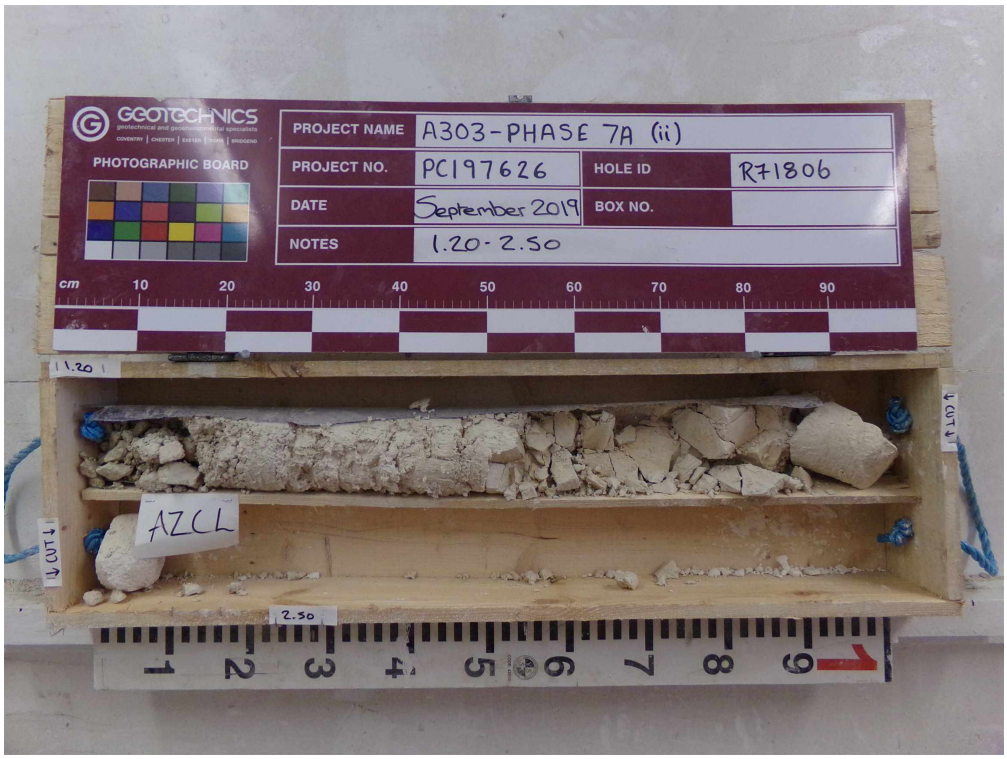
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71804 43.00-44.50m

R71804 44.50-46.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



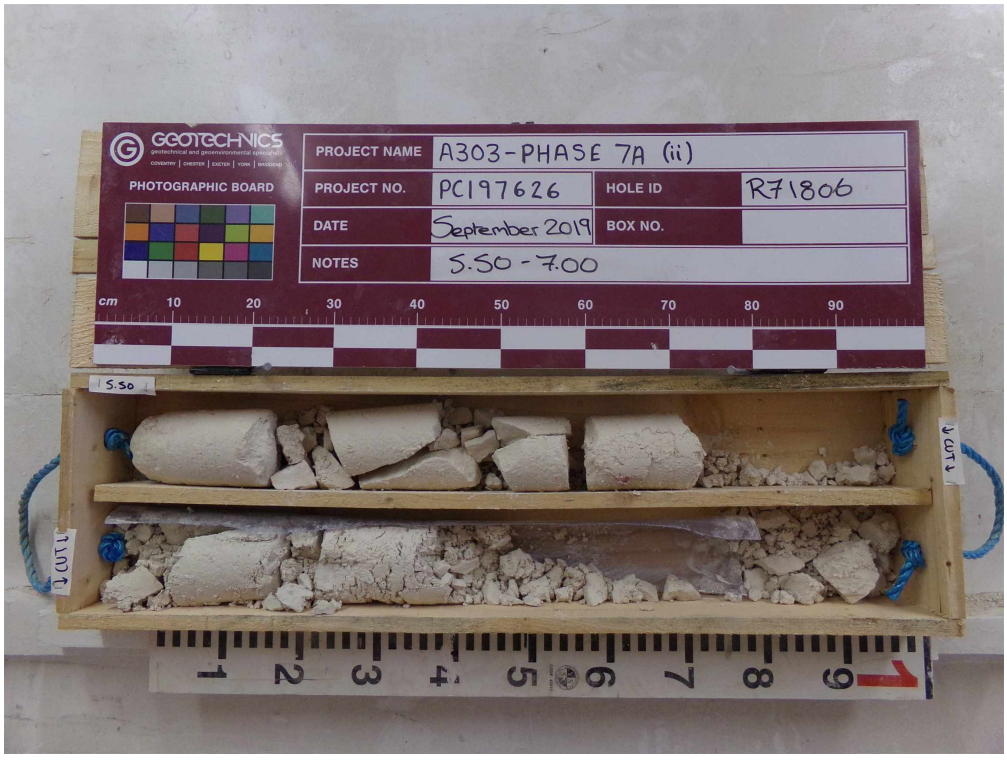
R71806 1.20-2.50m

R71806 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 4.00-5.50m

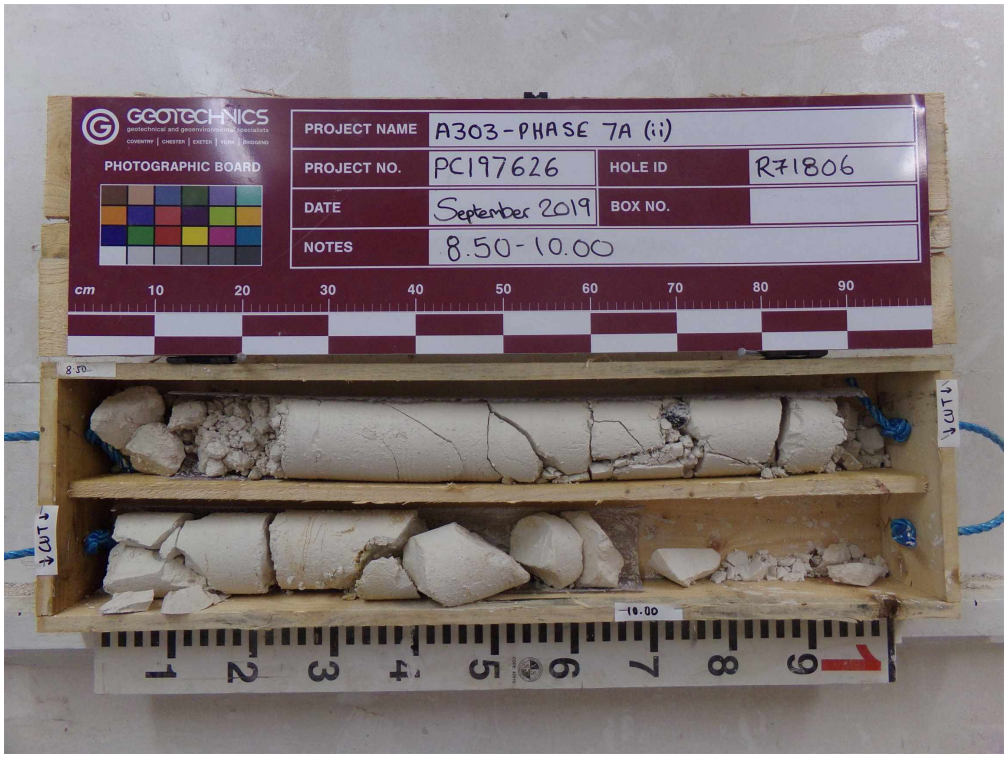


R71806 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 7.00-8.50m

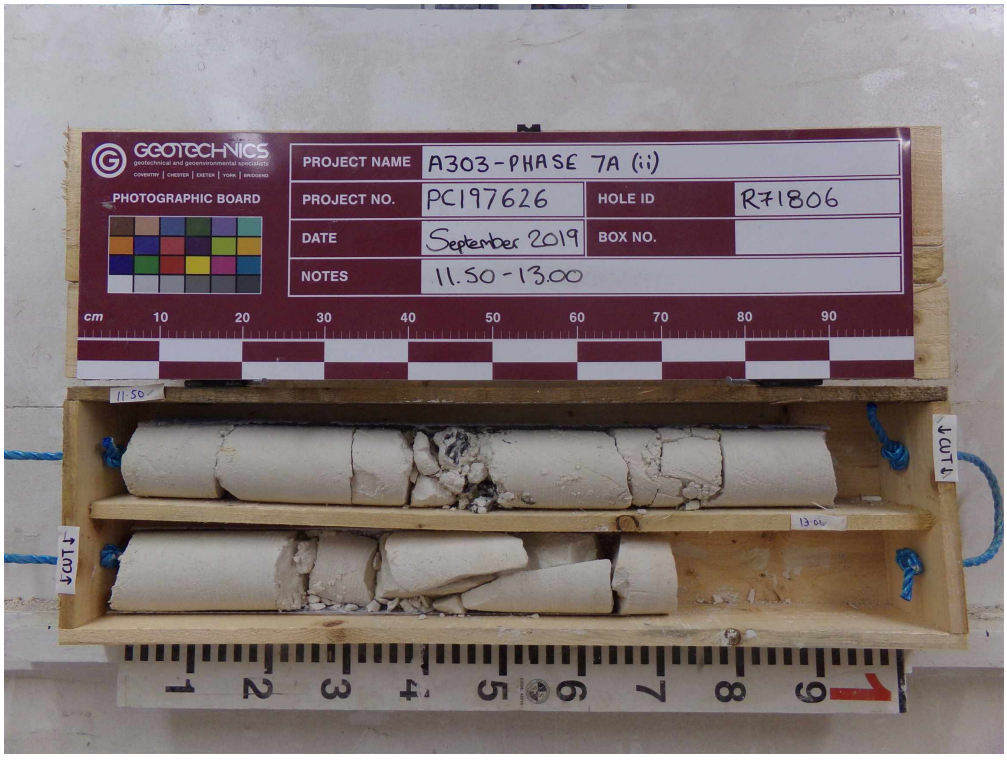


R71806 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 10.00-11.50m



R71806 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

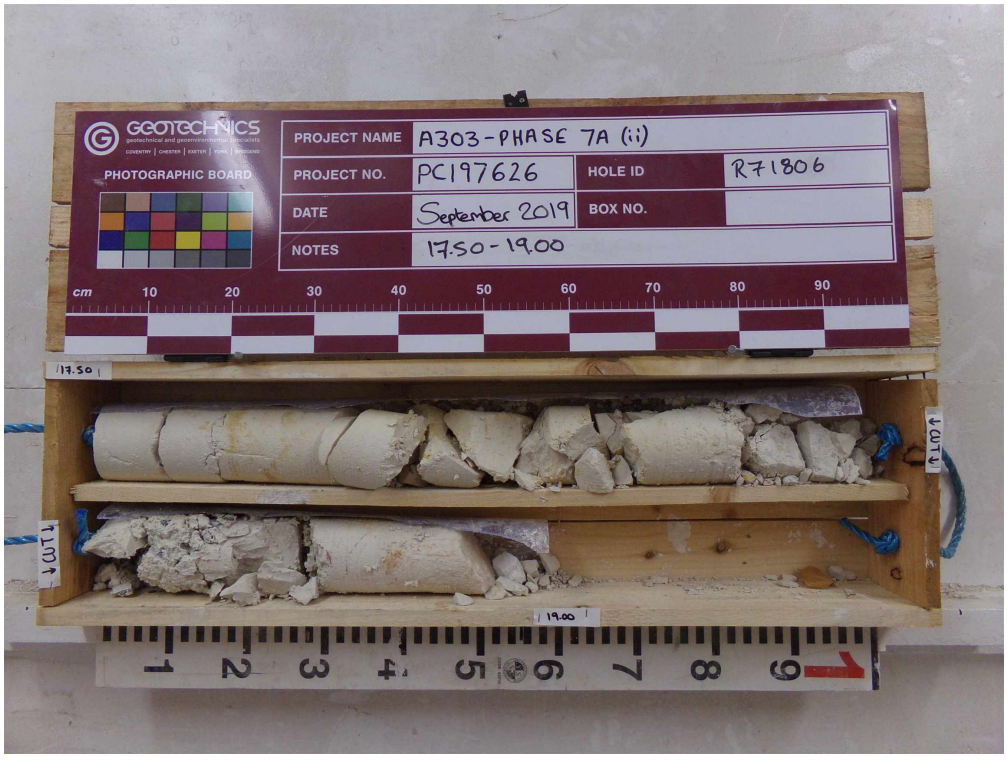
R71806 13.00-14.50m

R71806 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

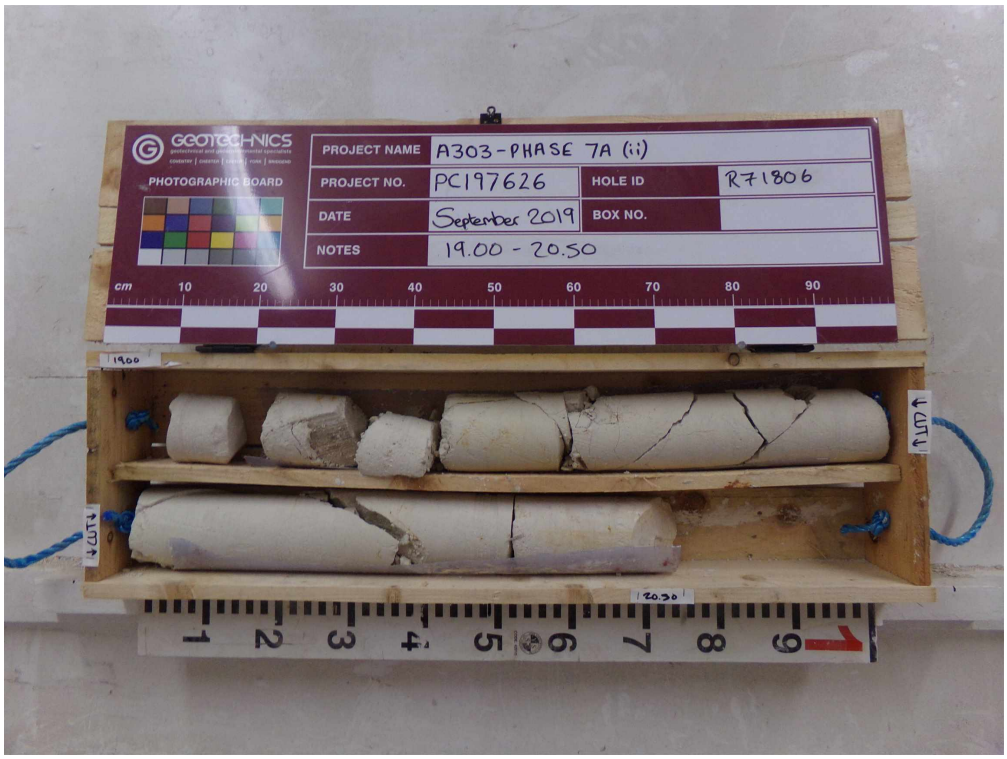
R71806 16.00-17.50m



R71806 17.50-19.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



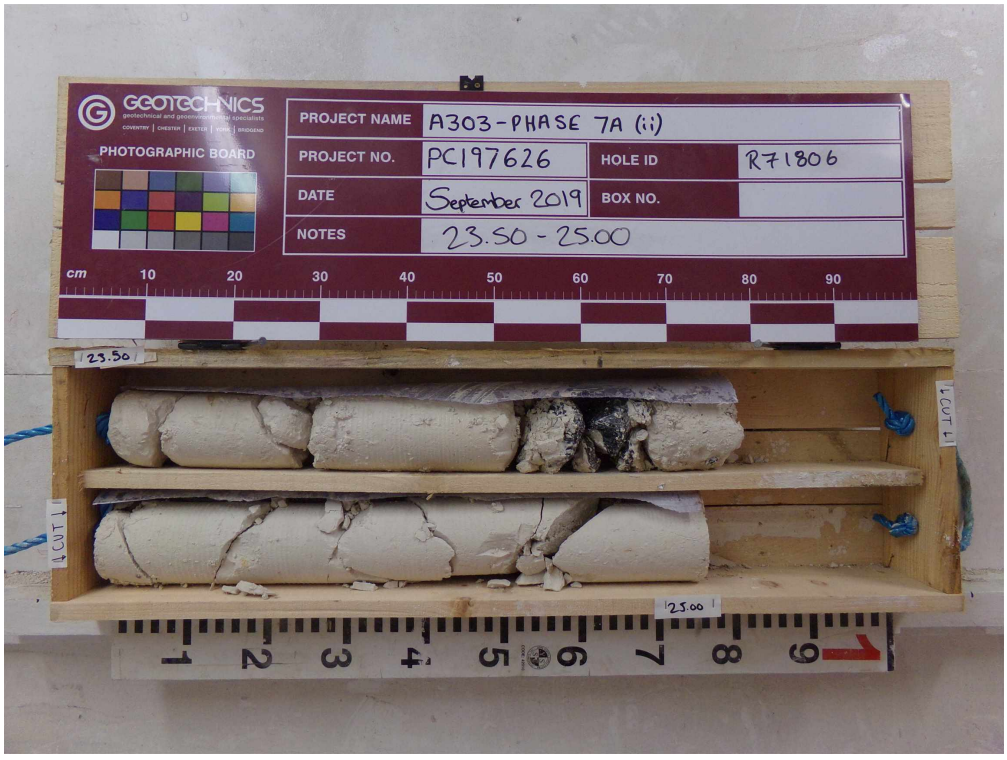
R71806 19.00-20.50m

R71806 20.50-22.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 22.00-23.50m



R71806 23.50-25.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 25.00-26.50m

R71806 26.50-28.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

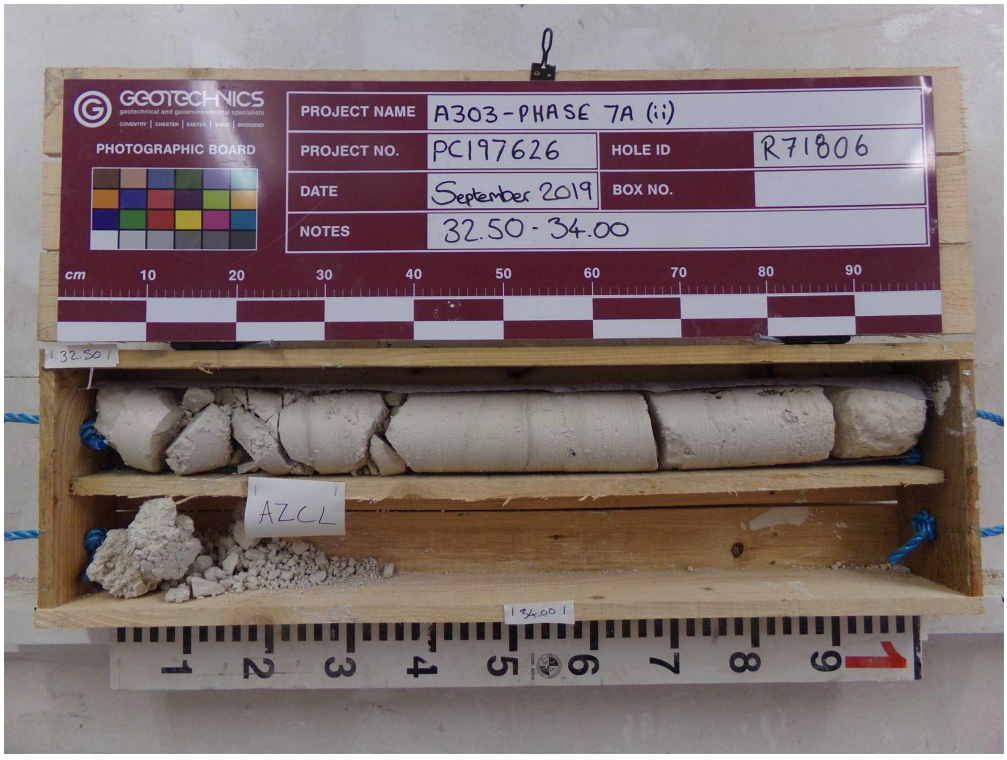
R71806 28.00-29.50m

R71806 29.50-31.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 31.00-32.50m

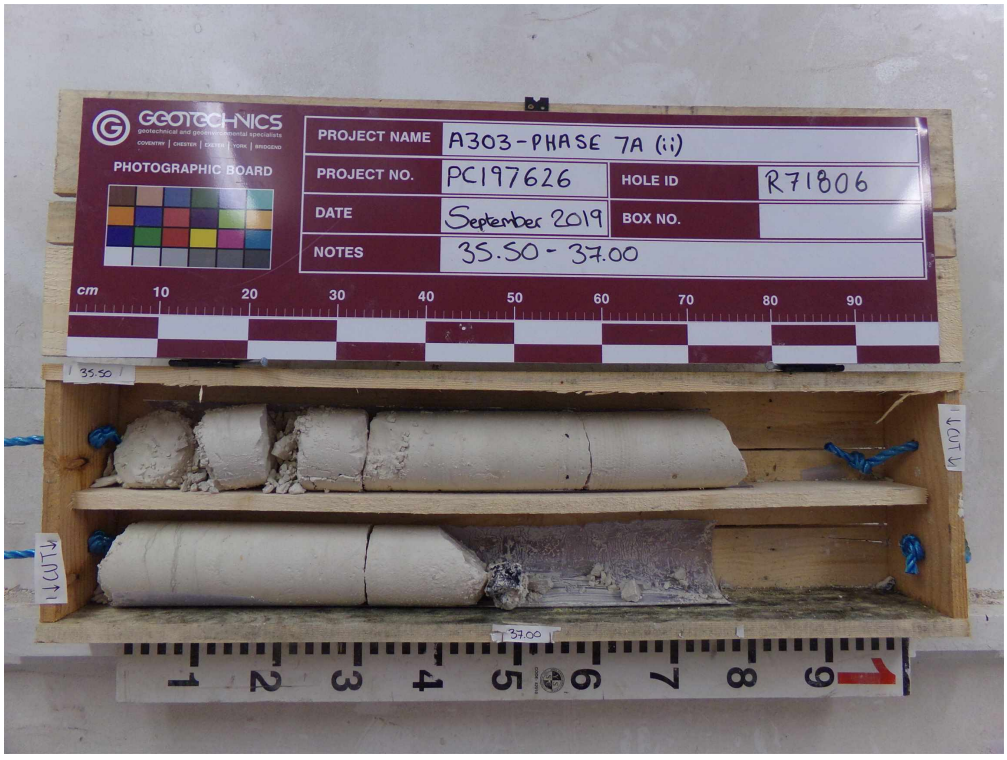


R71806 32.50-34.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 34.00-35.50m

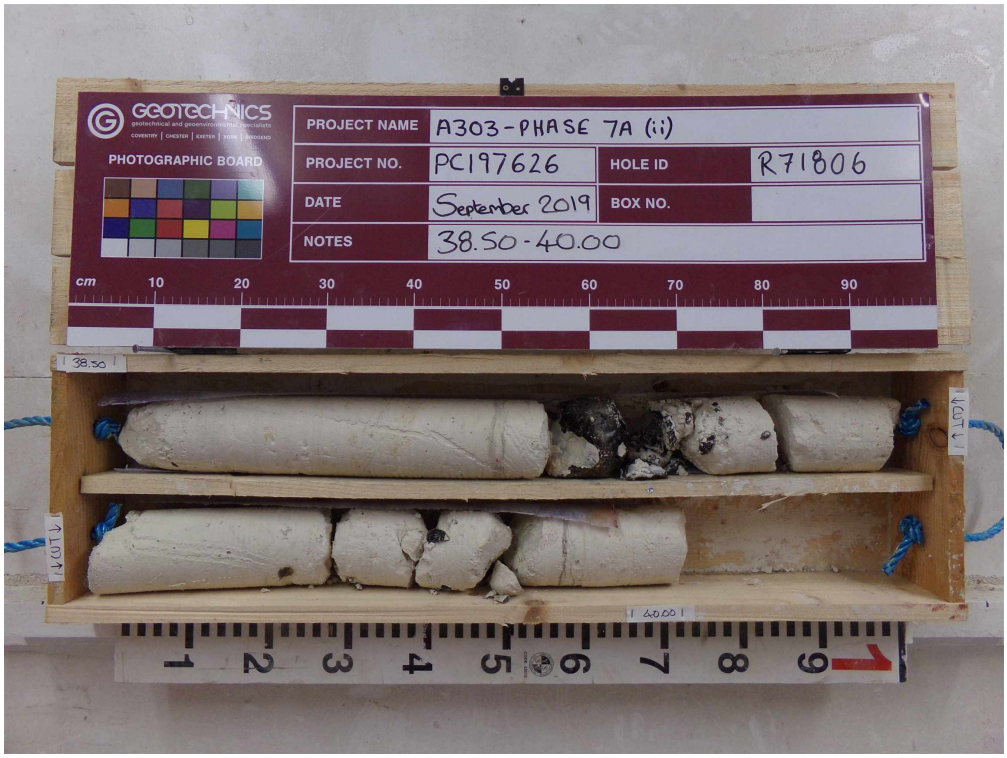


R71806 35.50-37.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 37.00-38.50m



R71806 38.50-40.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 40.00-41.50m

R71806 41.50-43.00m

Project Number : PC197626

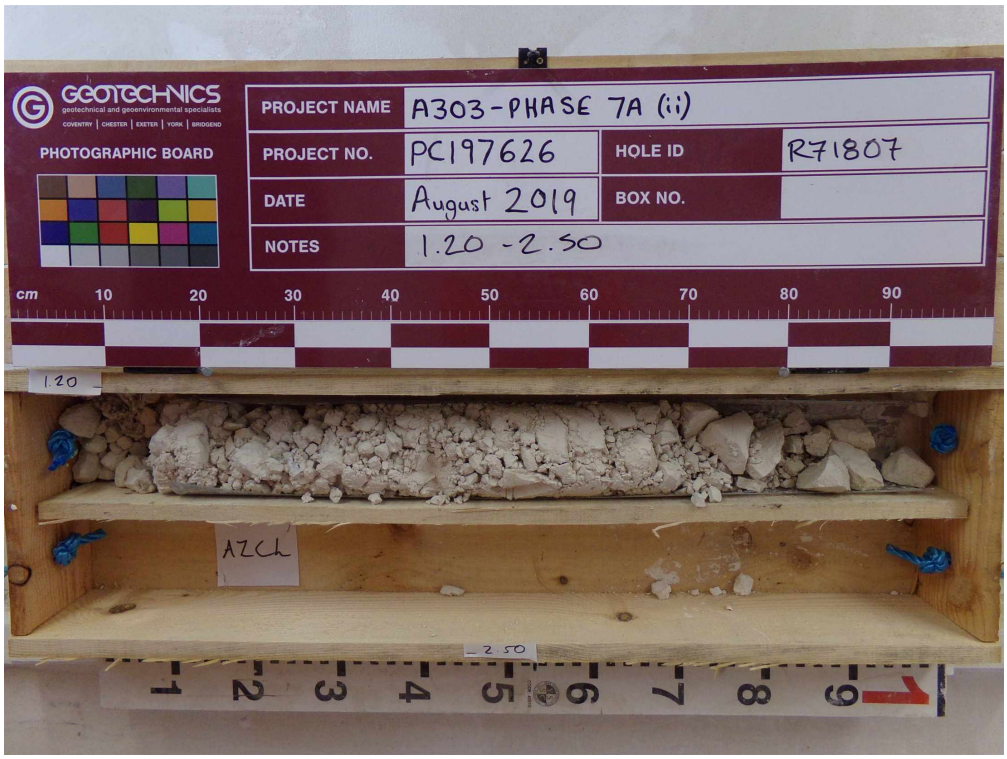
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71806 43.00-44.50m

R71806 44.50-46.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71807 1.20-2.50m

R71807 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 4.00-5.50m

R71807 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

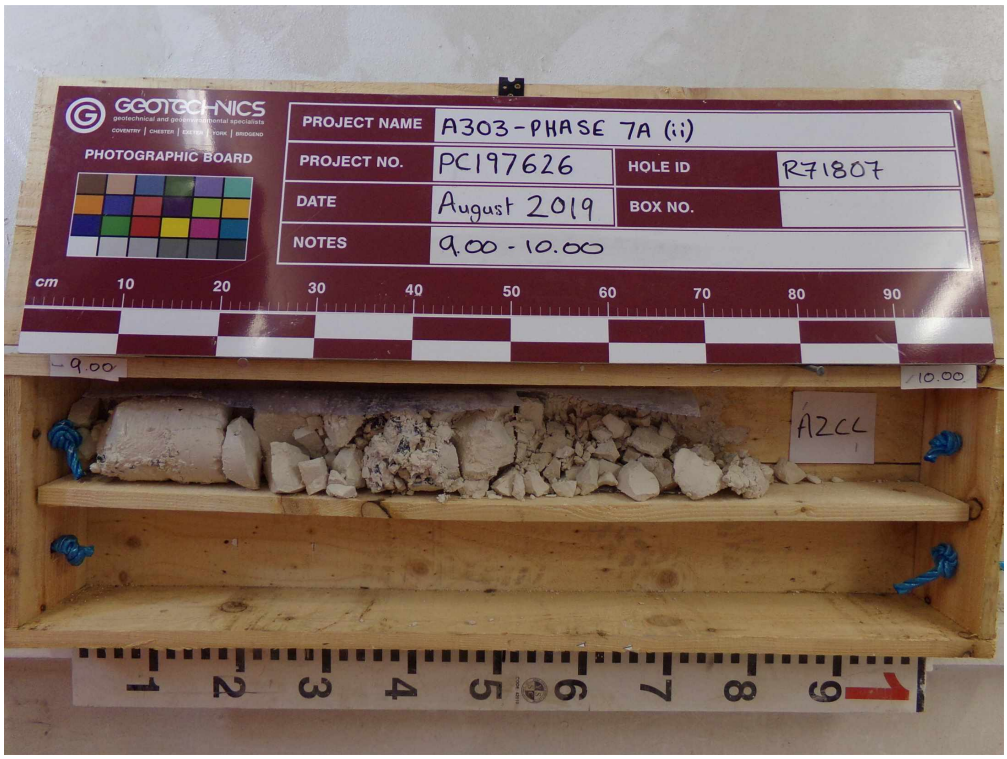
R71807 7.00-8.50m

no photograph as no core recovery

R71807 8.50-9.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



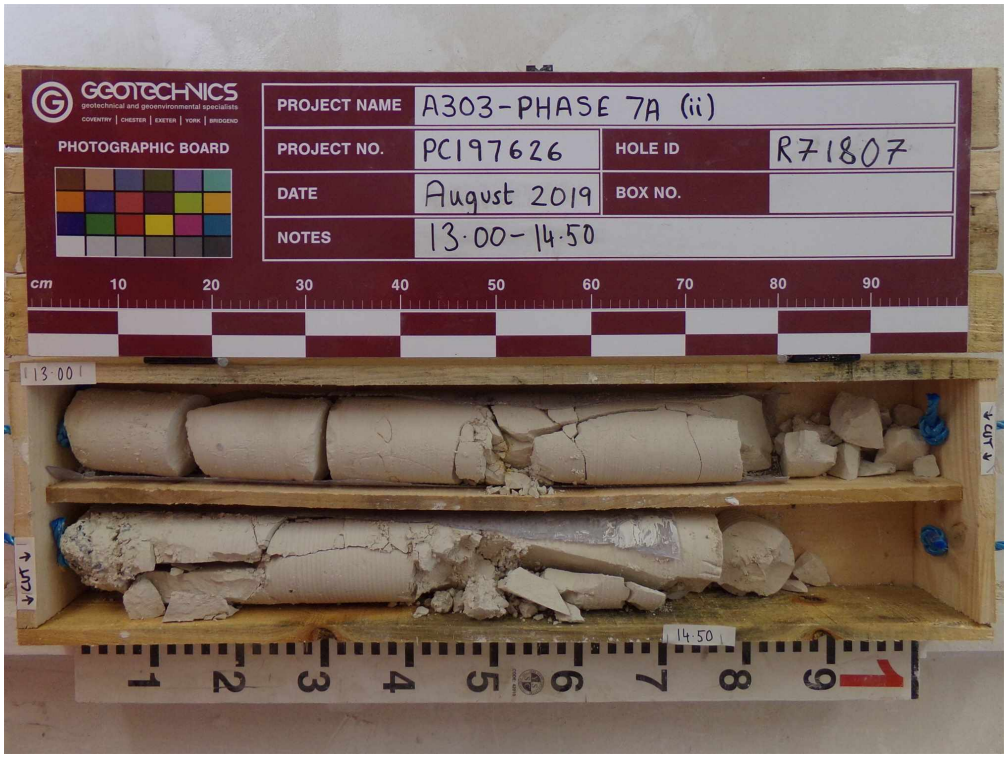
R71807 9.00-10.00m

R71807 10.00-11.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 11.50-13.00m



R71807 13.00-14.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 14.50-16.00m

R71807 16.00-17.50m

Project Number : PC197626

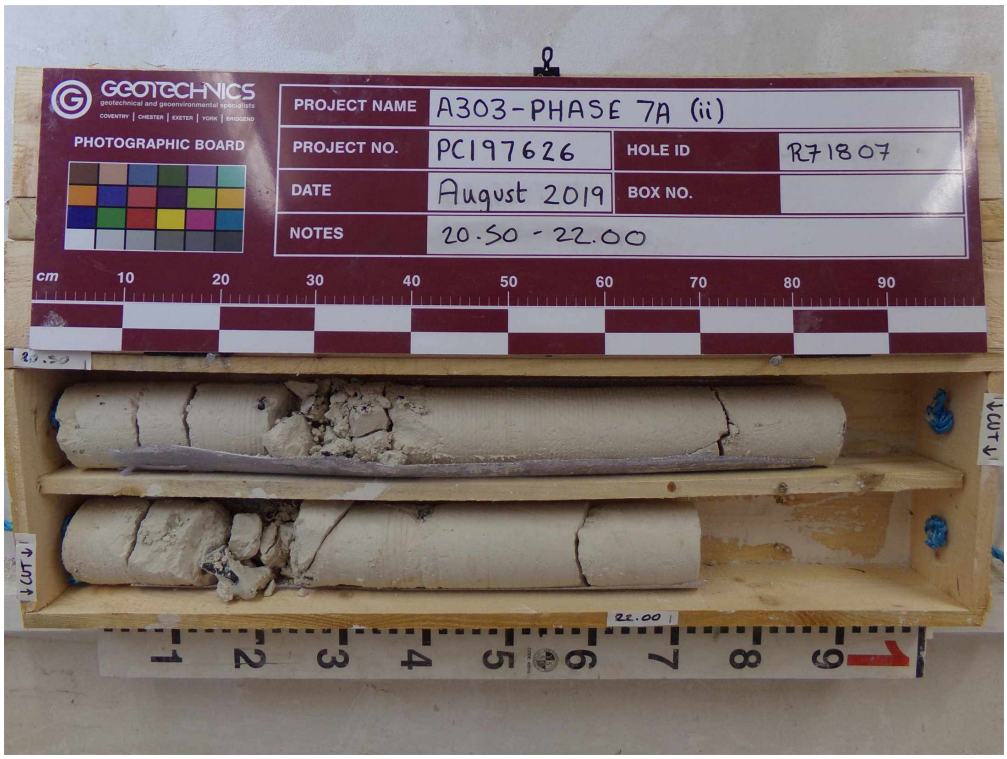
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 17.50-19.00m

R71807 19.00-20.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

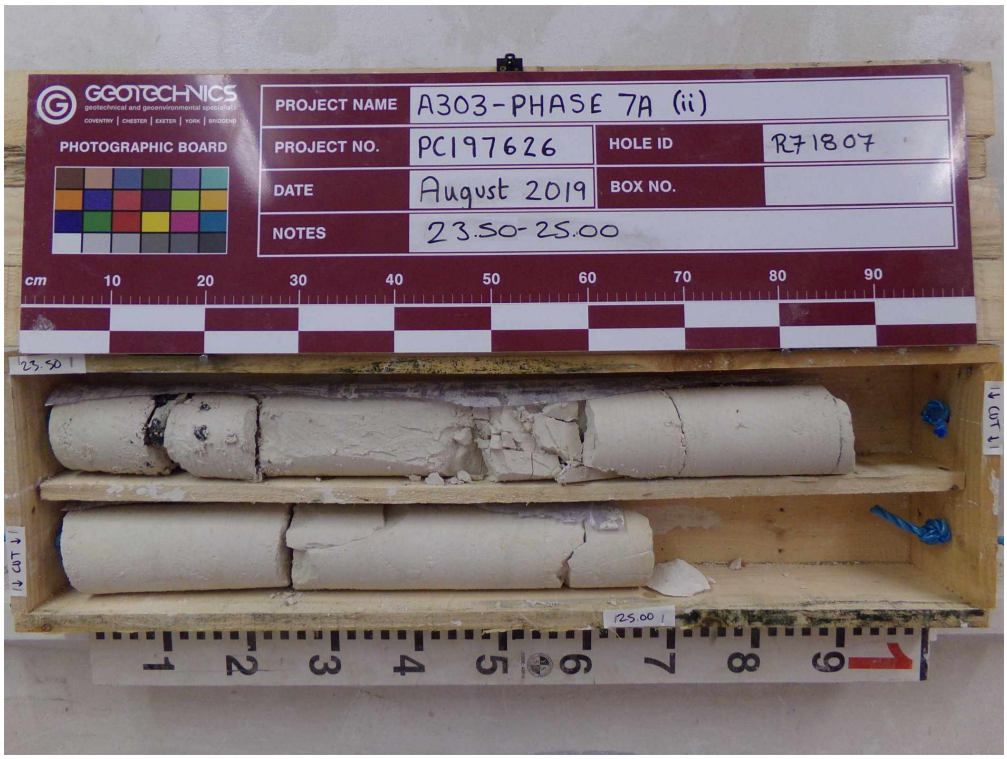


R71807 20.50-22.00m

R71807 22.00-23.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71807 23.50-25.00m

R71807 25.00-26.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 26.50-28.00m

R71807 28.00-29.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 29.50-31.00m

R71807 31.00-32.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 32.50-34.00m

R71807 34.00-35.50m

Project Number : PC197626

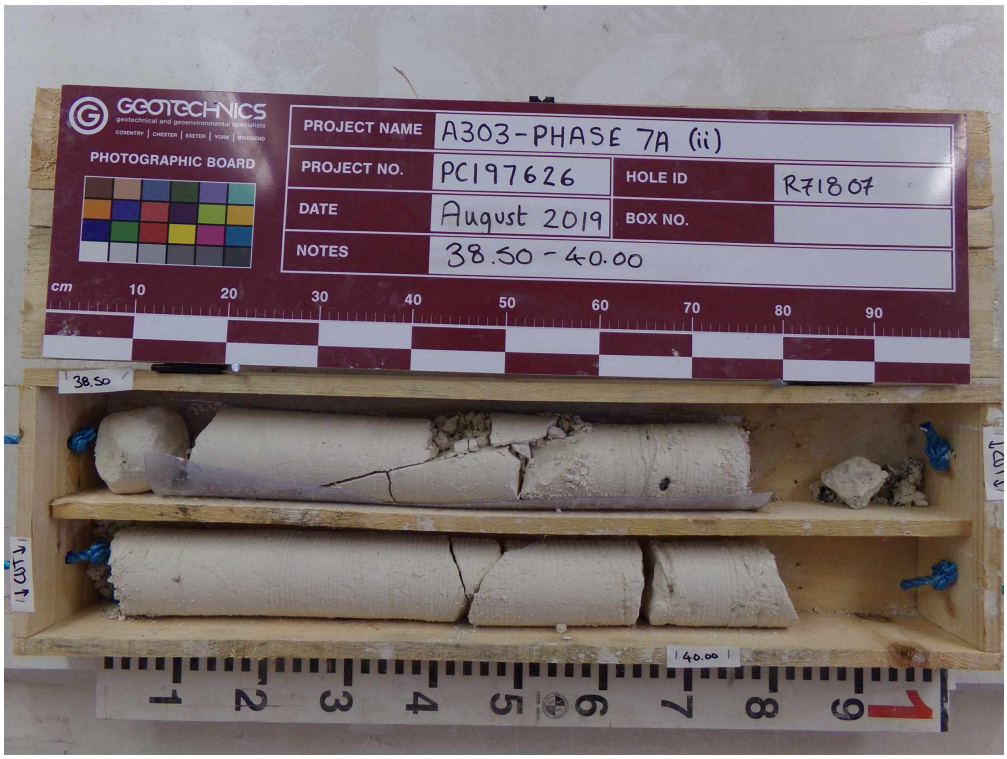
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 35.50-37.00m

R71807 37.00-38.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71807 38.50-40.00m

R71807 40.00-41.50m

Project Number : PC197626

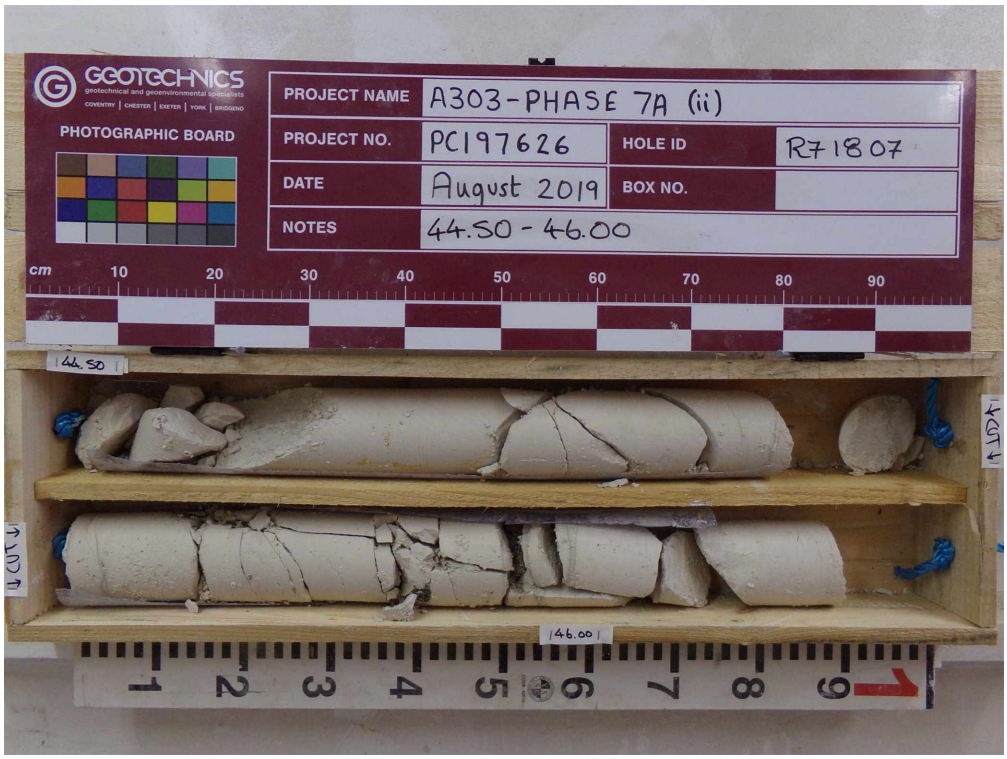
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71807 41.50-43.00m

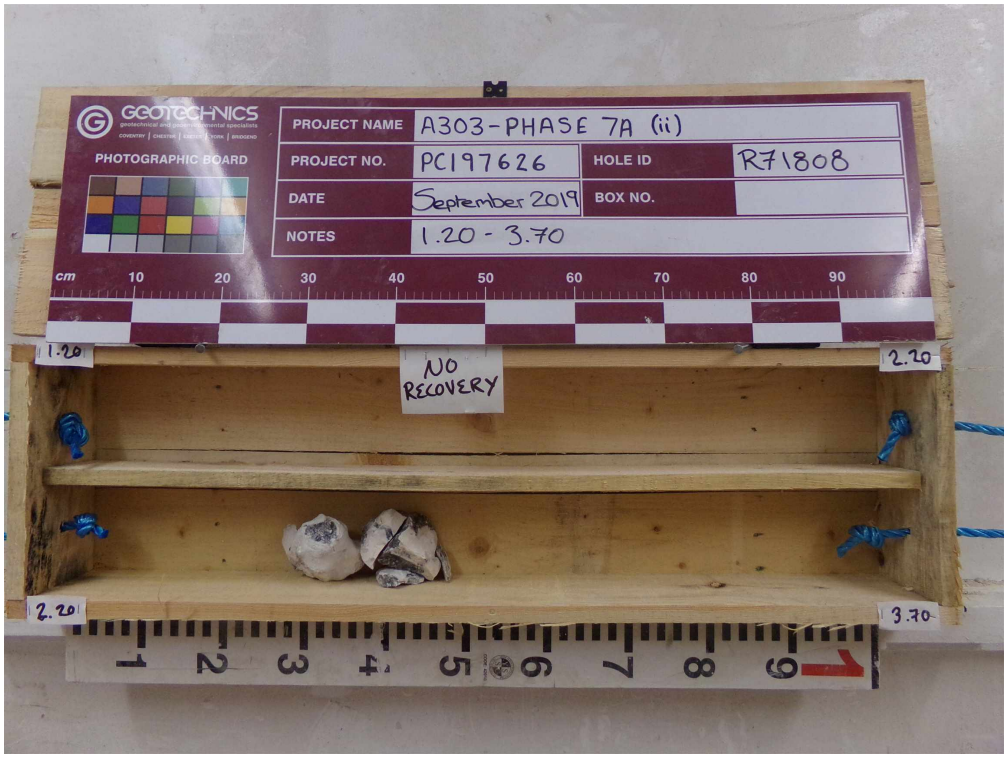
R71807 43.00-44.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71807 44.50-46.00m



R71808 1.20-3.70m

Project Number : PC197626

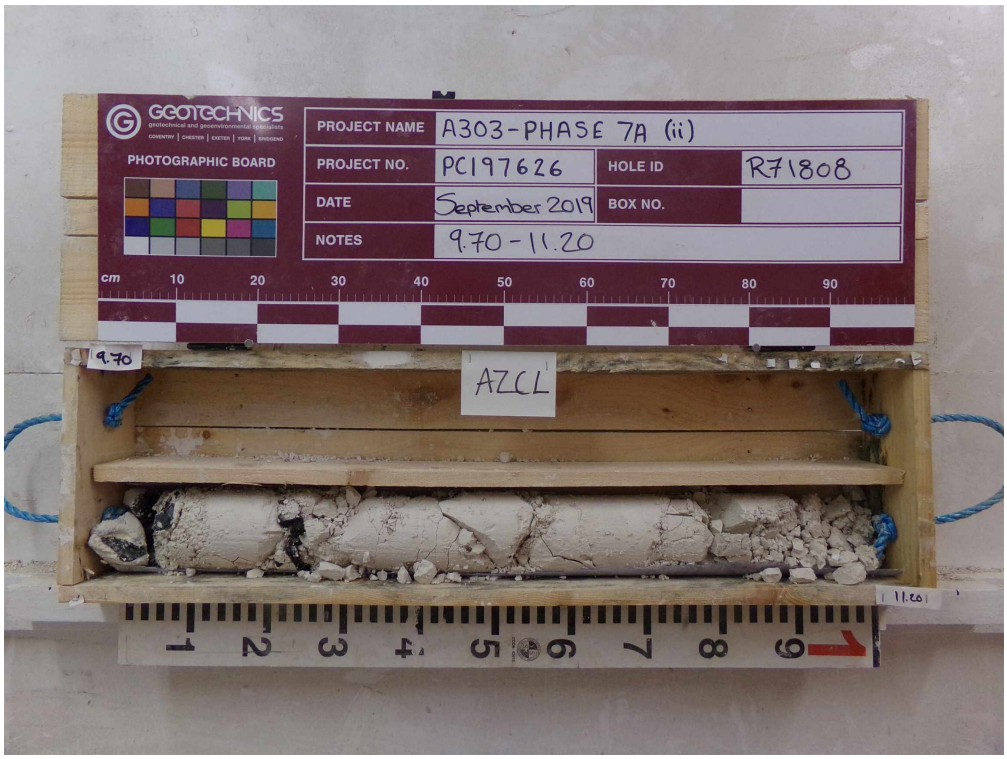
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 3.70-6.70m

R71808 6.70-9.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71808 9.70-11.20m

R71808 11.20-12.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

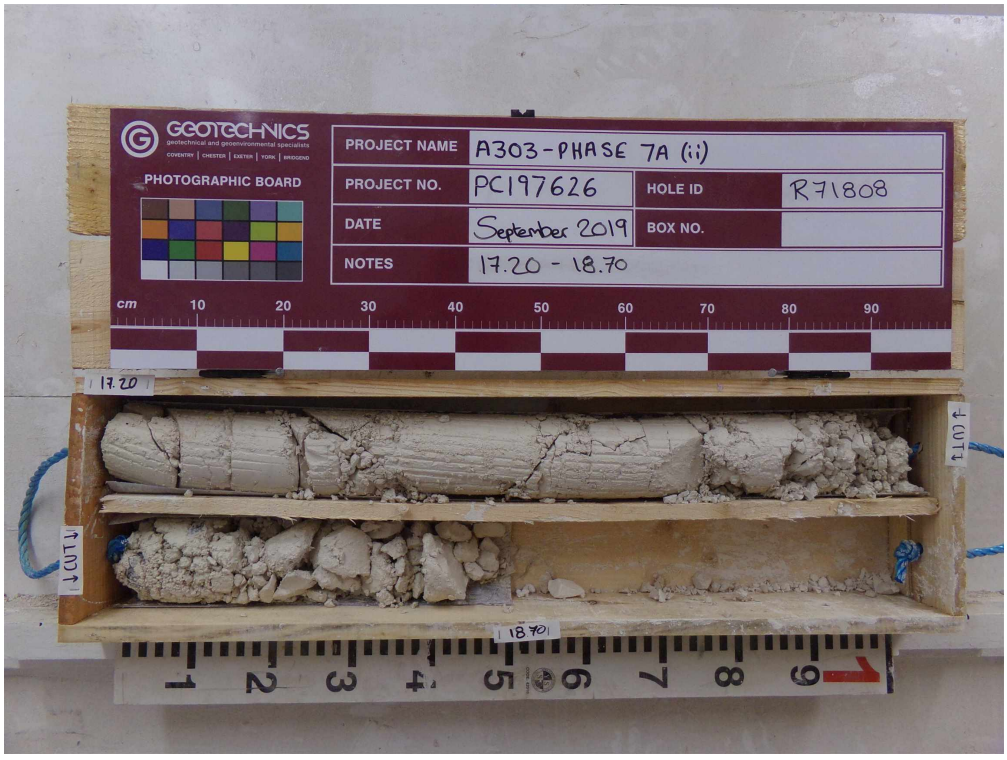
R71808 12.70-14.20m

R71808 14.20-15.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 15.70-17.20m



R71808 17.20-18.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 18.70-20.20m

R71808 20.20-22.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

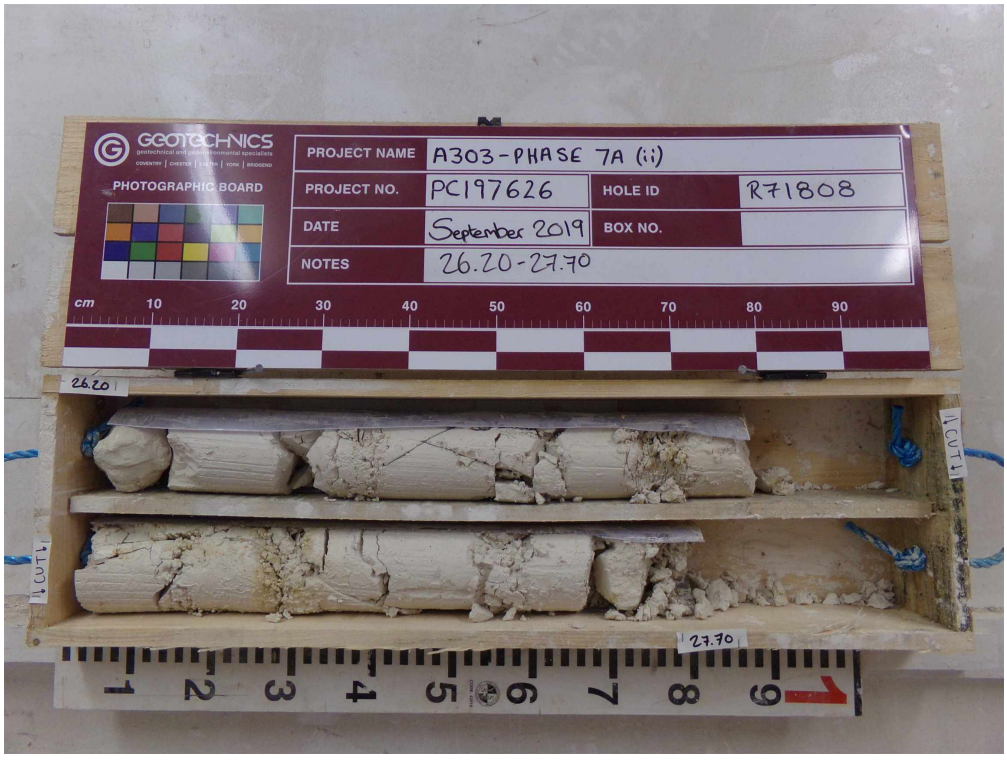
R71808 22.70-23.20m

R71808 23.20-24.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 24.70-26.20m



R71808 26.20-27.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 27.70-29.20m

R71808 29.20-30.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 30.70-32.20m

R71808 32.20-33.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 33.70-35.20m

R71808 35.20-36.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 36.70-38.20m

R71808 38.20-39.70m

Project Number : PC197626

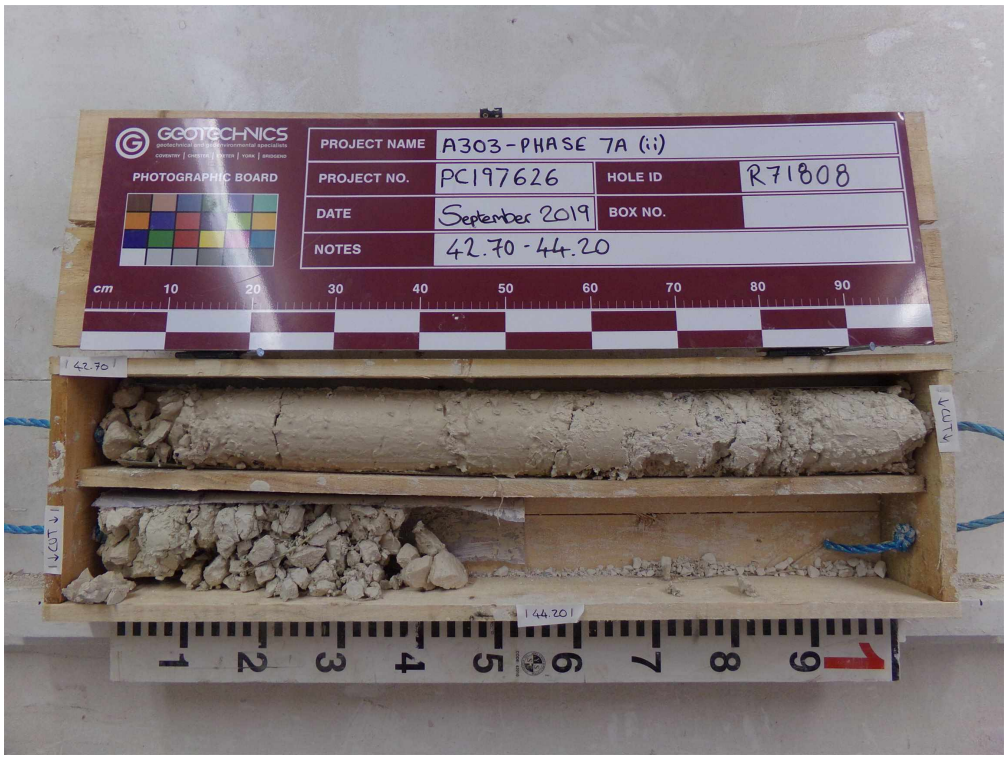
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71808 39.70-41.20m

R71808 41.20-42.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71808 42.70-44.20m

R71808 44.20-45.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

no photograph as no core recovery

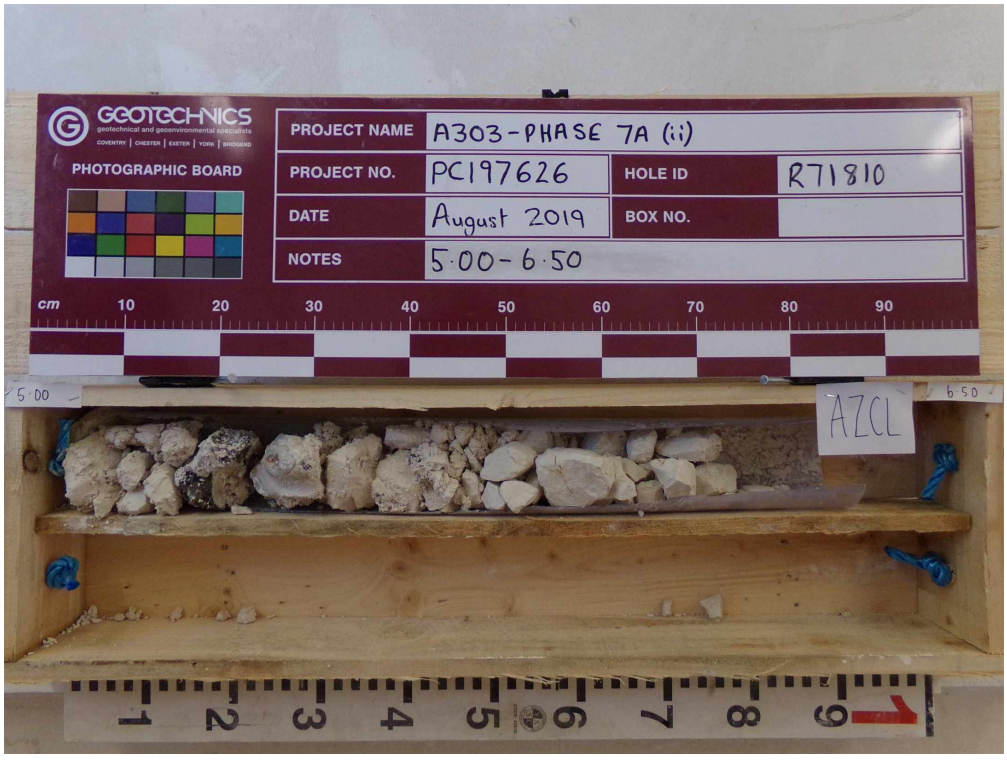
R71810 1.20-2.00m

R71810 2.00-3.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71810 3.50-5.00m



R71810 5.00-6.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71810 6.50-8.00m

R71810 8.00-9.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71810 9.50-11.00m

R71810 11.00-12.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71810 12.50-14.00m

R71810 14.00-15.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71810 15.50-17.00m

R71810 17.00-18.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71810 18.50-20.00m

R71810 20.00-21.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

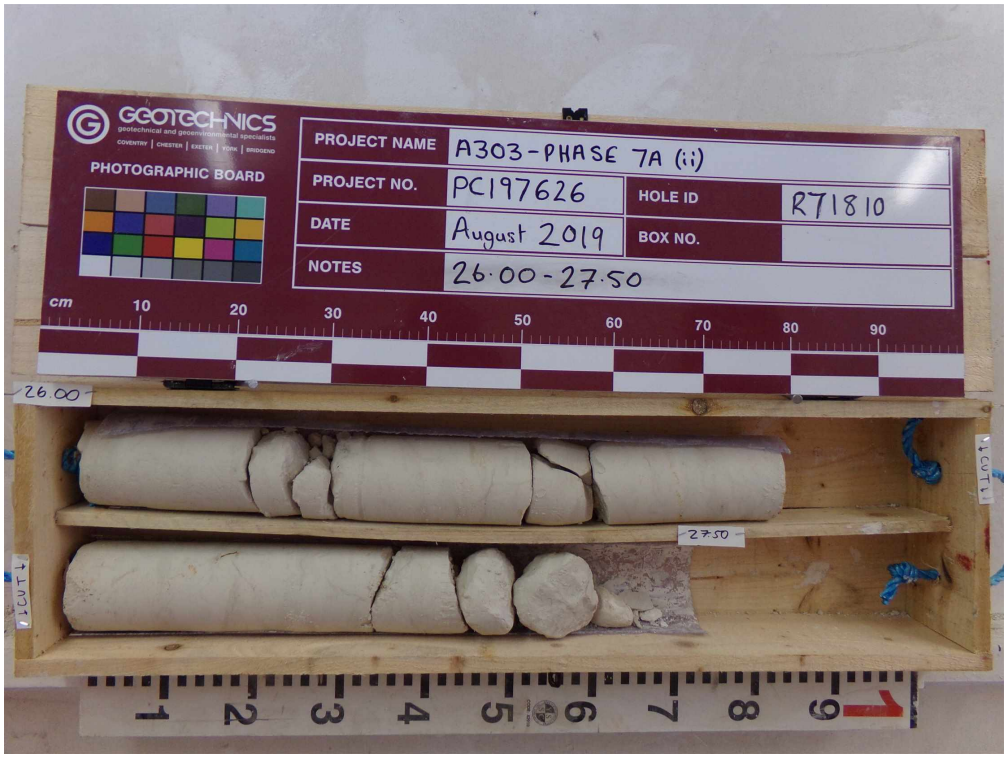
R71810 21.50-23.00m

R71810 23.00-24.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

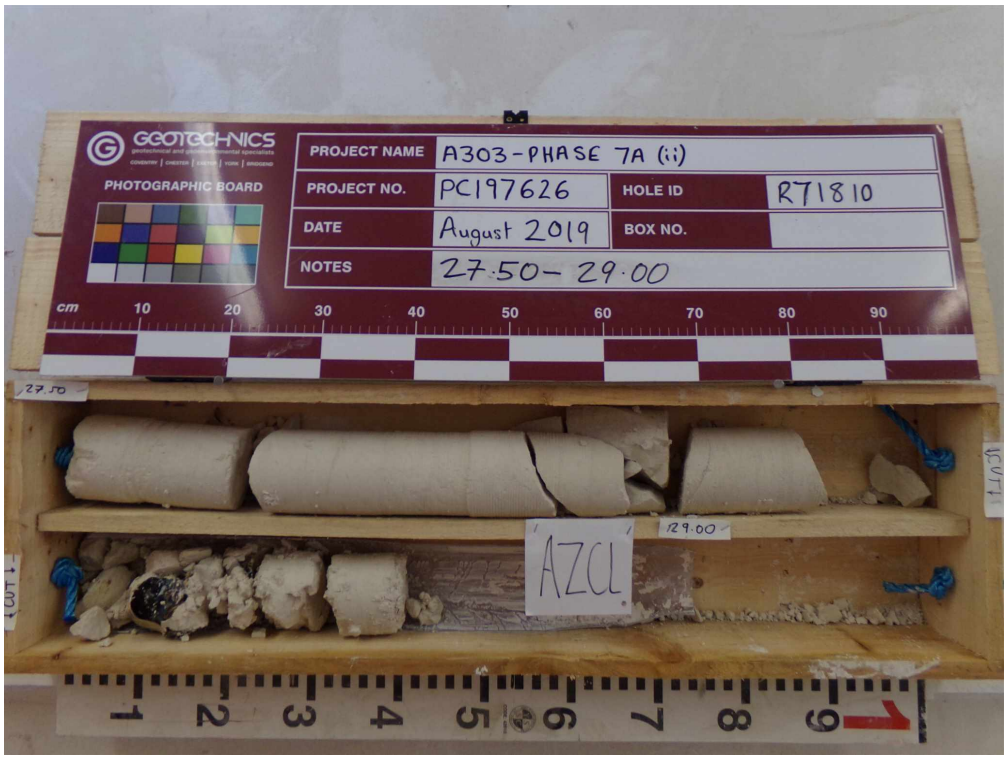
R71810 24.50-26.00m



R71810 26.00-27.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

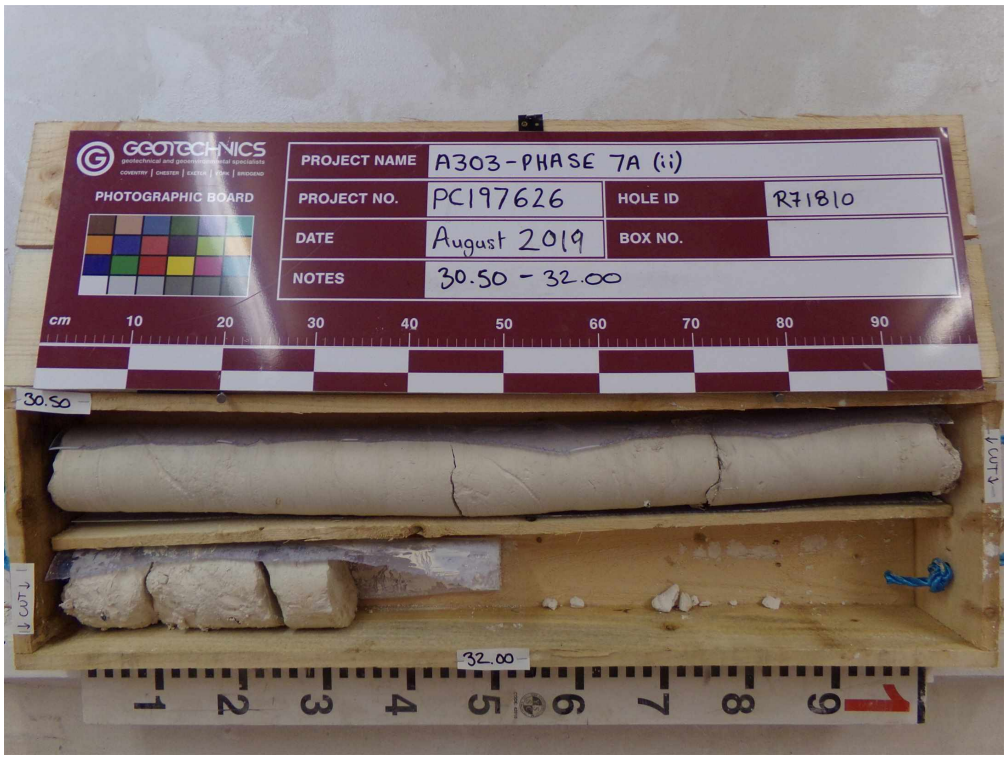


R71810 27.50-29.00m

R71810 29.00-30.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

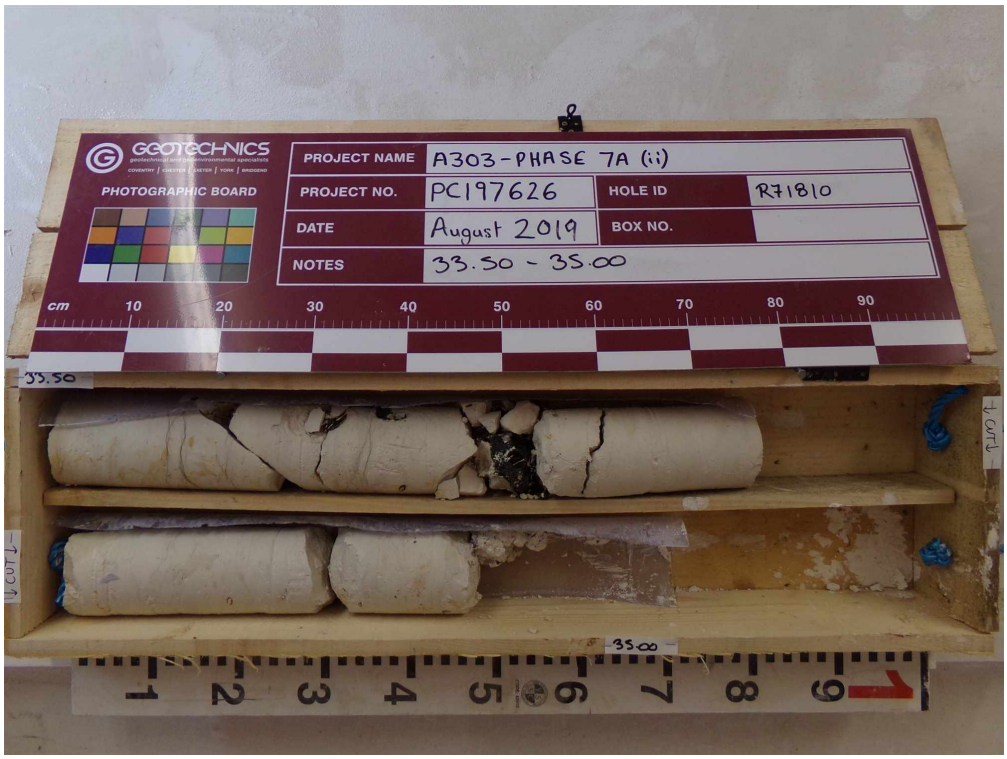


R71810 30.50-32.00m

R71810 32.00-33.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71810 33.50-35.00m

R71810 35.00-36.50m

Project Number : PC197626

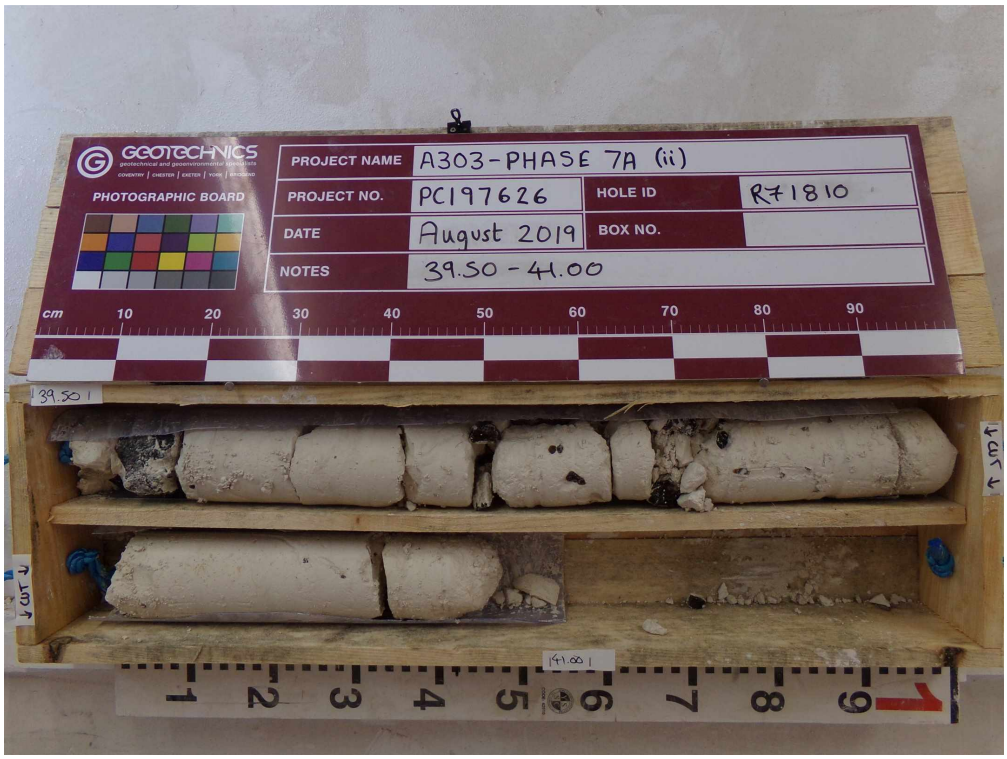
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71810 36.50-38.00m

R71810 38.00-39.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



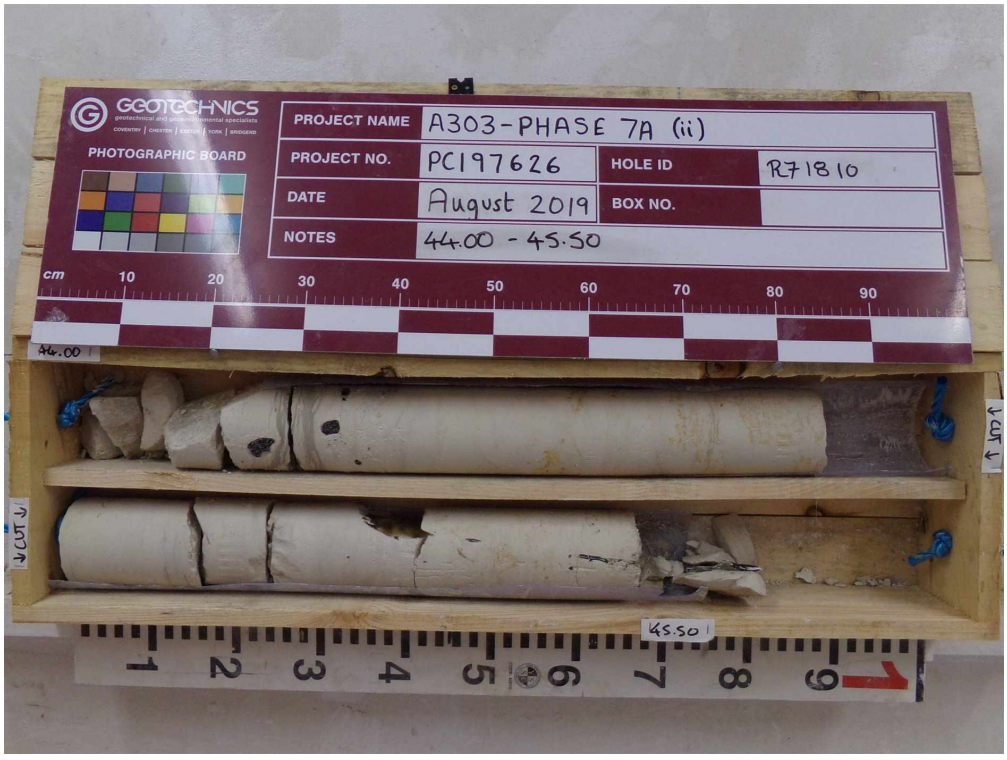
R71810 39.50-41.00m

R71810 41.00-42.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71810 42.50-44.00m

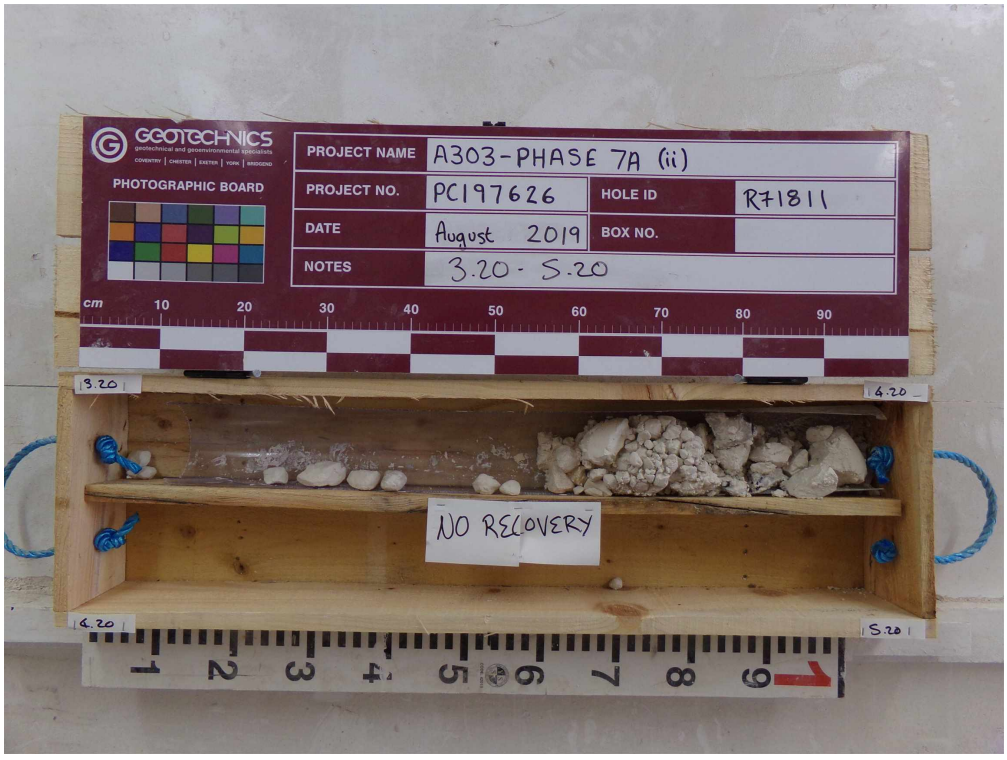


R71810 44.00-45.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 1.20-3.20m



R71811 3.20-5.20m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 5.20-7.00m

R71811 7.00-9.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 9.00-10.00m

R71811 10.00-11.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 11.50-13.00m

R71811 13.00-14.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 14.50-16.00m

R71811 16.00-17.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 17.50-19.00m

R71811 19.00-20.50m

Project Number : PC197626

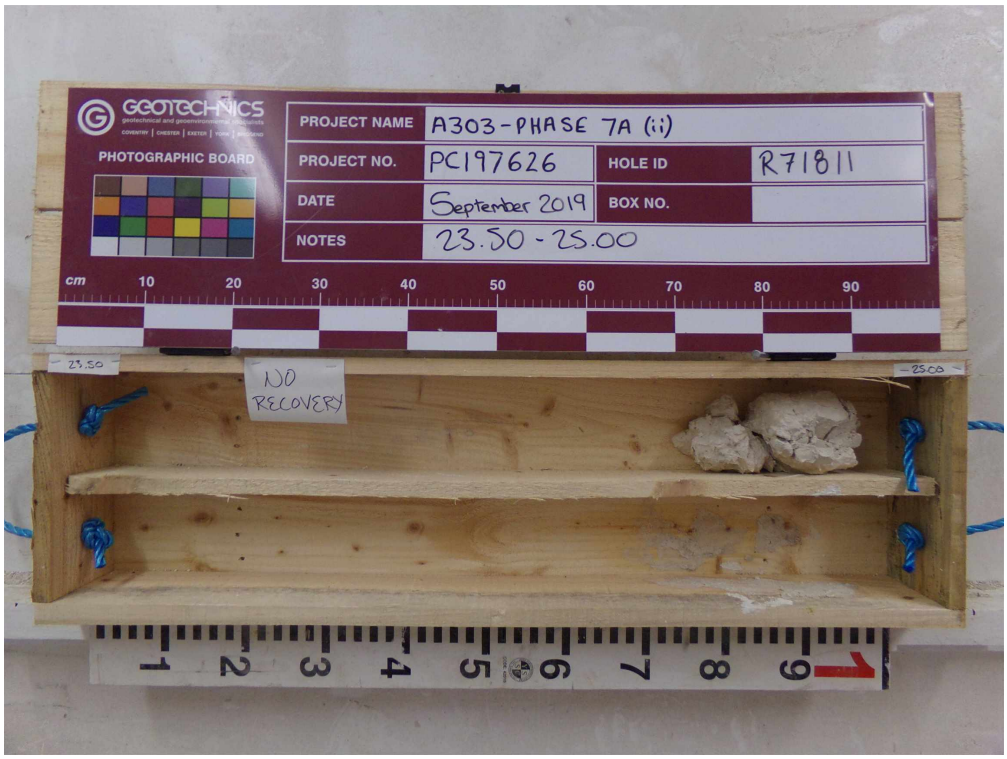
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 20.50-22.00m

R71811 22.00-23.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71811 23.50-25.00m

R71811 25.00-26.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 26.50-28.00m

R71811 28.00-29.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 29.50-31.00m

R71811 31.00-32.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 32.50-34.00m

R71811 34.00-35.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 35.50-37.00m

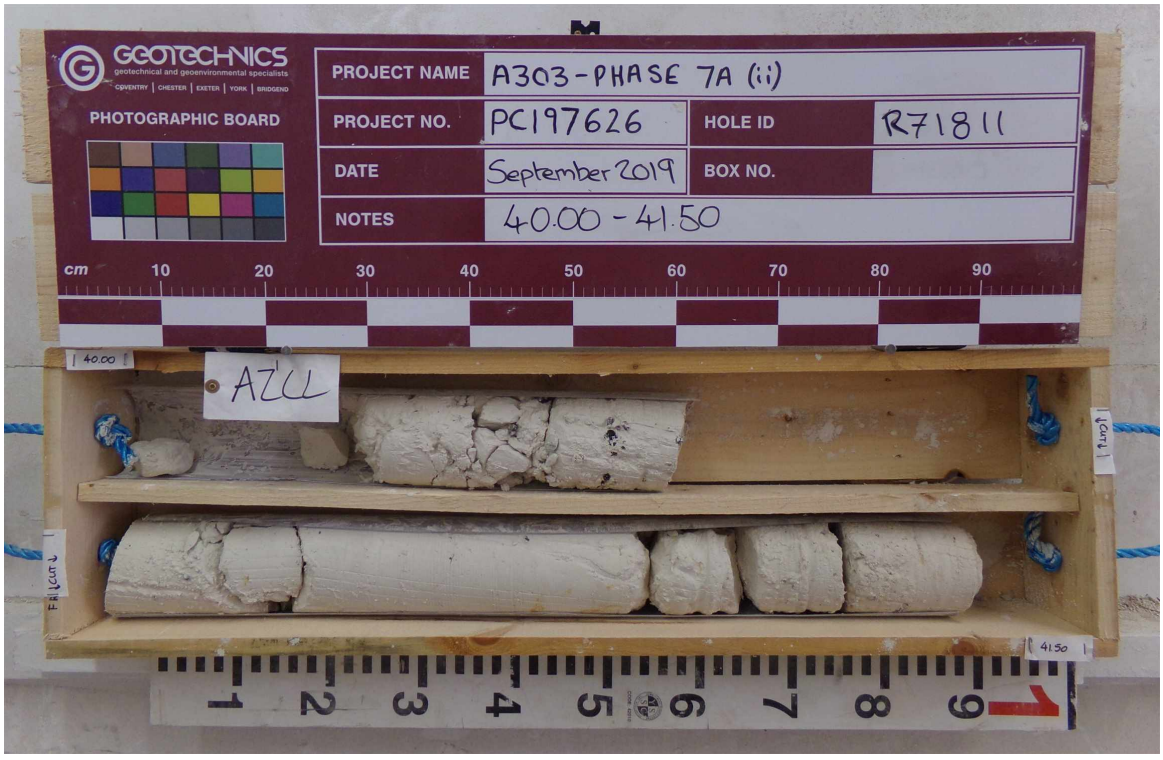
R71811 37.00-38.50m

PHOTOGRAPHS

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 38.50-40.00m



R71811 40.00-41.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 41.50-43.00m

R71811 43.00-44.50m

Project Number : PC197626

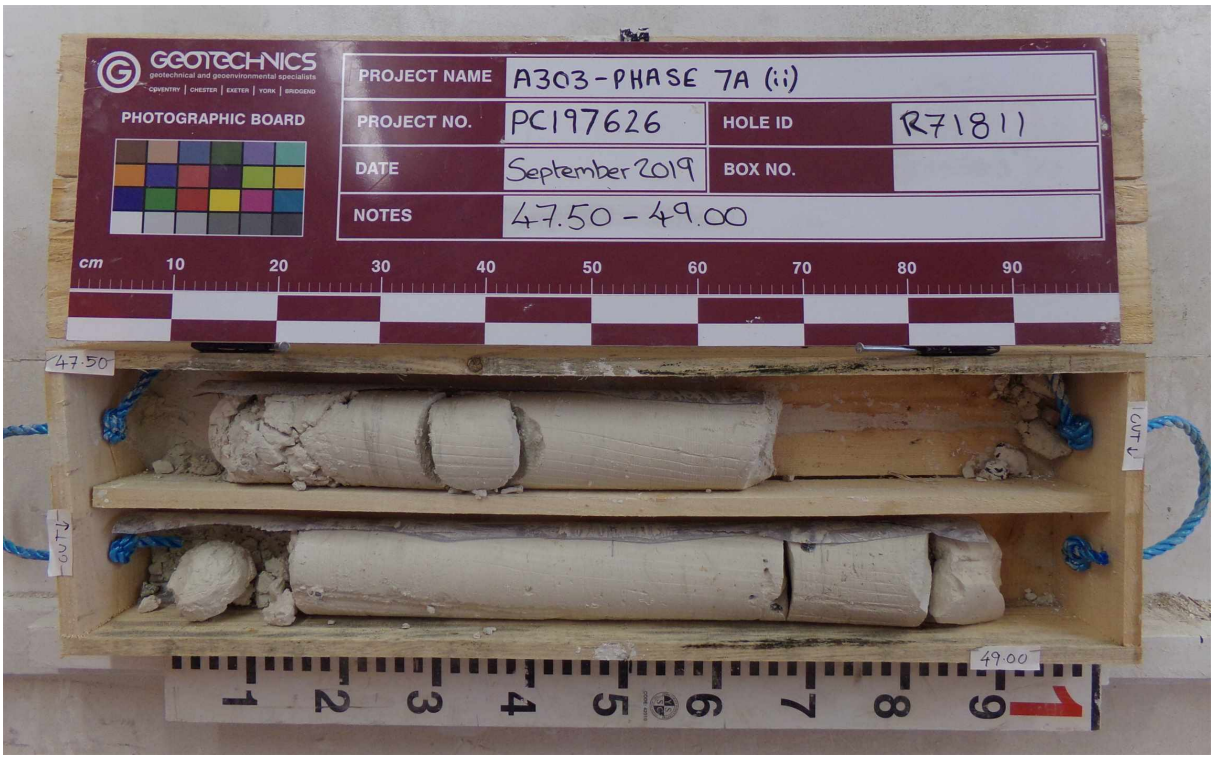
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71811 44.50-46.00m

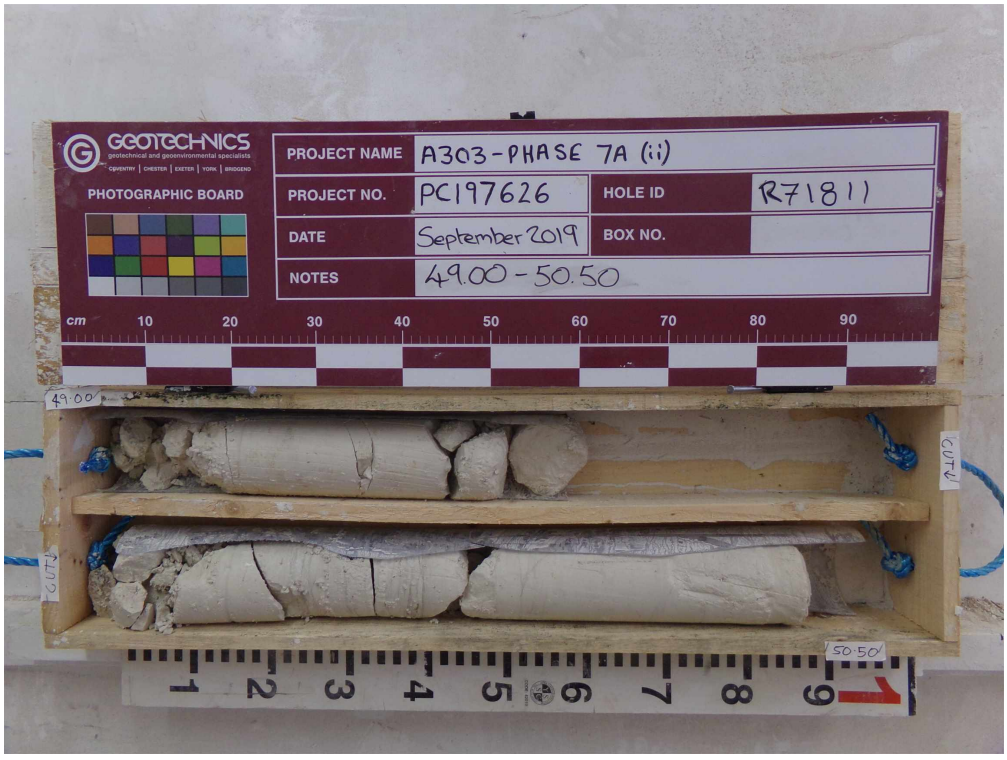
R71811 46.00-47.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71811 47.50-49.00m



R71811 49.00-50.50m

Project Number : PC197626

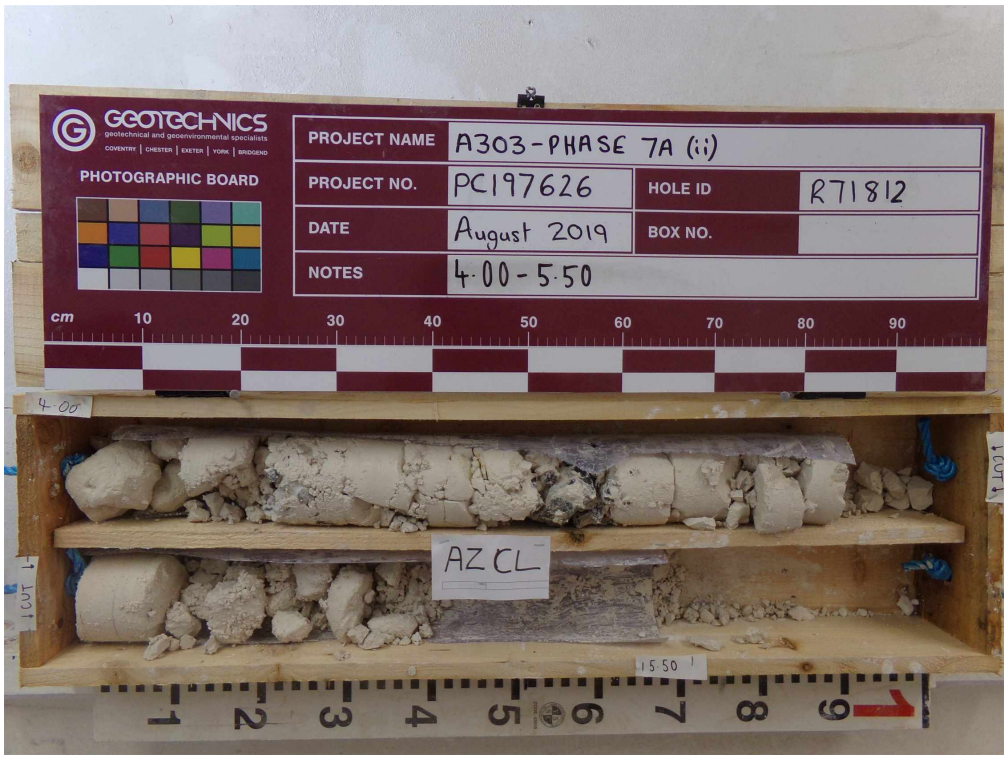
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71812 1.20-2.50m

R71812 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



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R71812 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71812 7.00-8.50m

R71812 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71812 10.00-11.50m

R71812 11.50-13.00m

Project Number : PC197626

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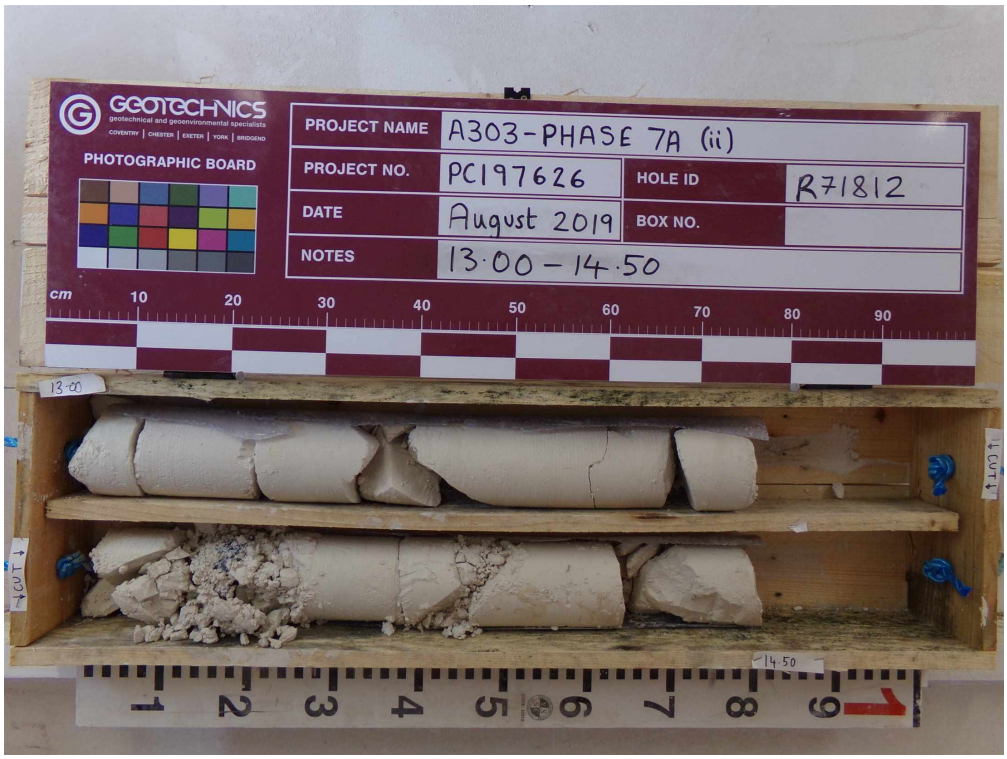

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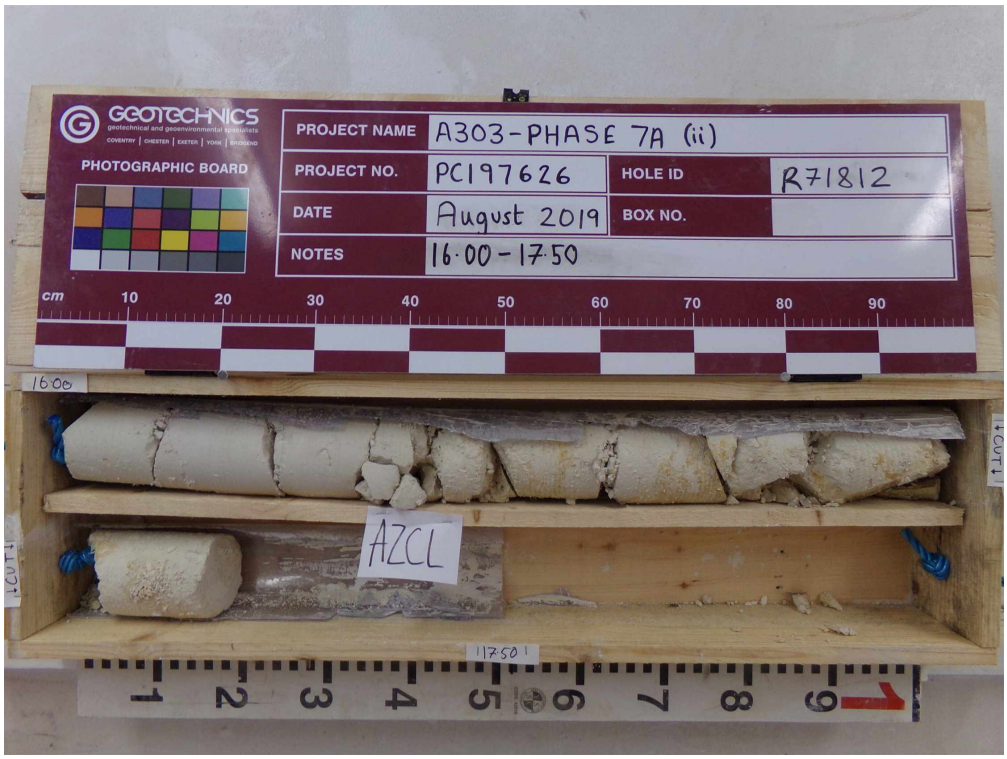
R71812 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



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R71812 17.50-19.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

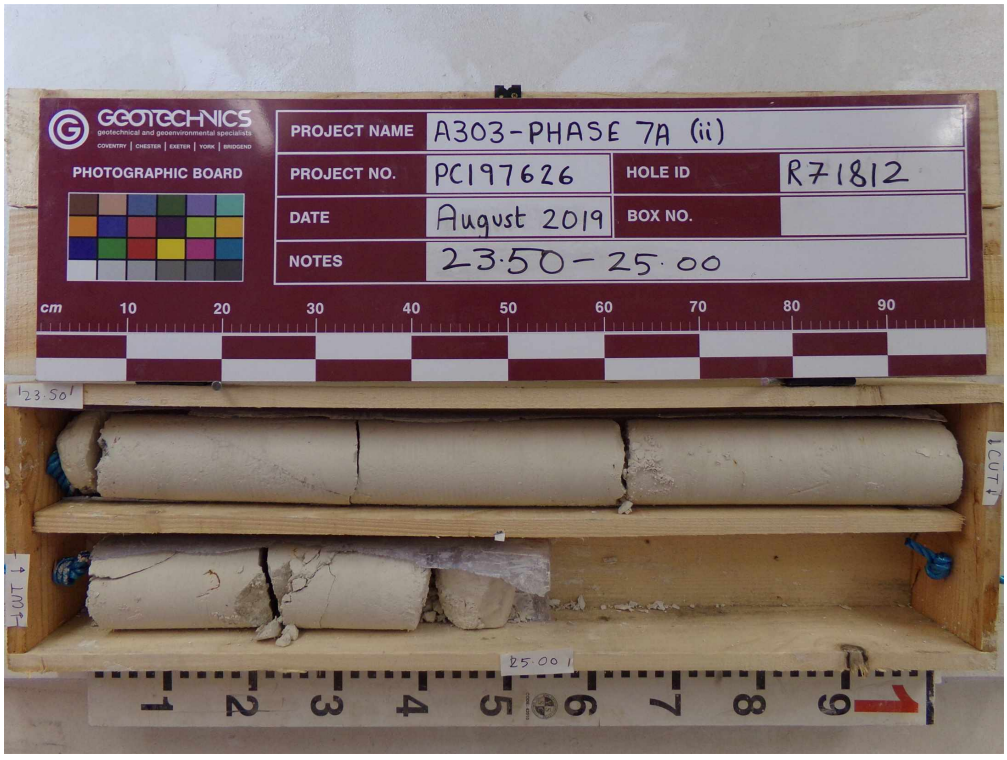
R71812 19.00-20.50m

R71812 20.50-22.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71812 22.00-23.50m



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Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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R71812 26.50-28.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71812 28.00-29.50m

R71812 29.50-31.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

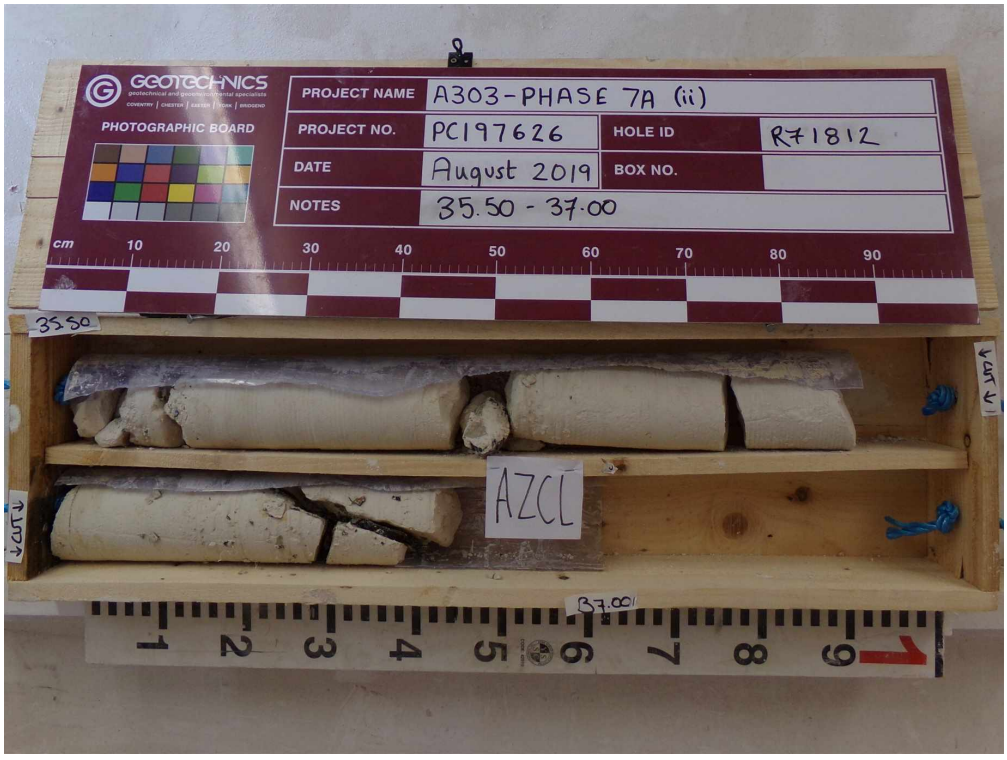
R71812 31.00-32.50m

R71812 32.50-34.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71812 34.00-35.50m



R71812 35.50-37.00m

Project Number : PC197626

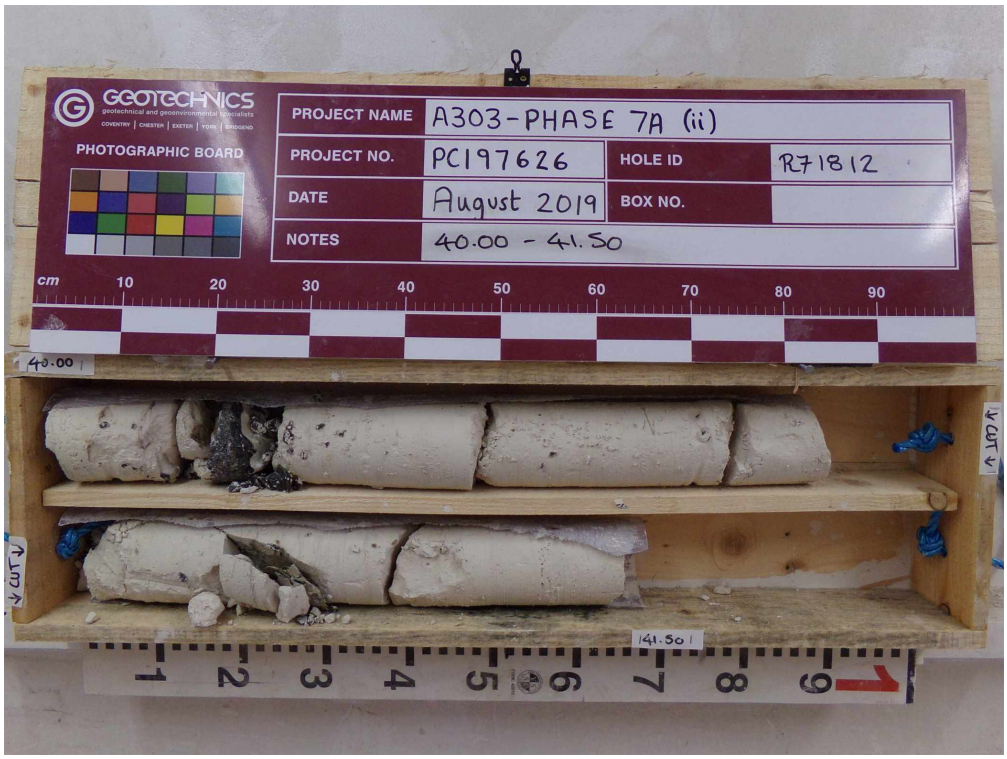
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71812 37.00-38.50m

R71812 38.50-40.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



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R71812 41.50-43.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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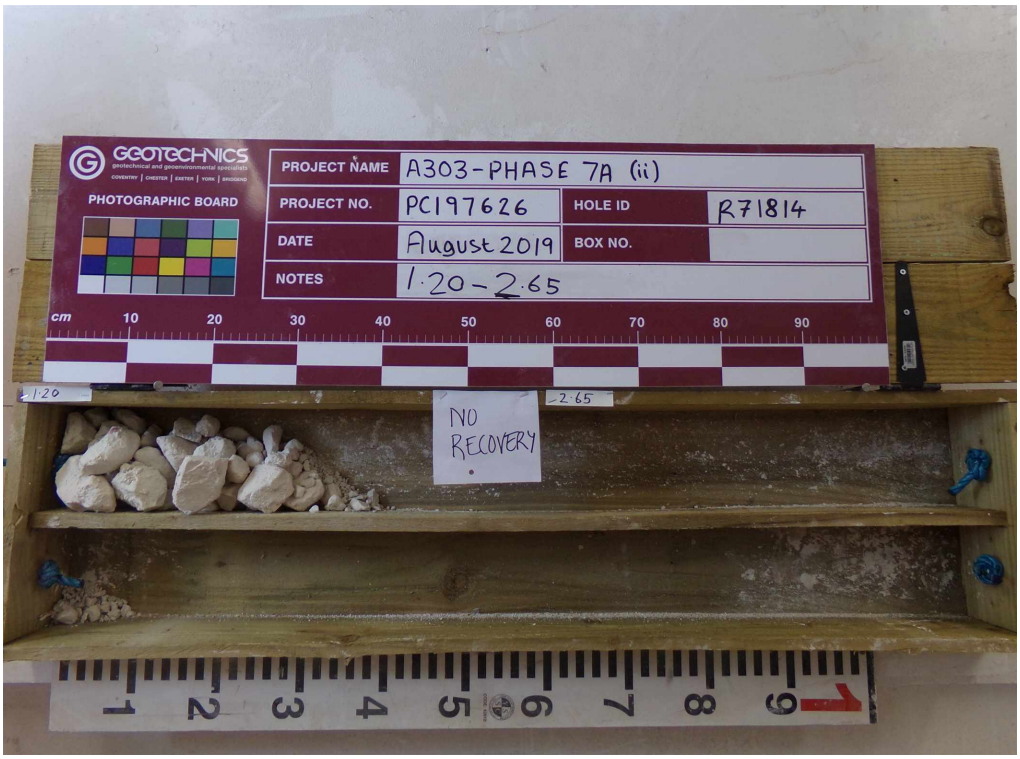
R71812 44.50-46.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



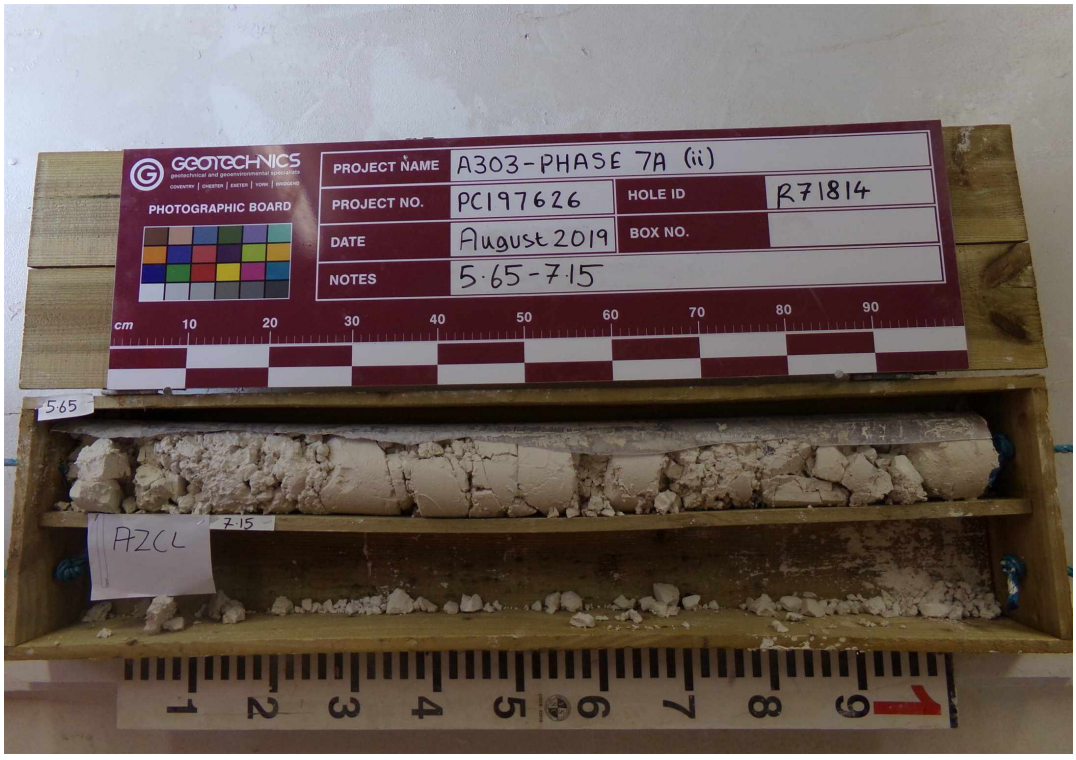
R71814 1.20-2.65m

R71814 2.65-4.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71814 4.15-5.65m

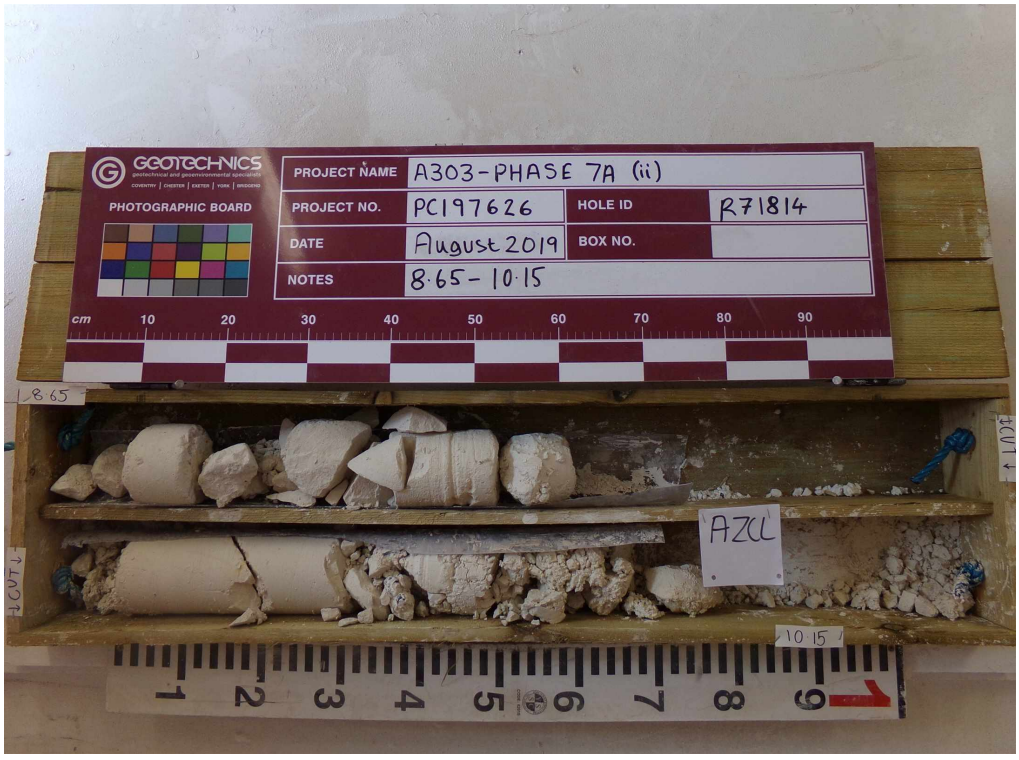


R71814 5.65-7.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

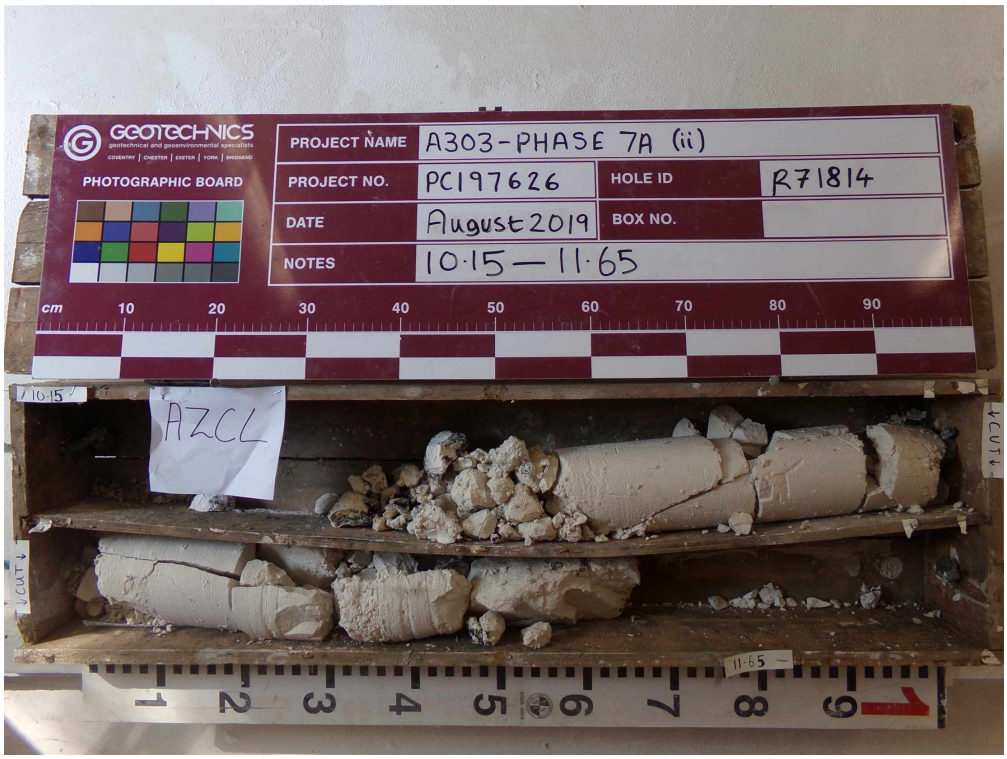
R71814 7.15-8.65m



R71814 8.65-10.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71814 10.15-11.65m

R71814 11.65-13.15m

Project Number : PC197626

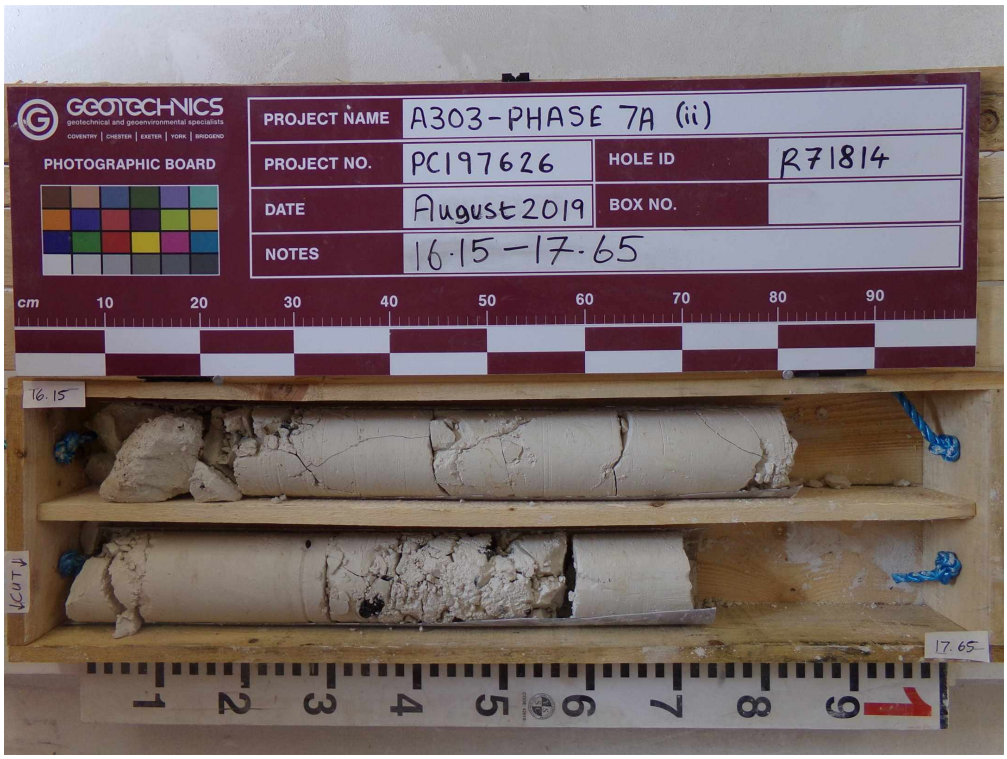
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71814 13.15-14.65m

R71814 14.65-16.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71814 16.15-17.65m

R71814 17.65-19.15m

Project Number : PC197626

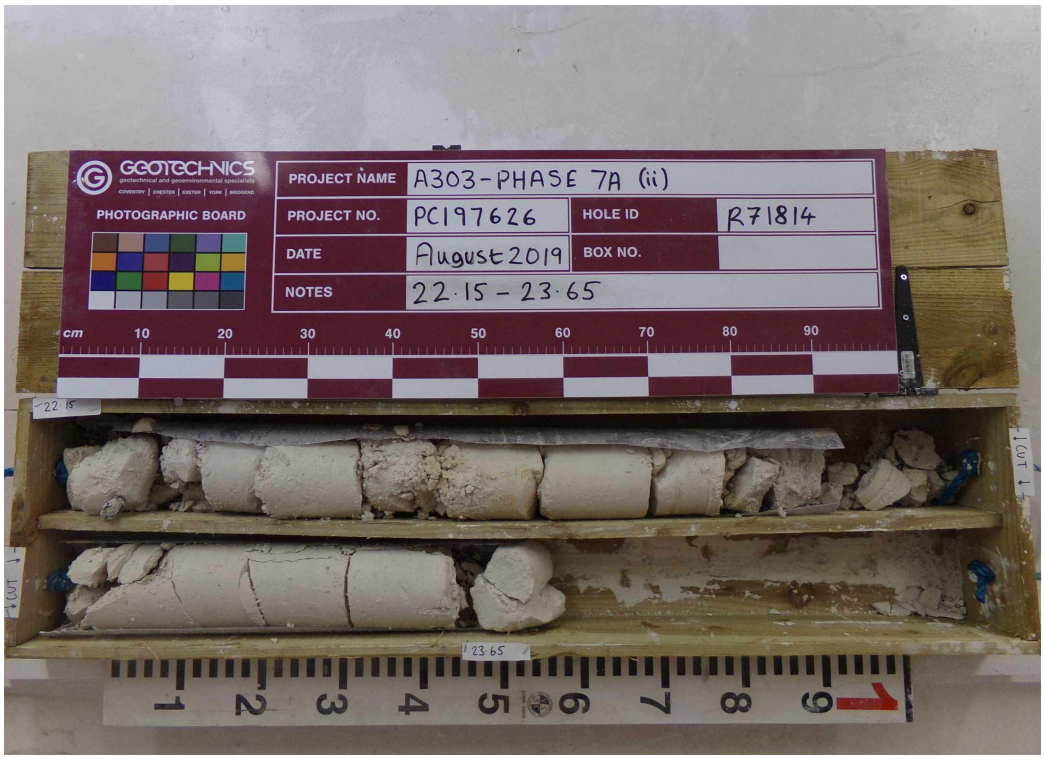
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71814 19.15-20.65m

R71814 20.65-22.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

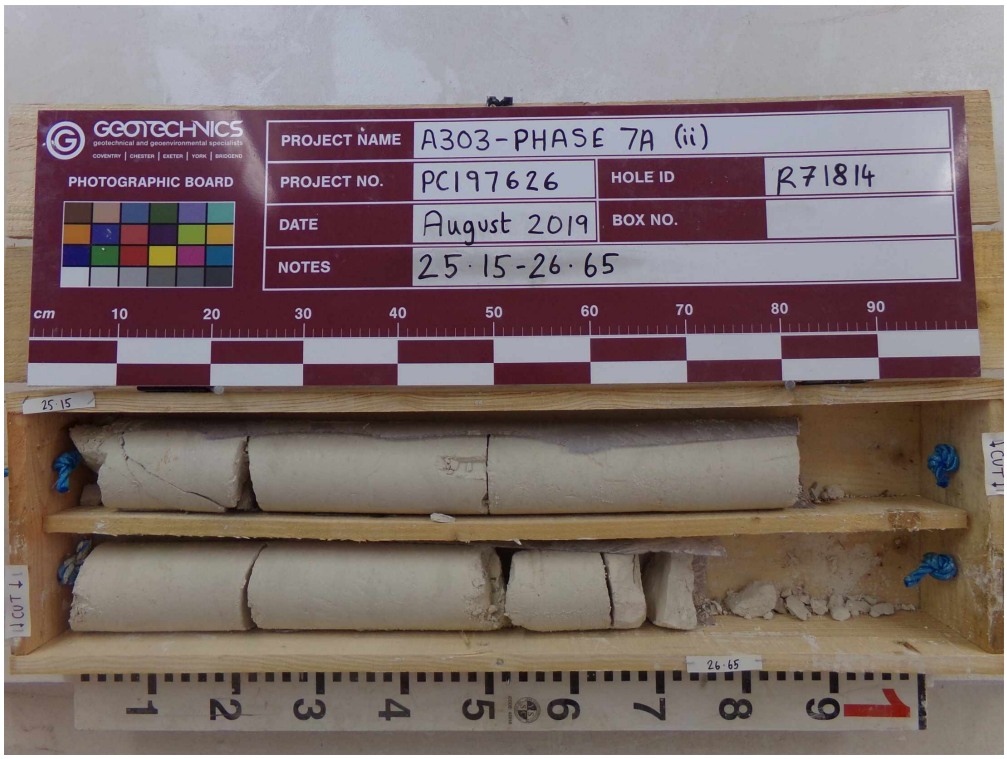


R71814 22.15-23.65m

R71814 23.65-25.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



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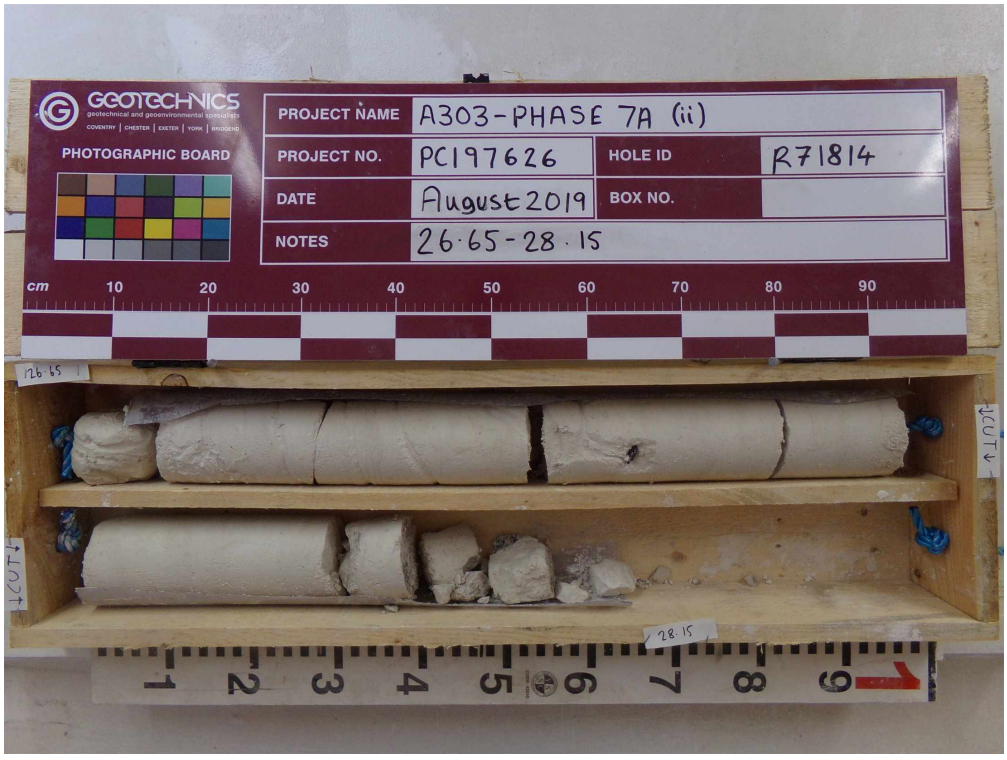


R71814 26.65-28.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71814 28.15-29.65m

R71814 29.65-31.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71814 31.15-32.65m

R71814 32.65-34.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

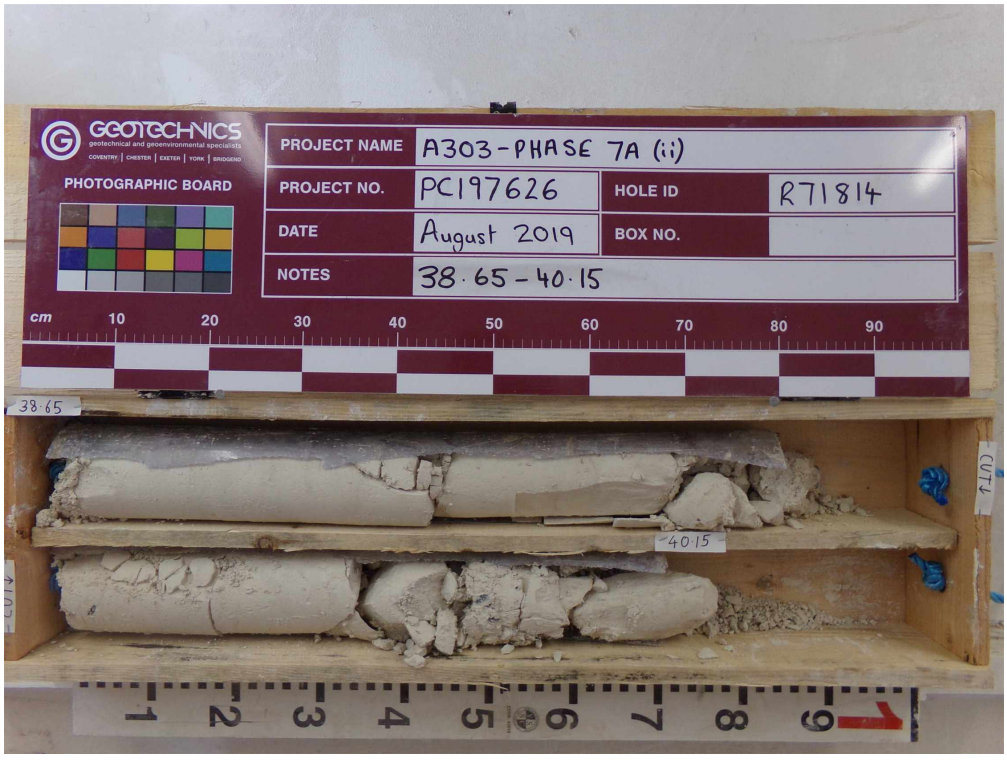
R71814 34.15-35.65m

R71814 35.65-37.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71814 37.15-38.65m

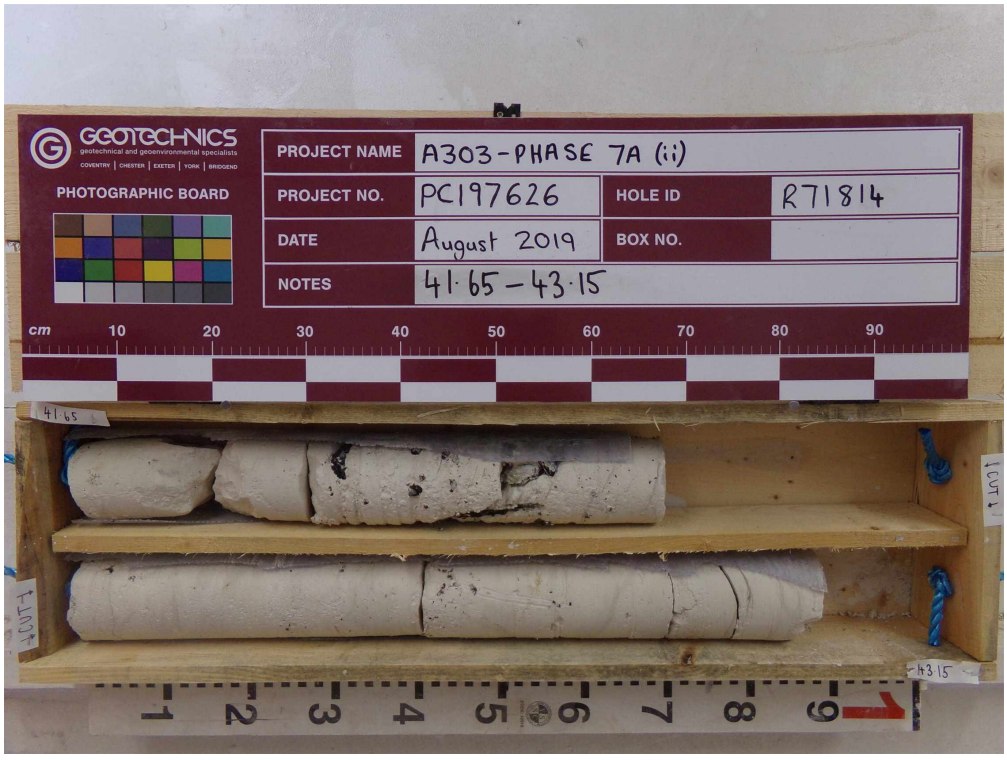


R71814 38.65-40.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71814 40.15-41.65m



R71814 41.65-43.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71814 43.15-44.65m

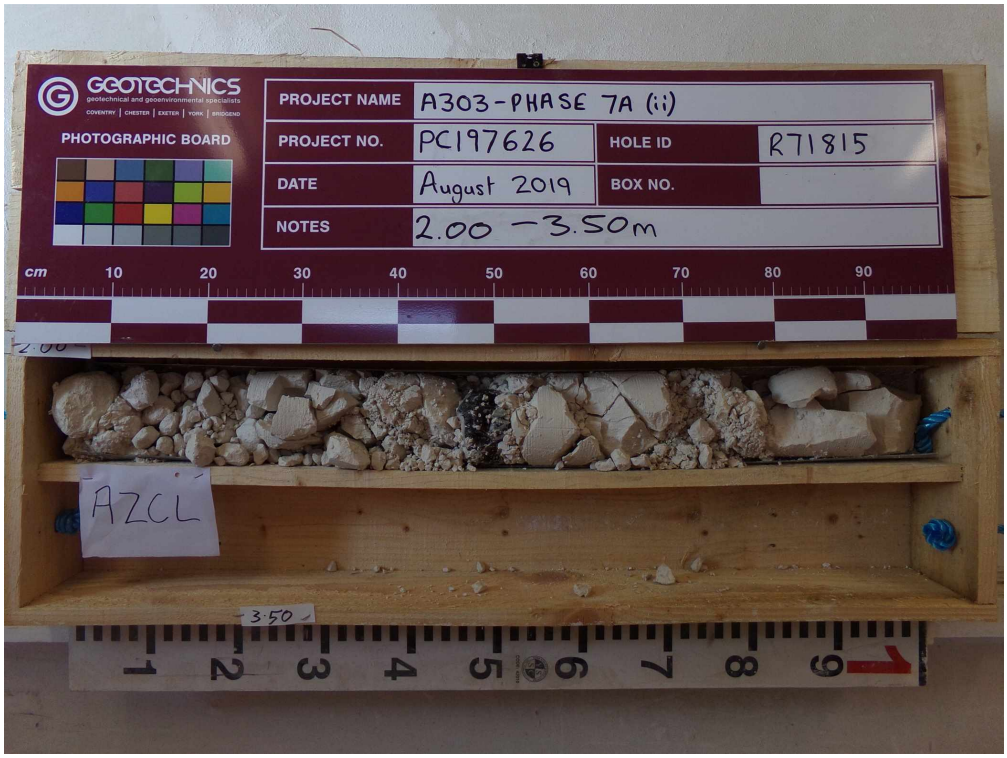
R71814 44.65-46.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

no photograph as rotary open hole

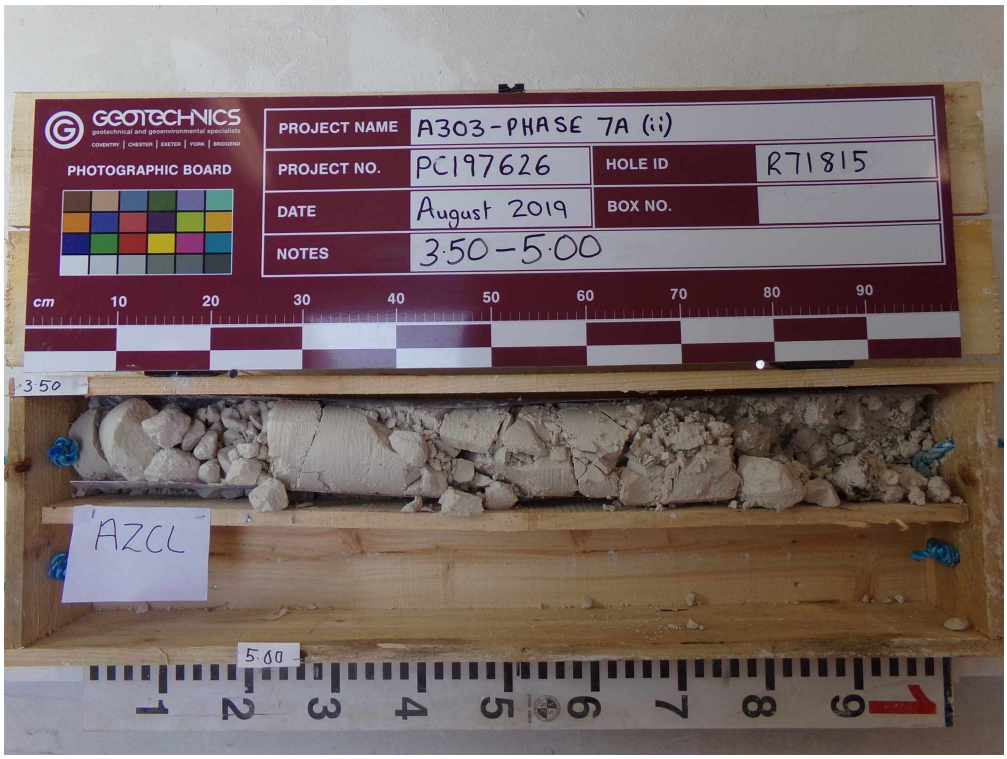
R71815 1.20-2.00m



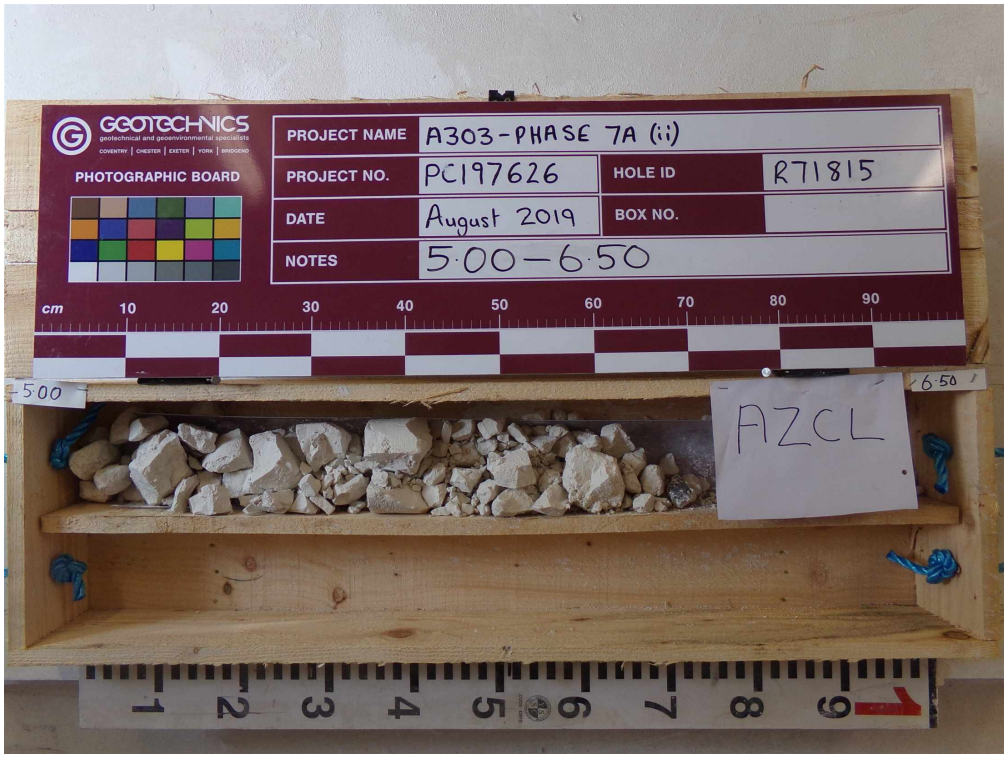
R71815 2.00-3.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71815 3.50-5.00m

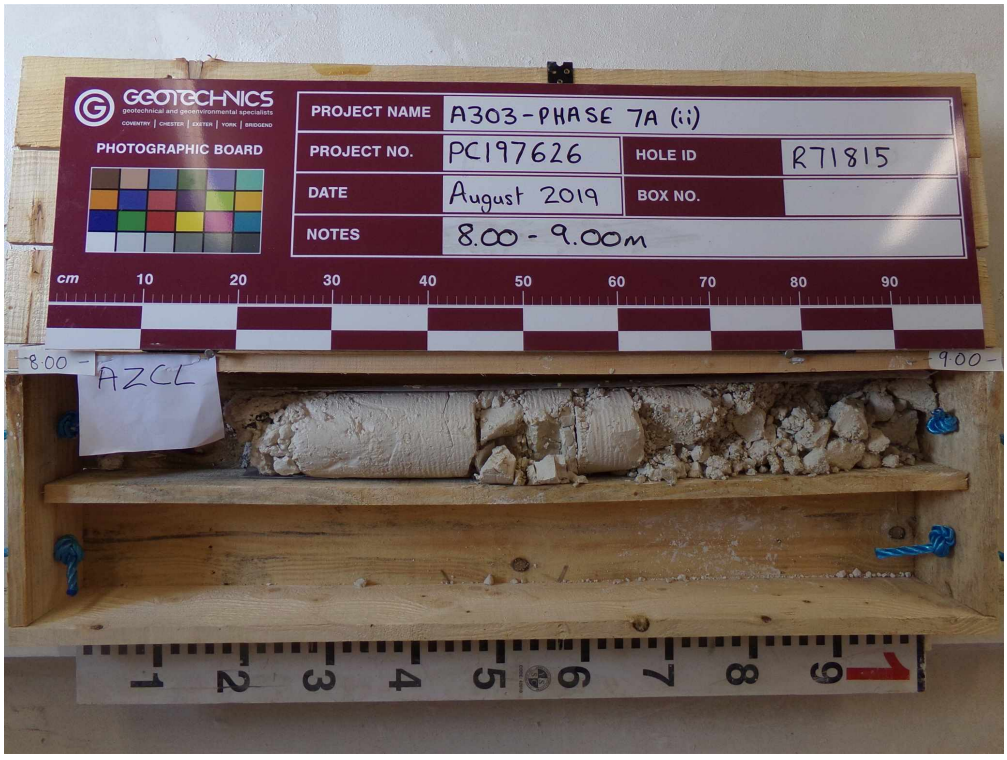


R71815 5.00-6.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71815 6.50-8.00m



R71815 8.00-9.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71815 9.00-10.00m

R71815 10.00-11.20m

Project Number : PC197626

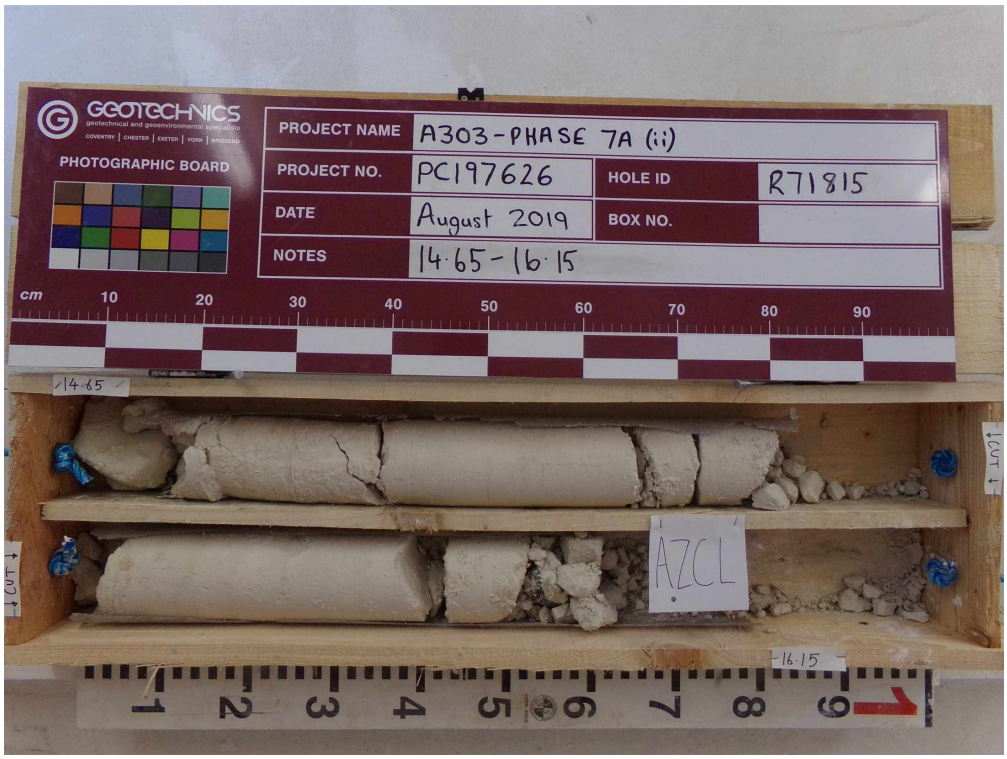
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71815 11.20-12.70m

R71815 12.70-14.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

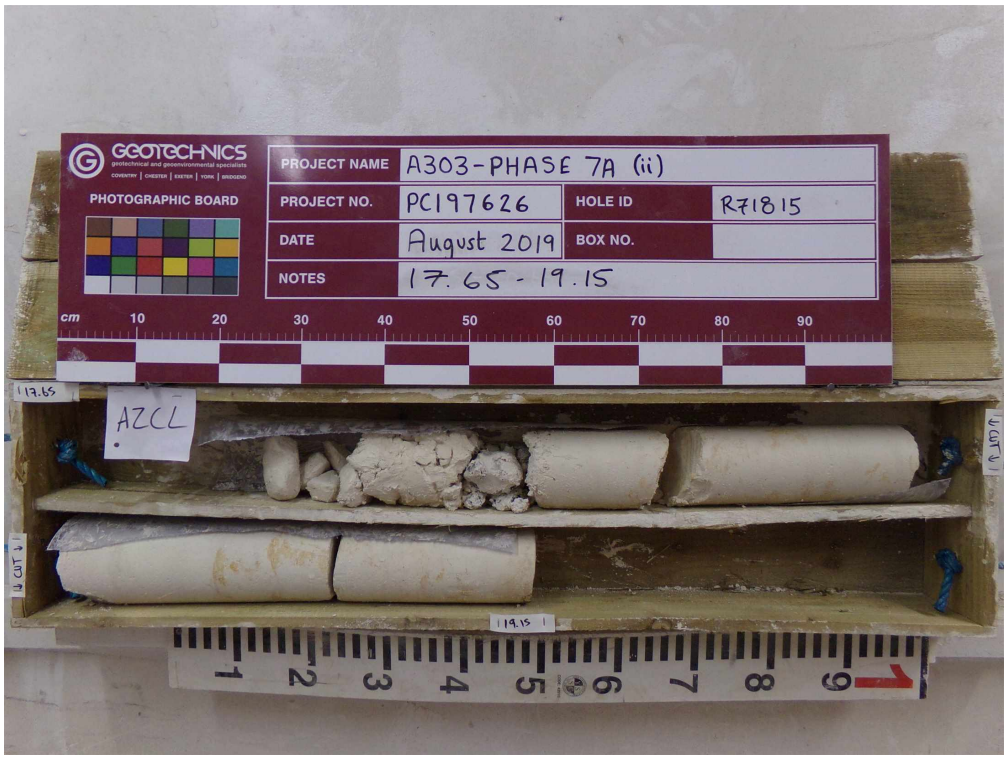


R71815 14.65-16.15m

R71815 16.15-17.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71815 17.65-19.15m

R71815 19.15-20.65m

Project Number : PC197626

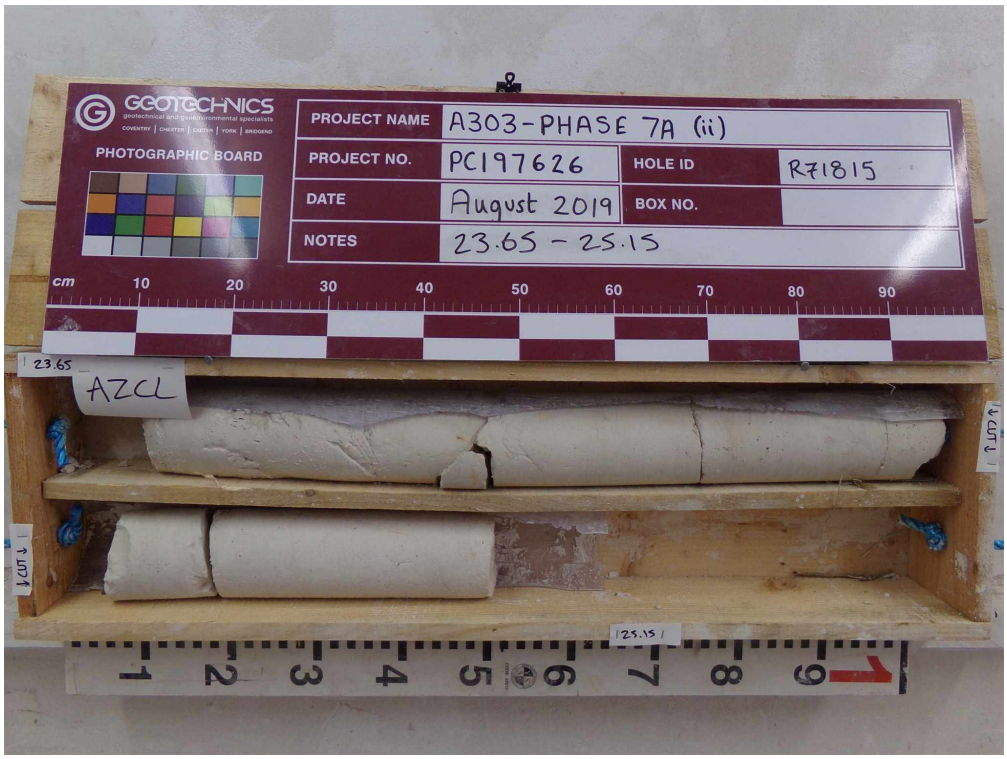
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71815 20.65-22.15m

R71815 22.15-23.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71815 23.65-25.15m

R71815 25.15-26.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

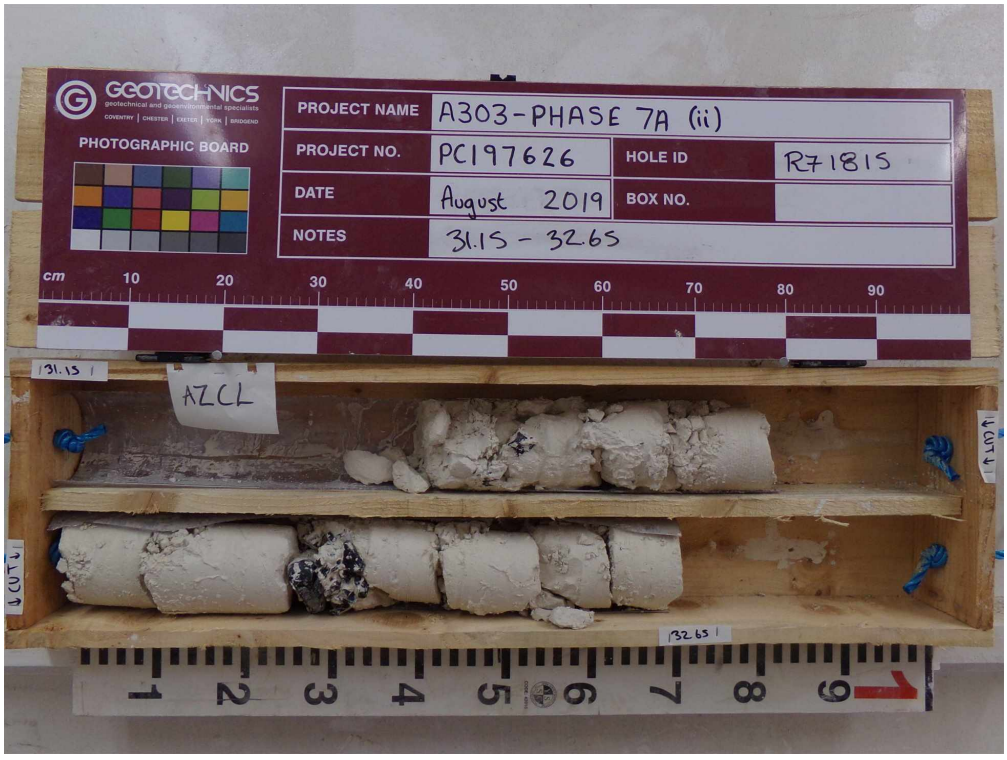
R71815 26.65-28.15m

R71815 28.15-29.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71815 29.65-31.15m

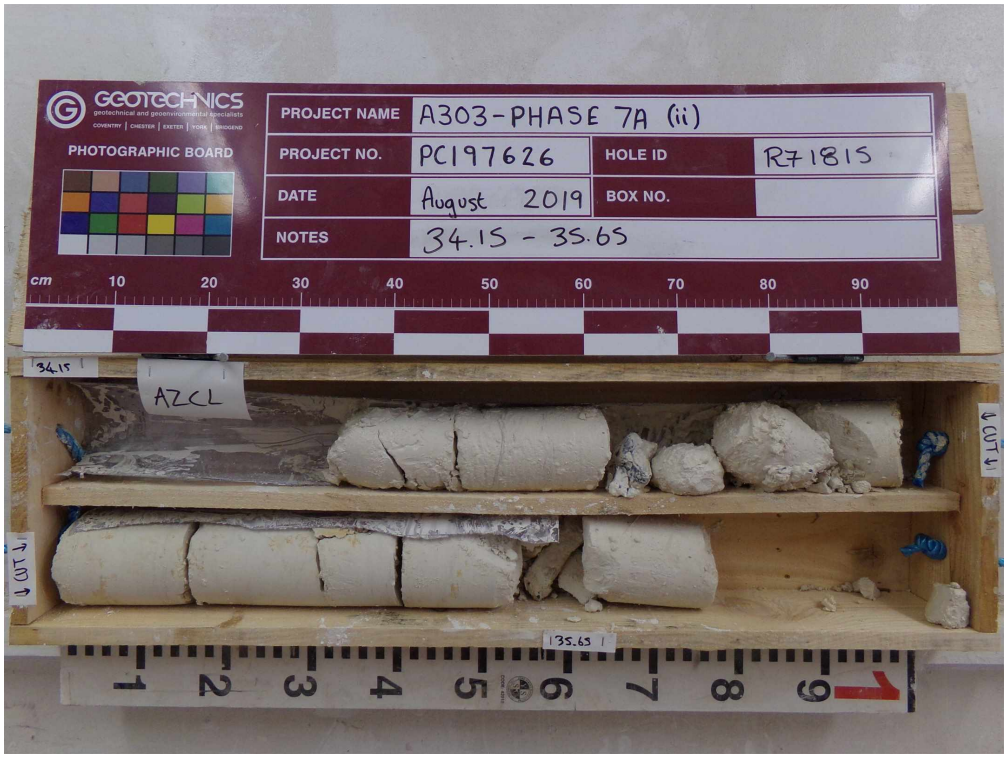


R71815 31.15-32.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71815 32.65-34.15m



R71815 34.15-35.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71815 35.65-37.15m

R71815 37.15-38.65m

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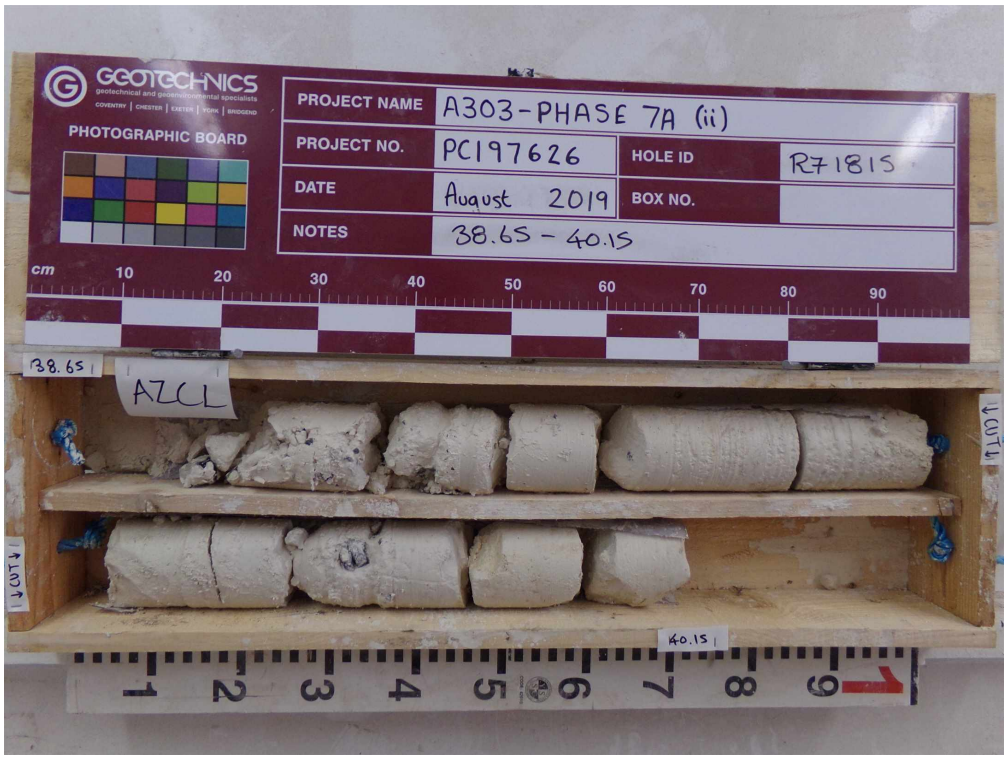


R71815 38.65-40.15m

R71815 40.15-41.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

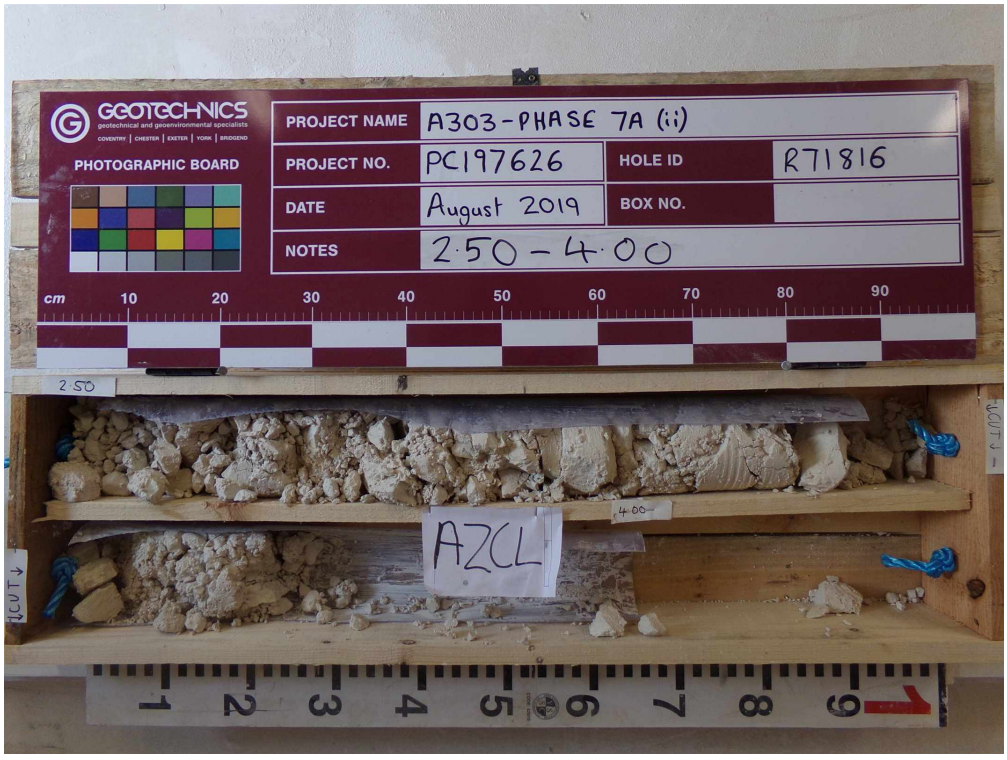
R71815 41.65-43.15m

R71815 43.15-44.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 1.20-2.50m



R71816 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 4.00-5.50m

R71816 5.50-7.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

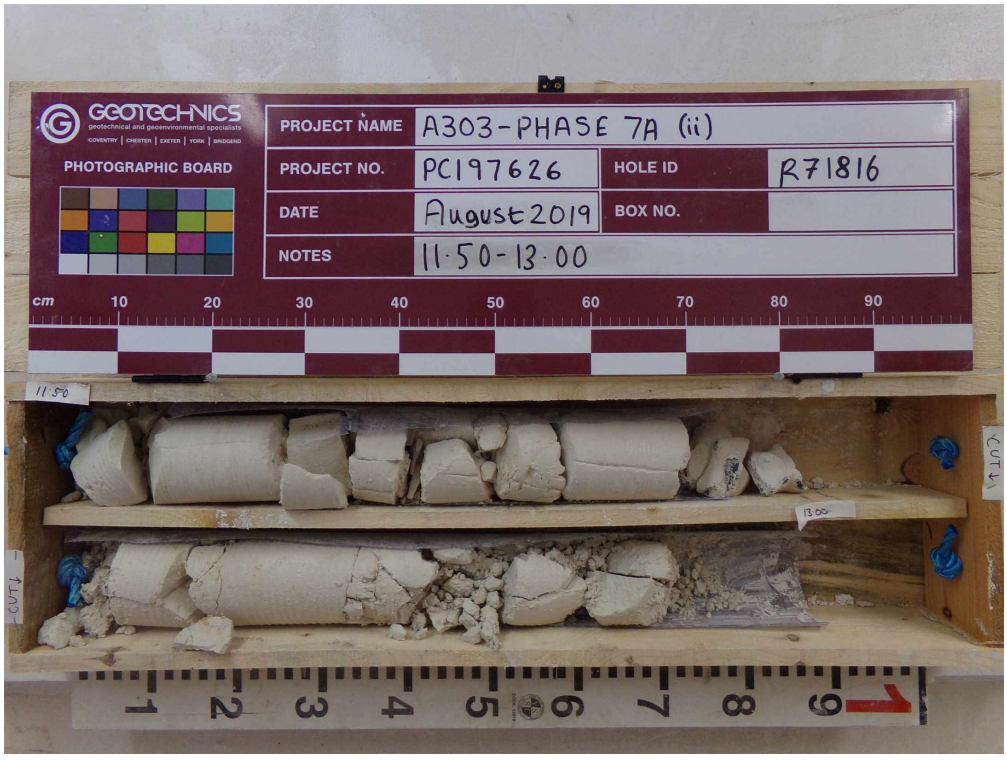
R71816 7.00-8.50m

R71816 8.50-10.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

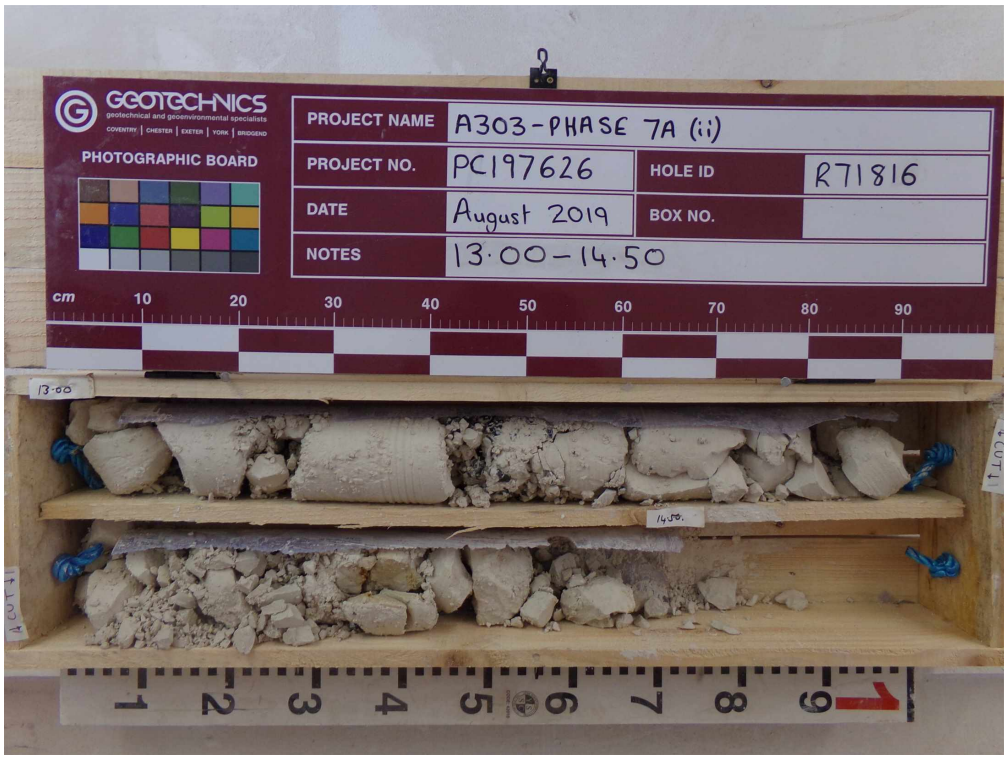
R71816 10.00-11.50m



R71816 11.50-13.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71816 13.00-14.50m

R71816 14.50-16.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 16.00-17.50m

R71816 17.50-19.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 19.00-20.50m

R71816 20.50-22.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

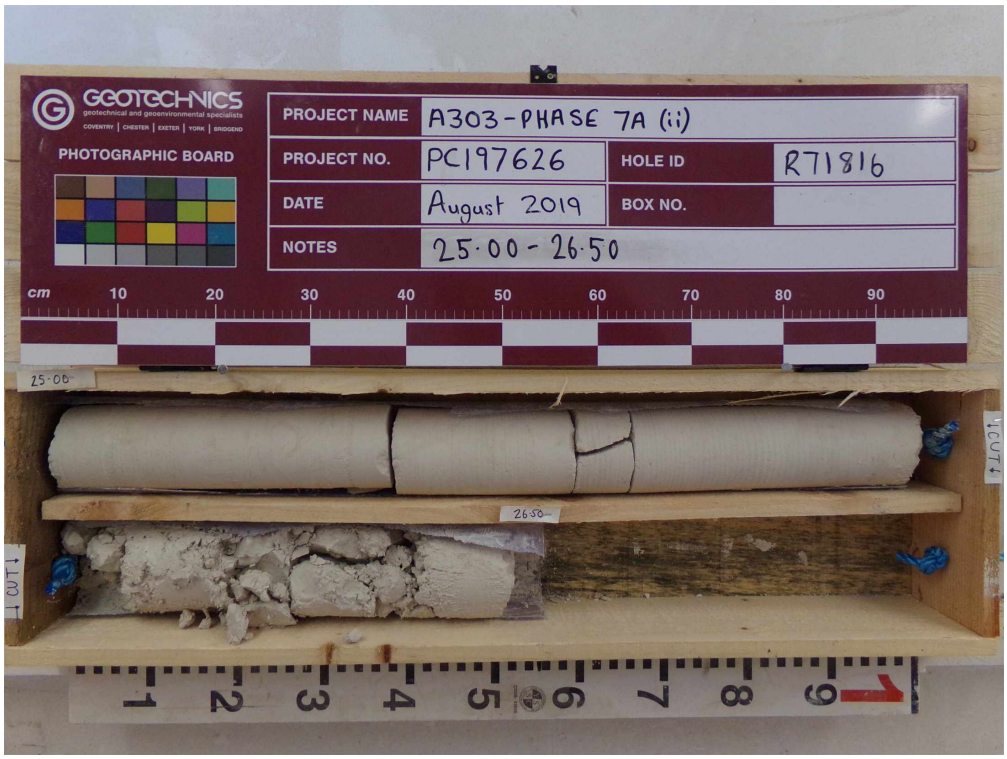
R71816 22.00-23.50m

R71816 23.50-25.00m

PHOTOGRAPHS

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



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R71816 26.50-28.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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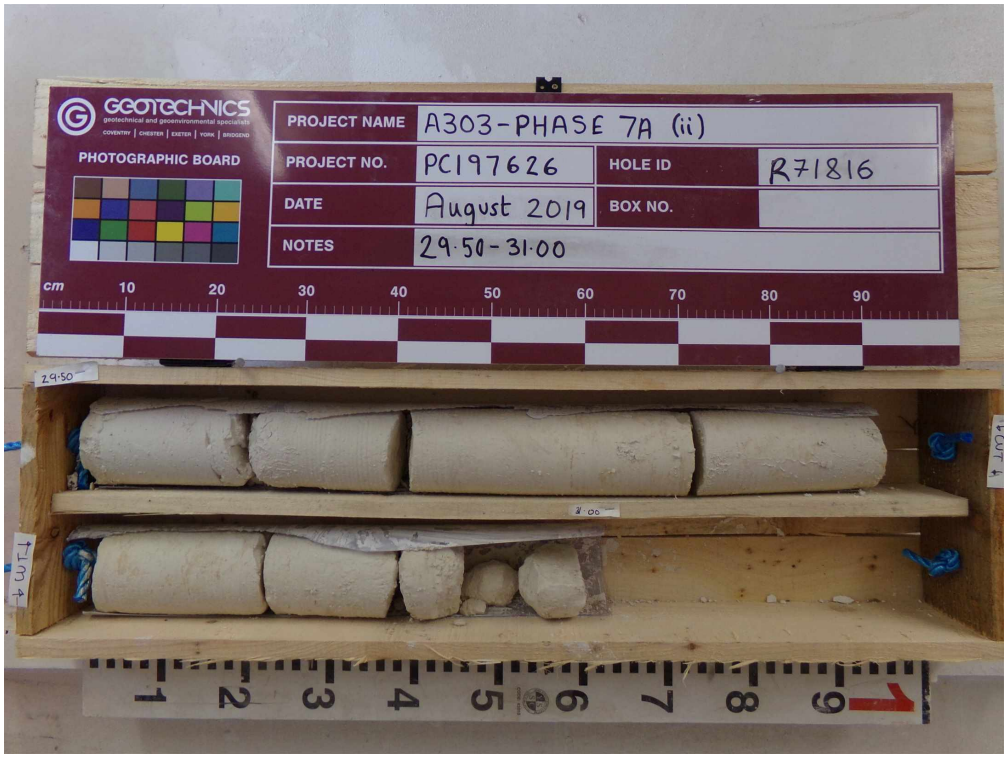

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Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 31.00-32.50m

R71816 32.50-34.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 34.00-35.50m

R71816 35.50-37.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 37.00-38.50m

R71816 38.50-40.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 40.00-41.50m

R71816 41.50-43.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71816 43.00-44.50m

R71816 44.50-45.20m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71818 1.20-2.50m

R71818 2.50-4.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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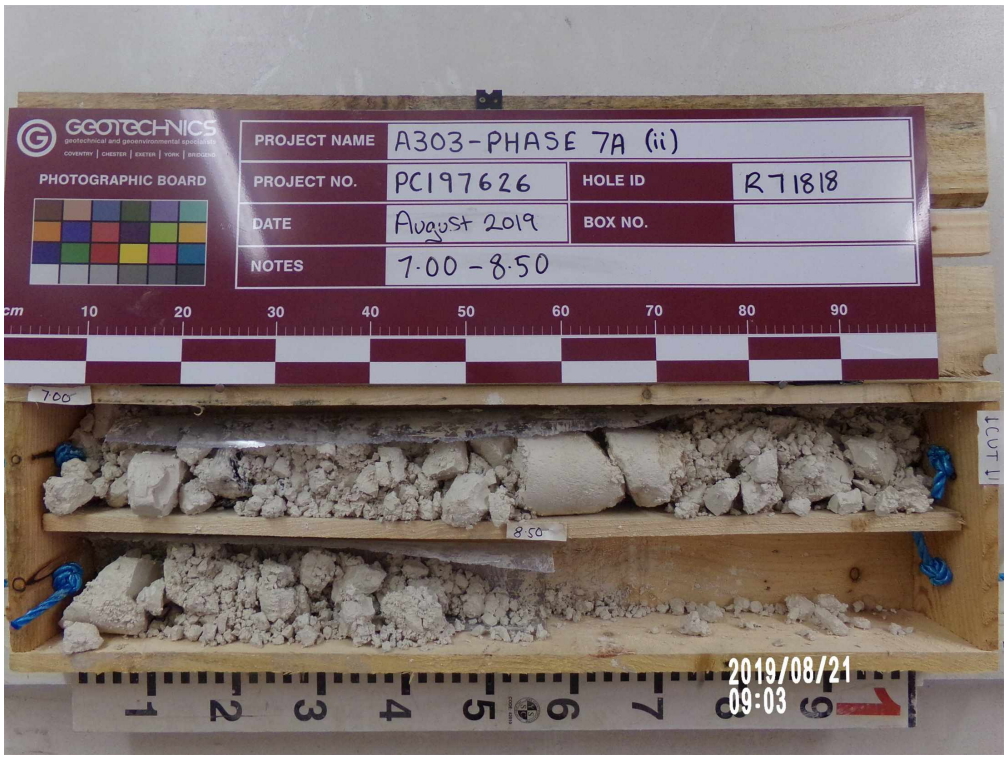

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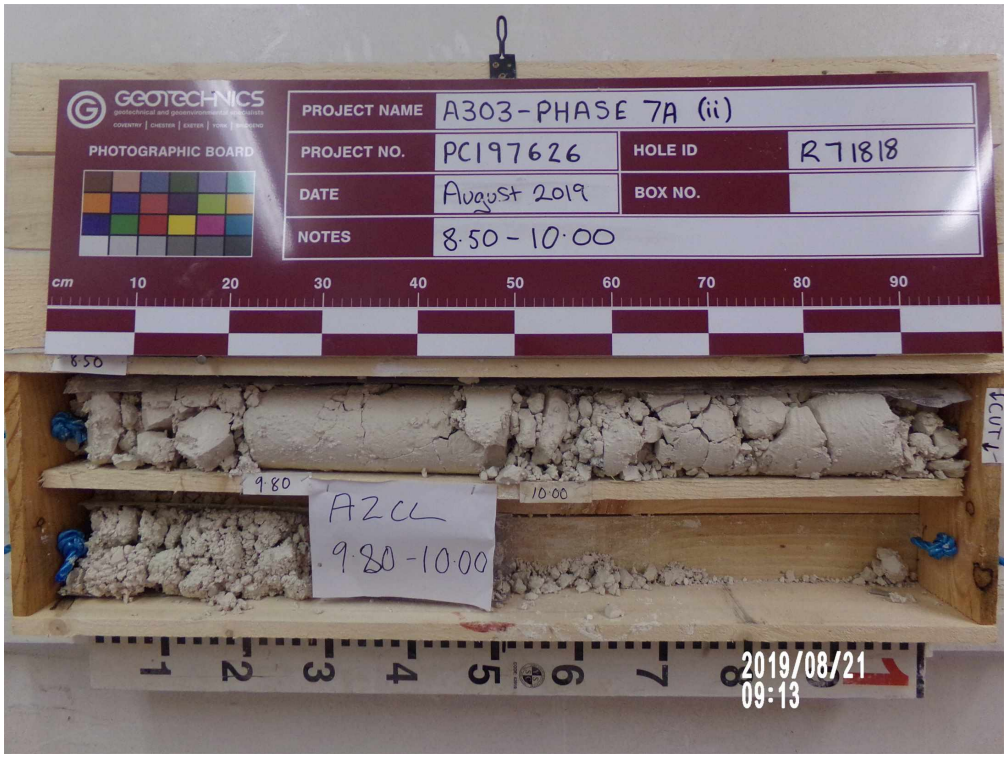

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Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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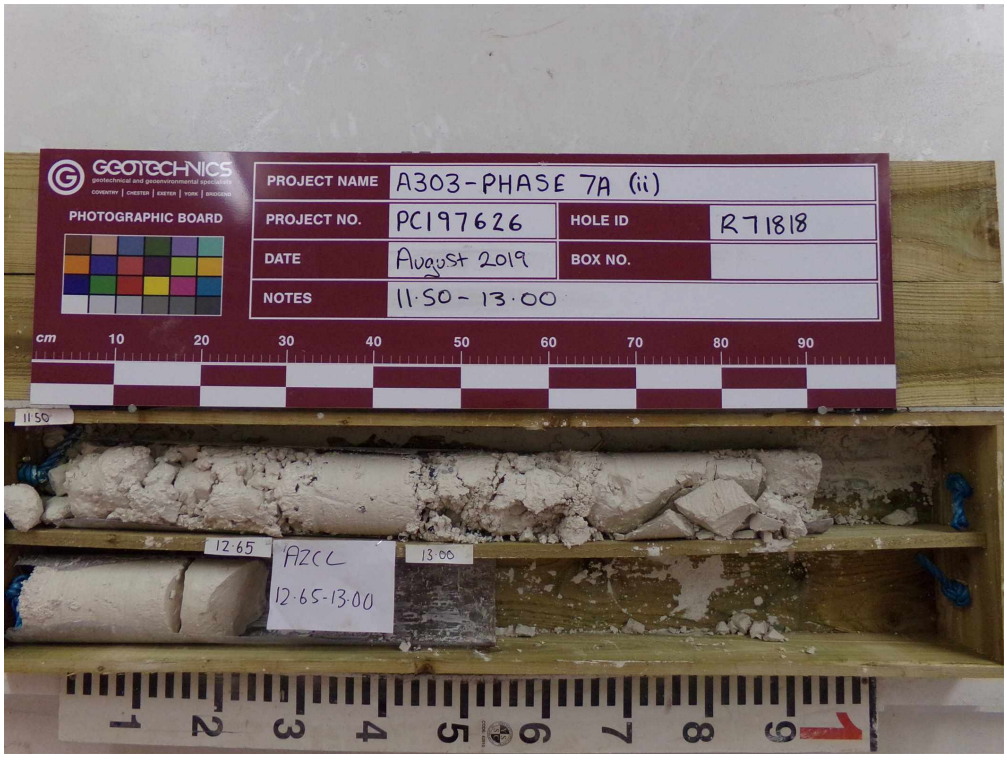

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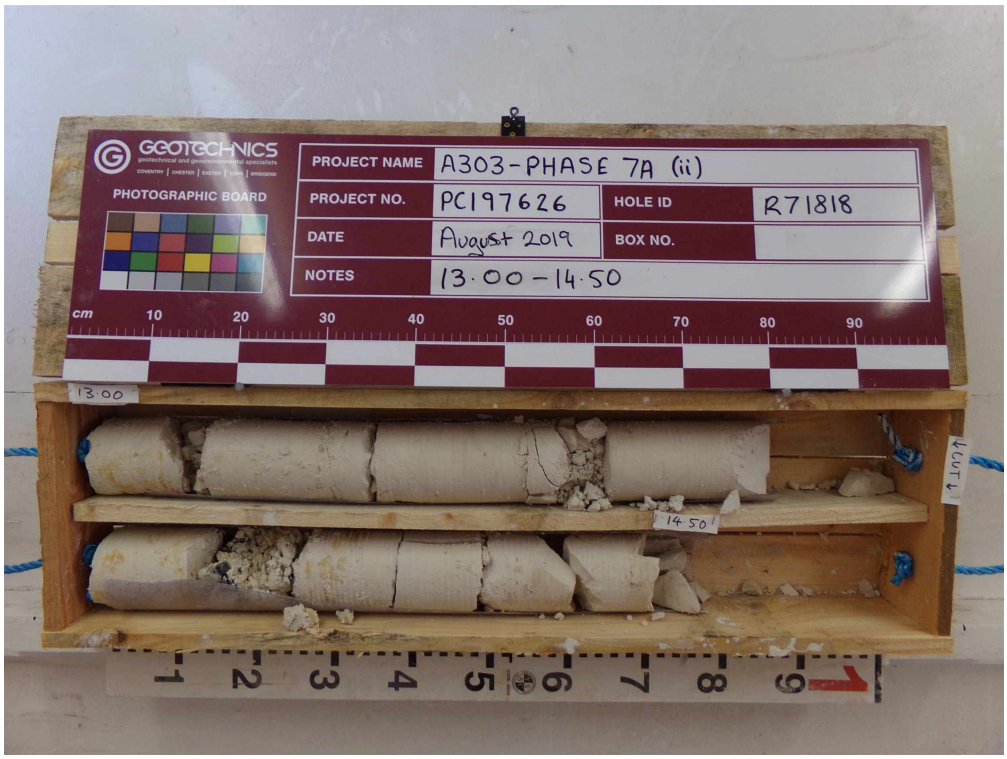

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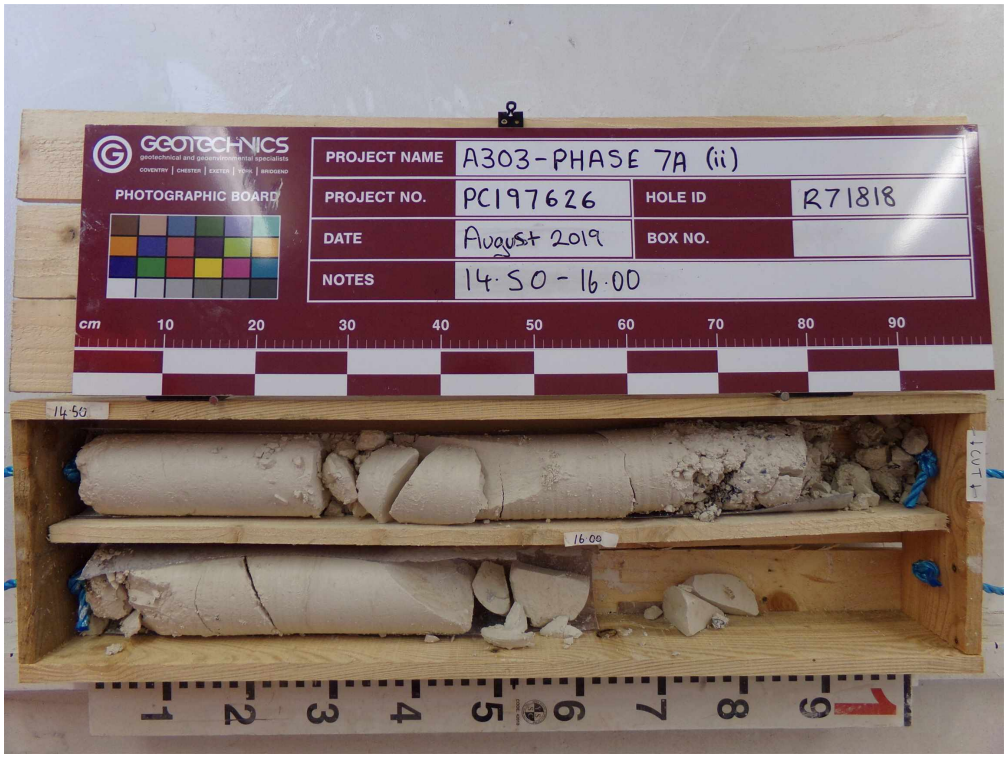

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Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71818 16.00-17.50m

R71818 17.50-19.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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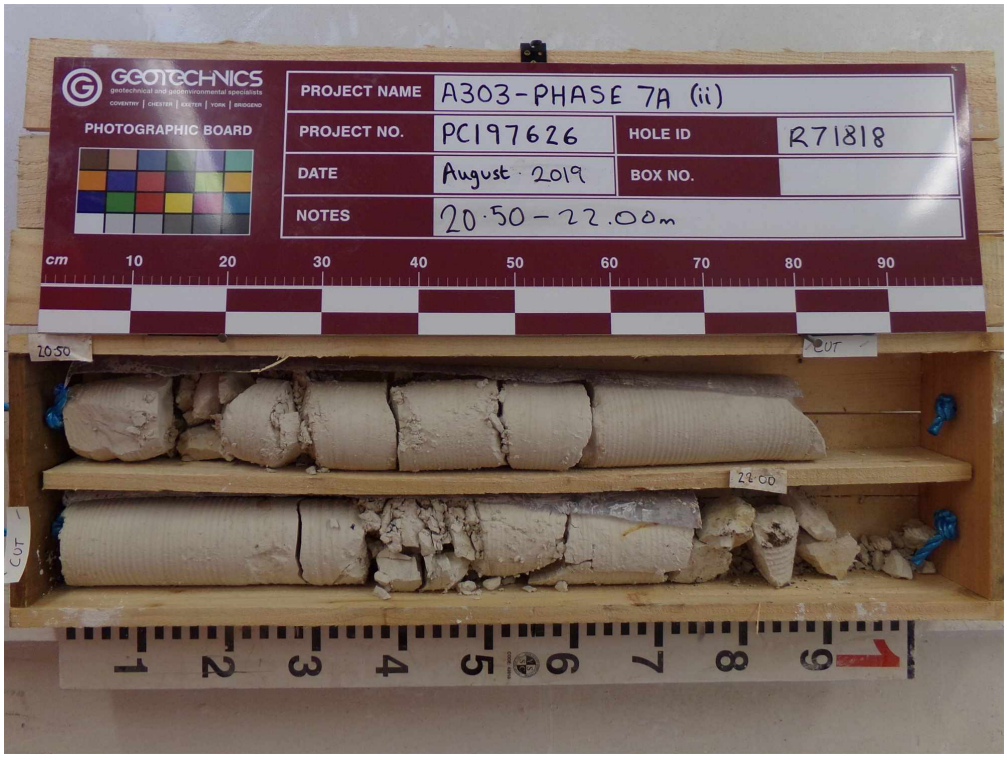

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Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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R71818 23.50-25.00m

Project Number : PC197626

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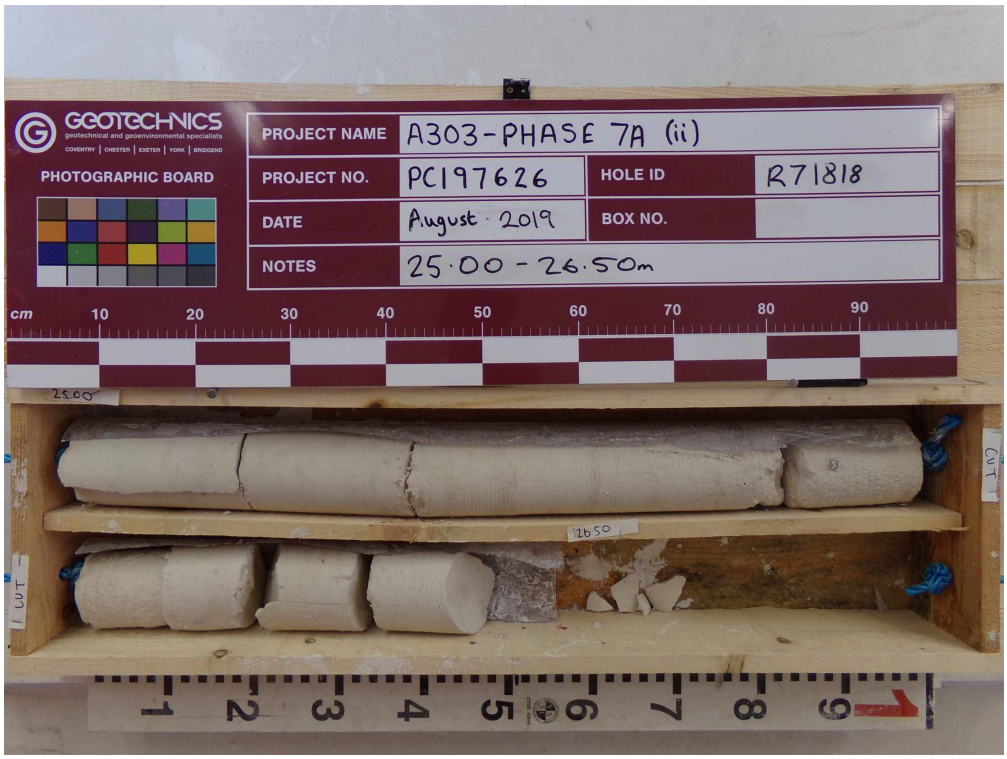

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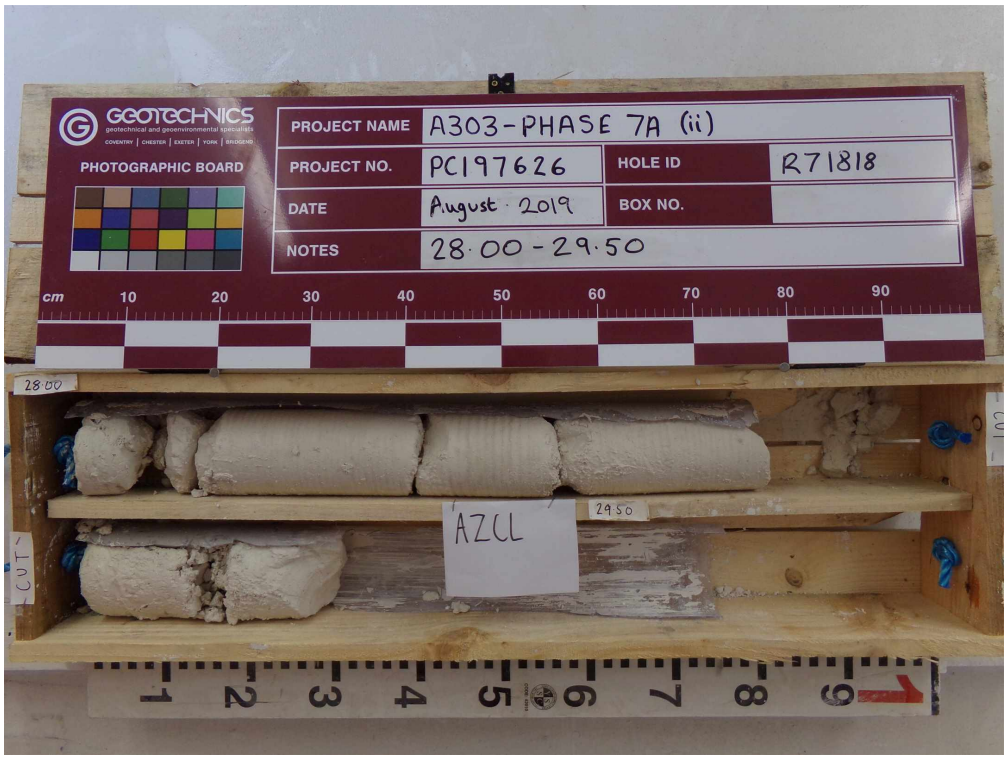

R71818 28.00-29.50m

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Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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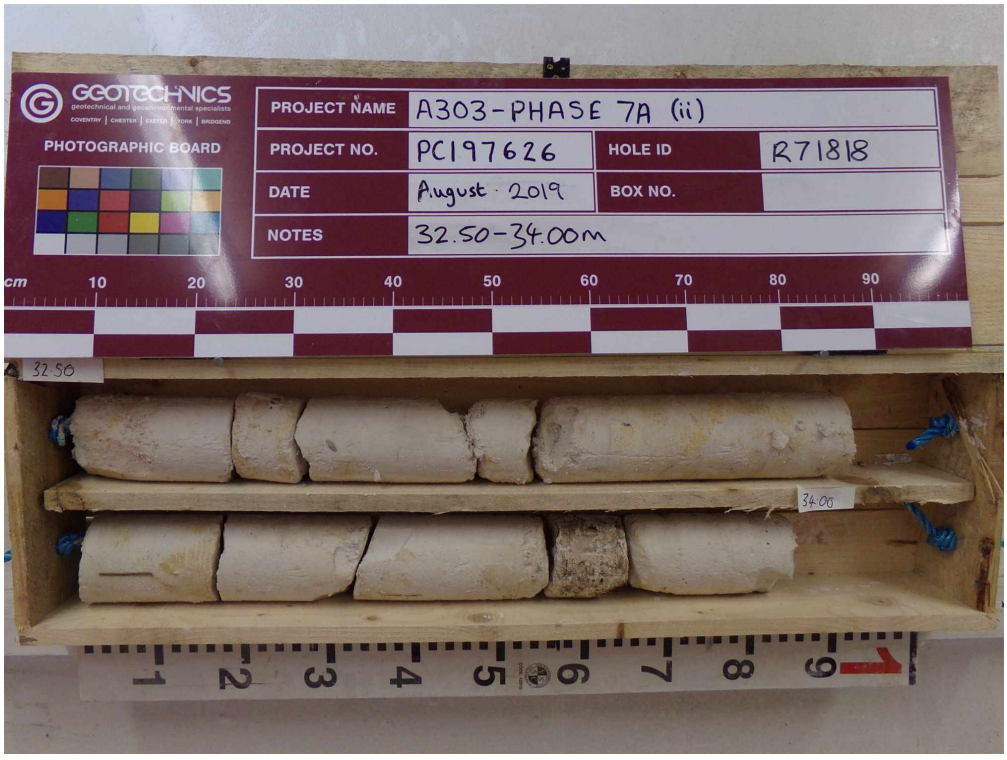

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Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

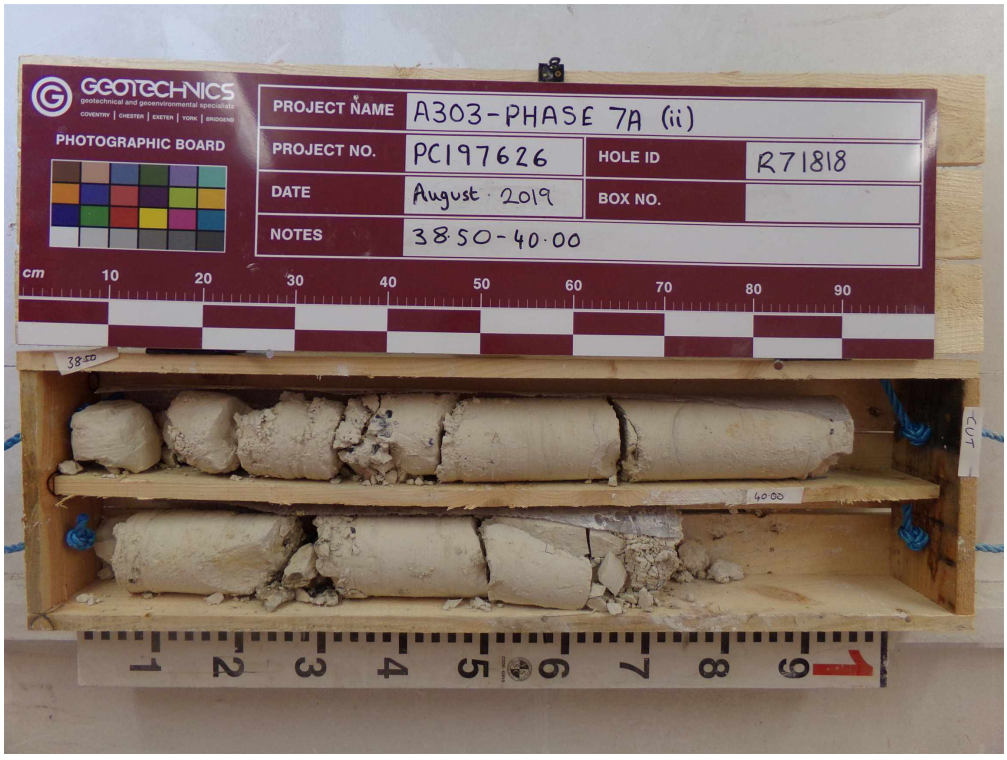
R71818 34.00-35.50m

R71818 35.50-37.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71818 37.00-38.50m



R71818 38.50-40.00m

PHOTOGRAPHS

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71818 40.00-41.50m

R71818 41.50-43.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71818 43.00-44.50m

R71818 44.50-46.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

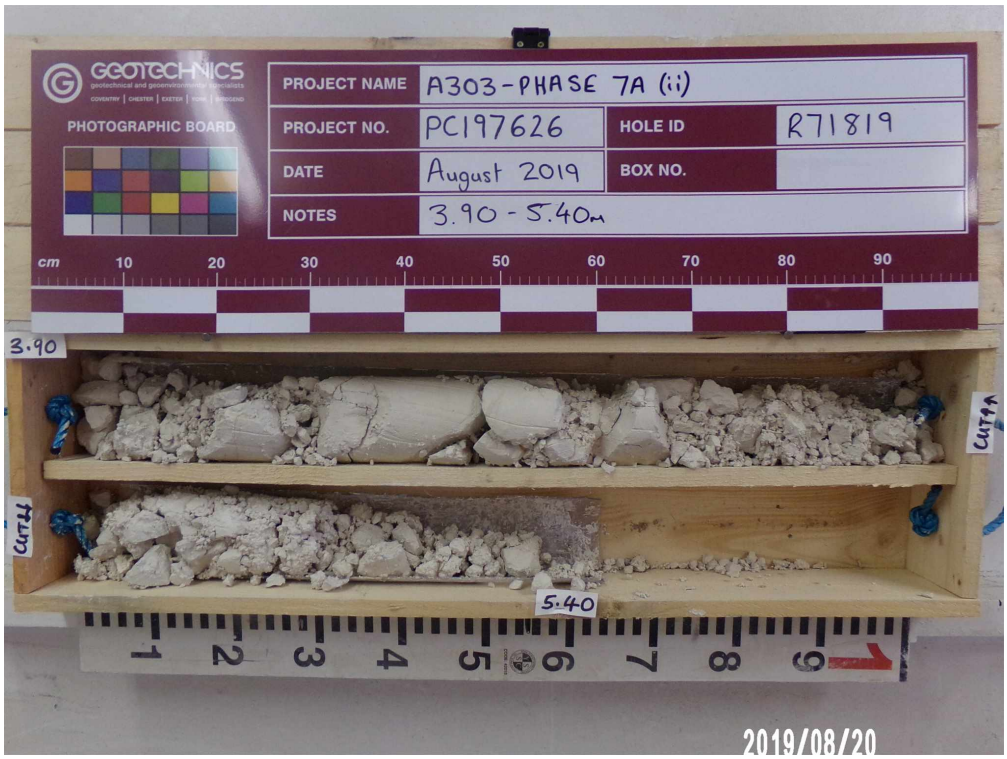
no photograph as no core recovery

R71819 1.70-2.40m

R71819 2.40-3.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71819 3.90-5.40m

R71819 5.40-6.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71819 6.90-8.40m

R71819 8.40-9.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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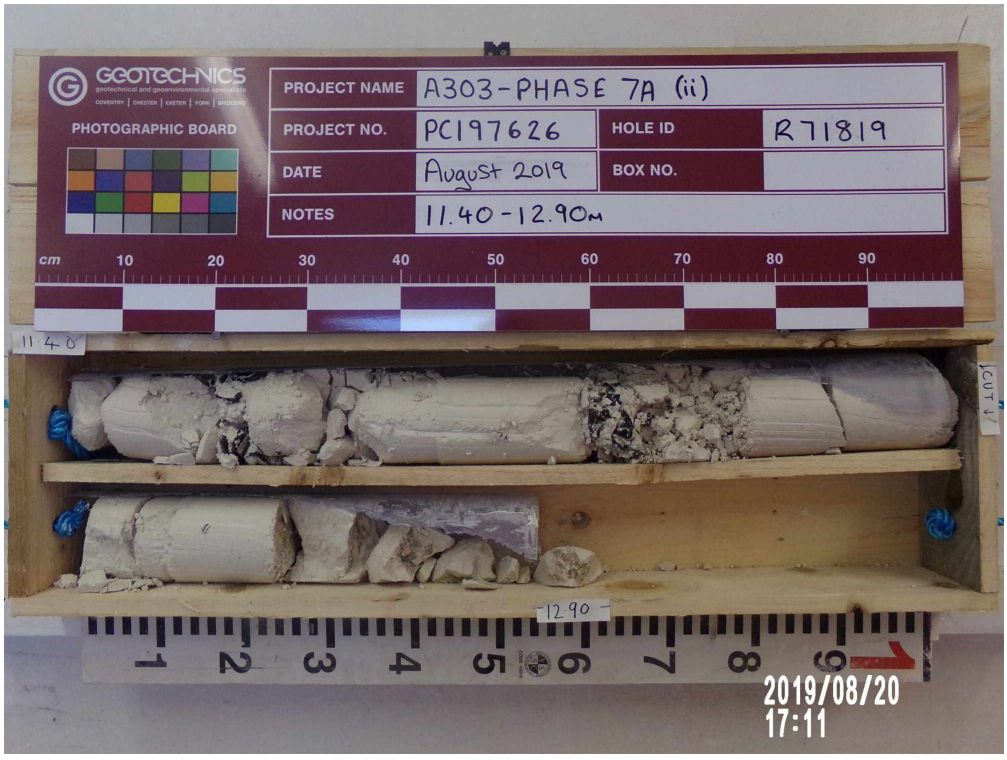

R71819 11.40-12.90

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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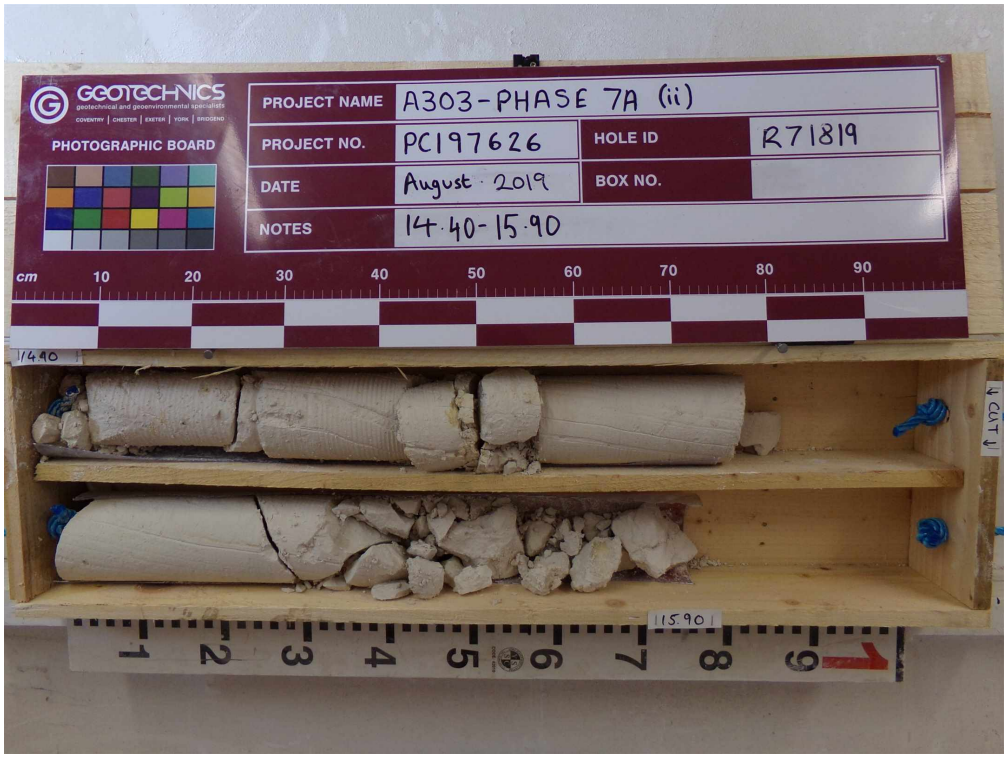

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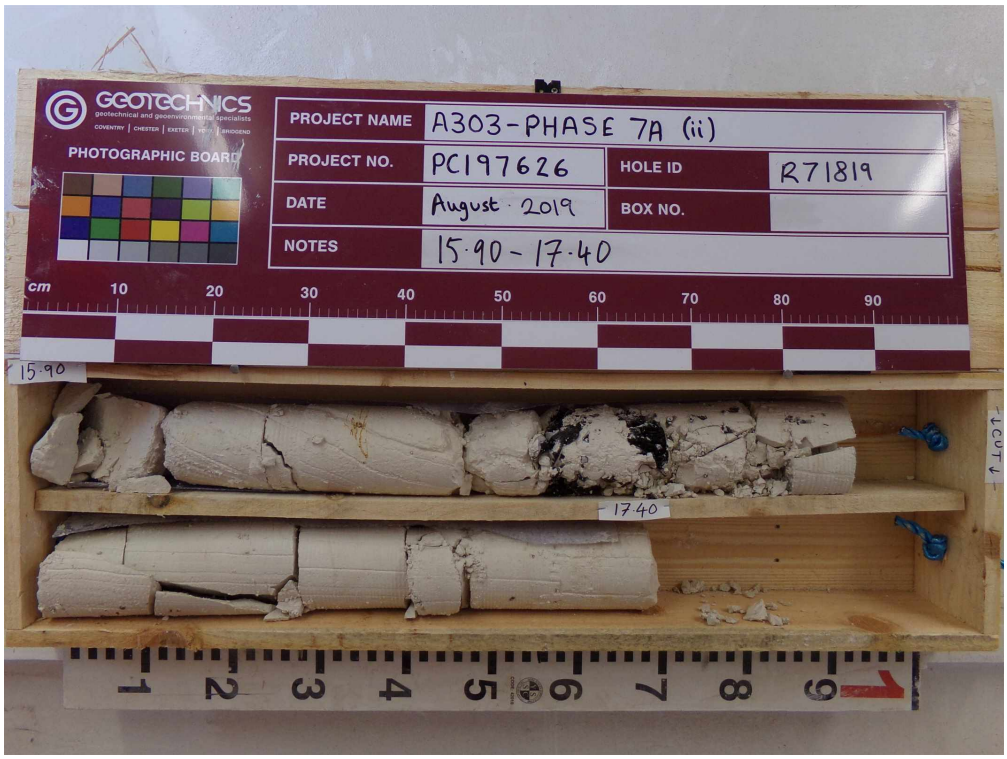

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R71819 17.40-18.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71819 18.90-20.40m

R71819 20.40-21.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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R71819 23.40-24.90m

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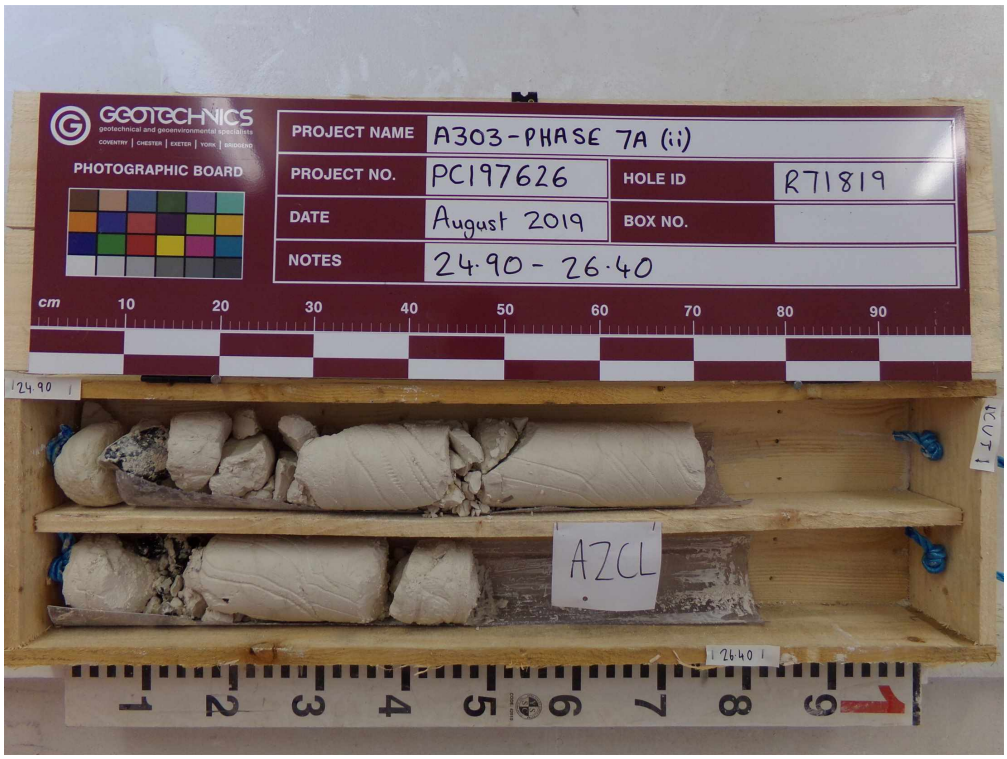

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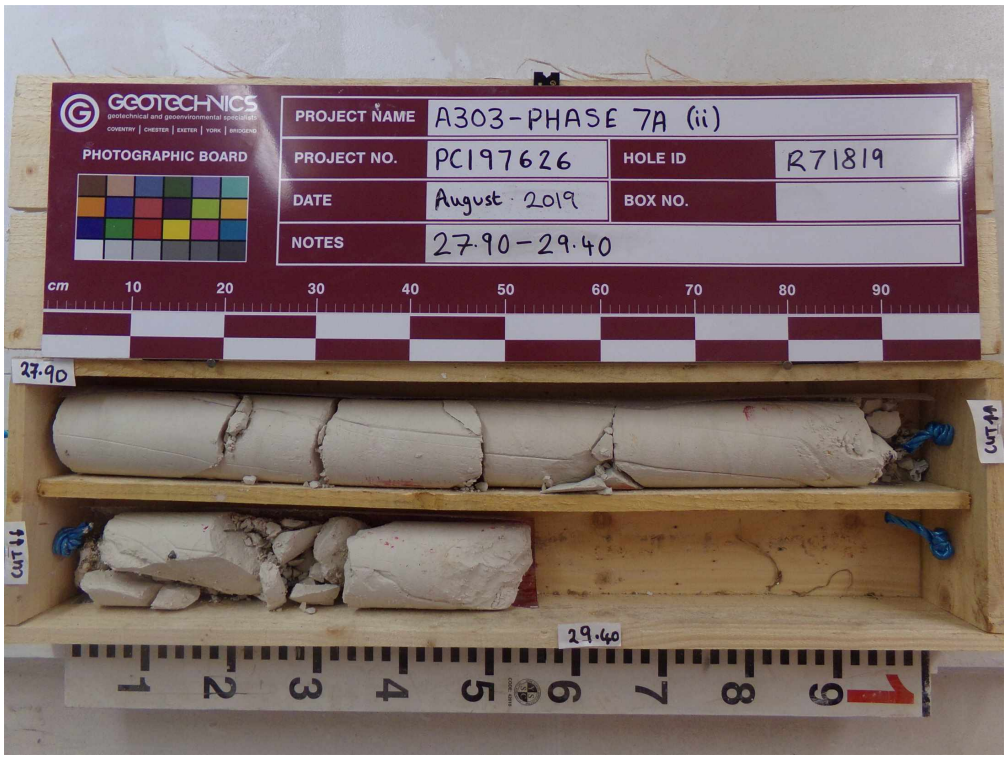

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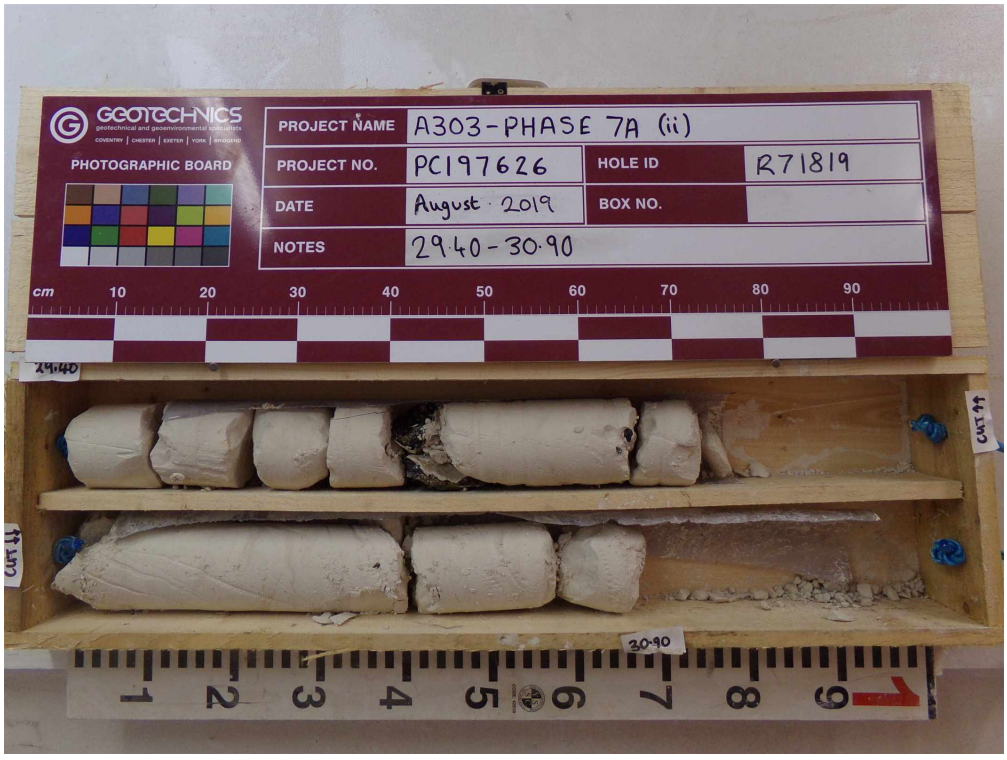

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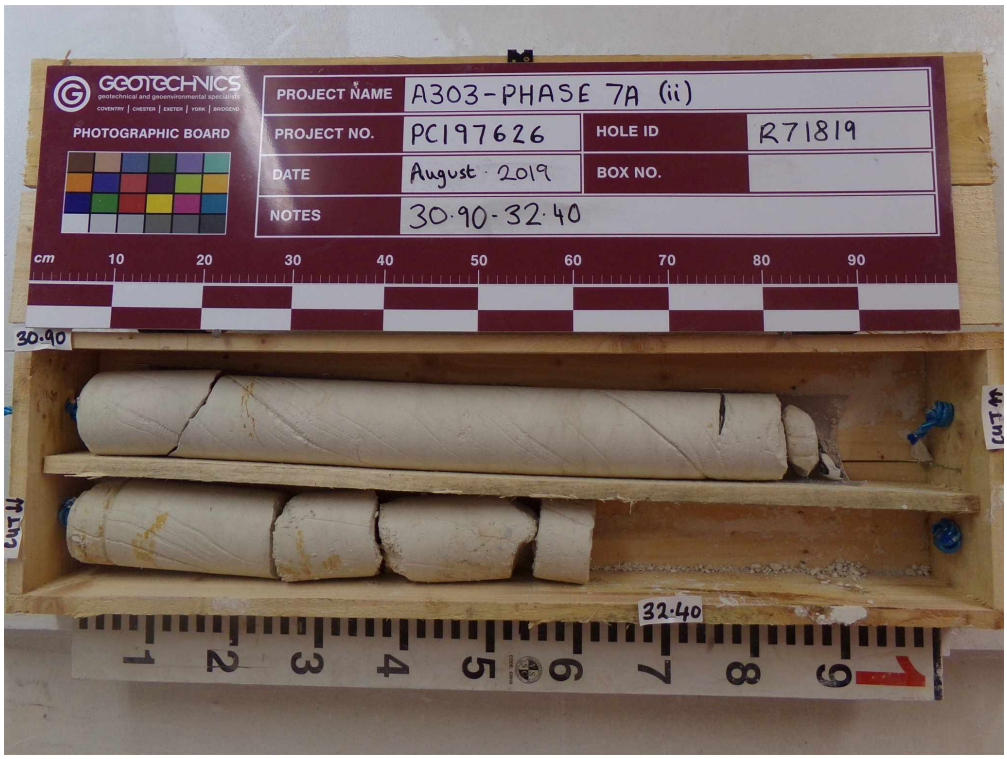

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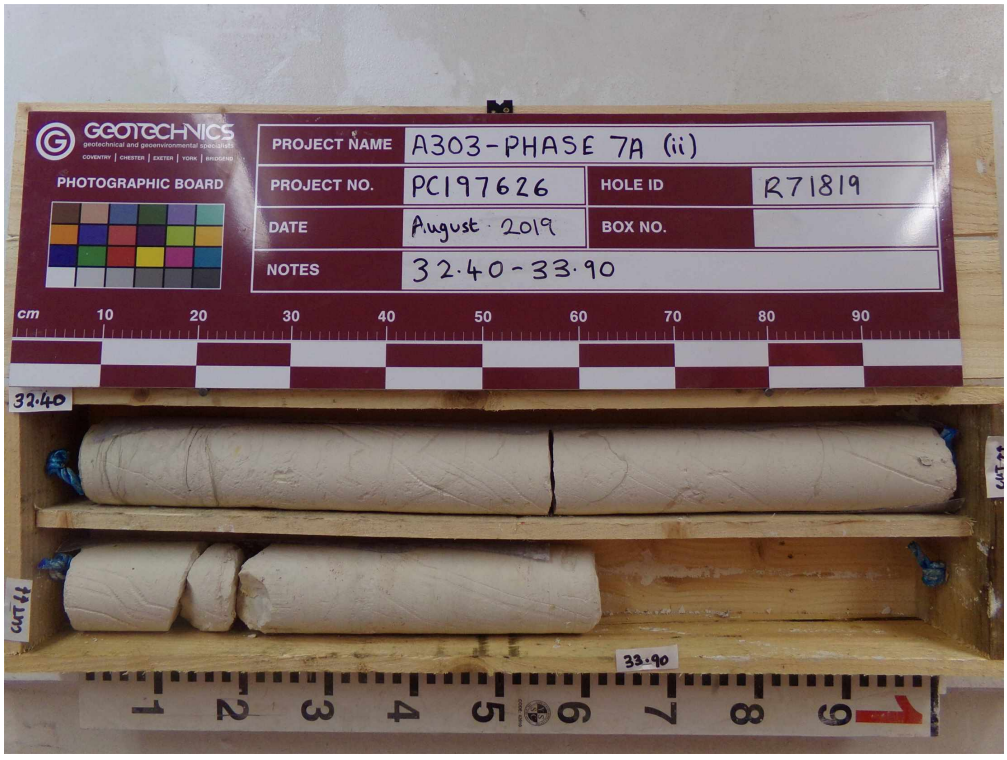


R71819 32.40-33.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71819 33.90-35.40m

R71819 35.40-36.90m

Project Number : PC197626

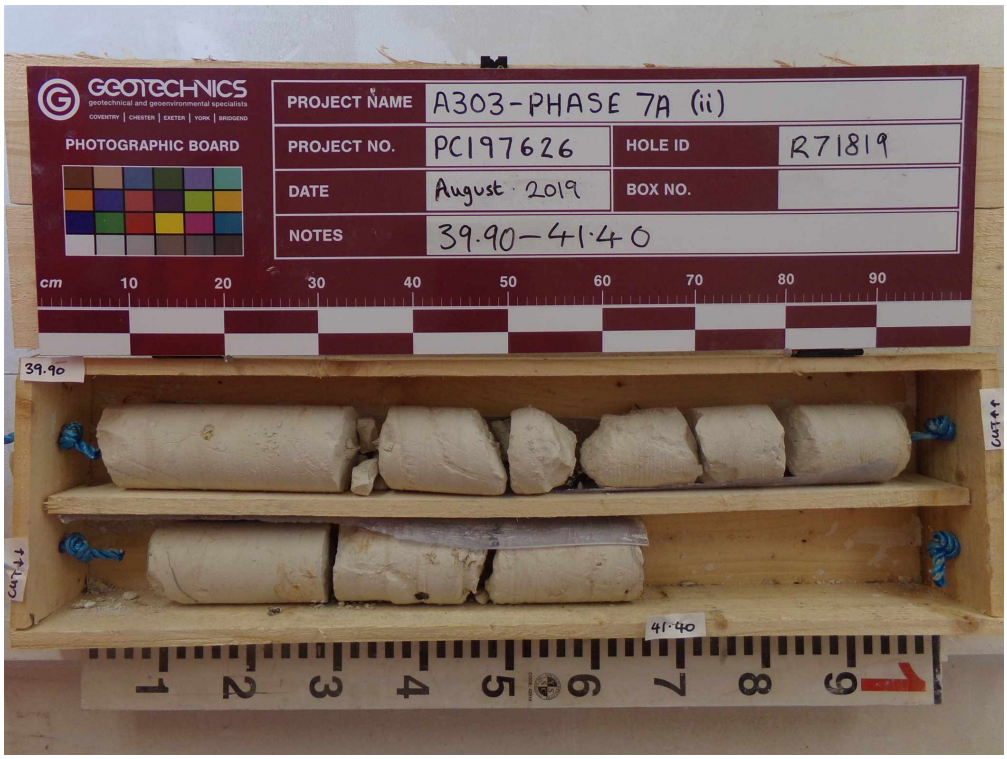
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71819 36.90-38.40m

R71819 38.40-39.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



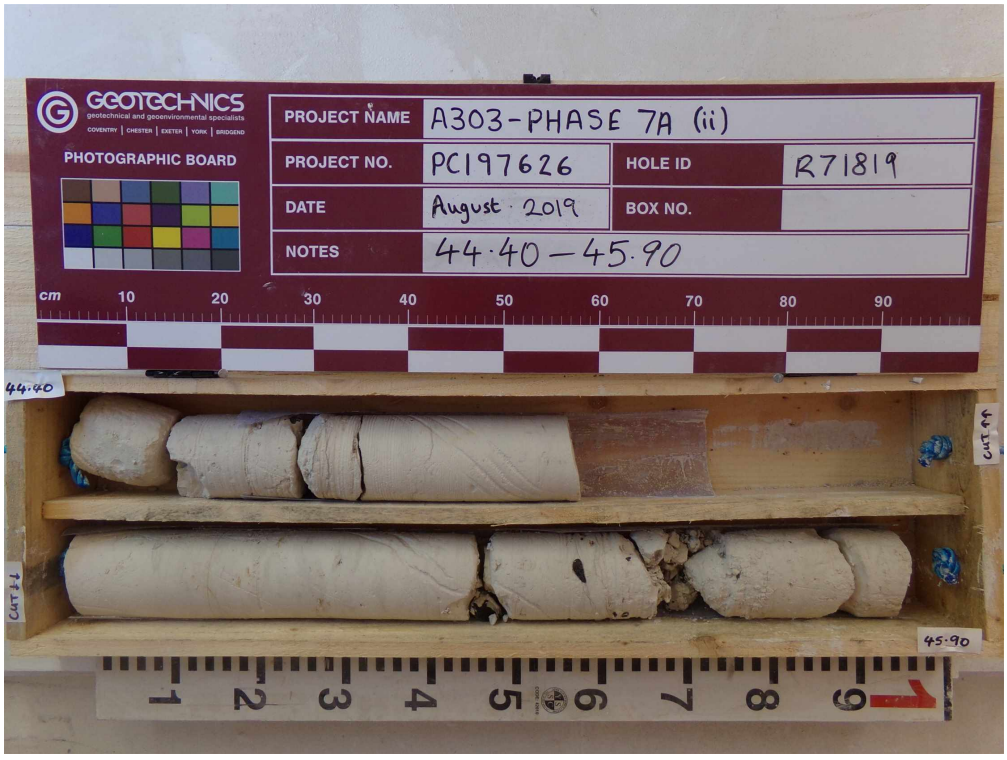
R71819 39.90-41.40m

R71819 41.40-42.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71819 42.90-44.40m



R71819 44.40-45.90m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 1.20-2.65m

R71820 2.65-4.15m

Project Number : PC197626

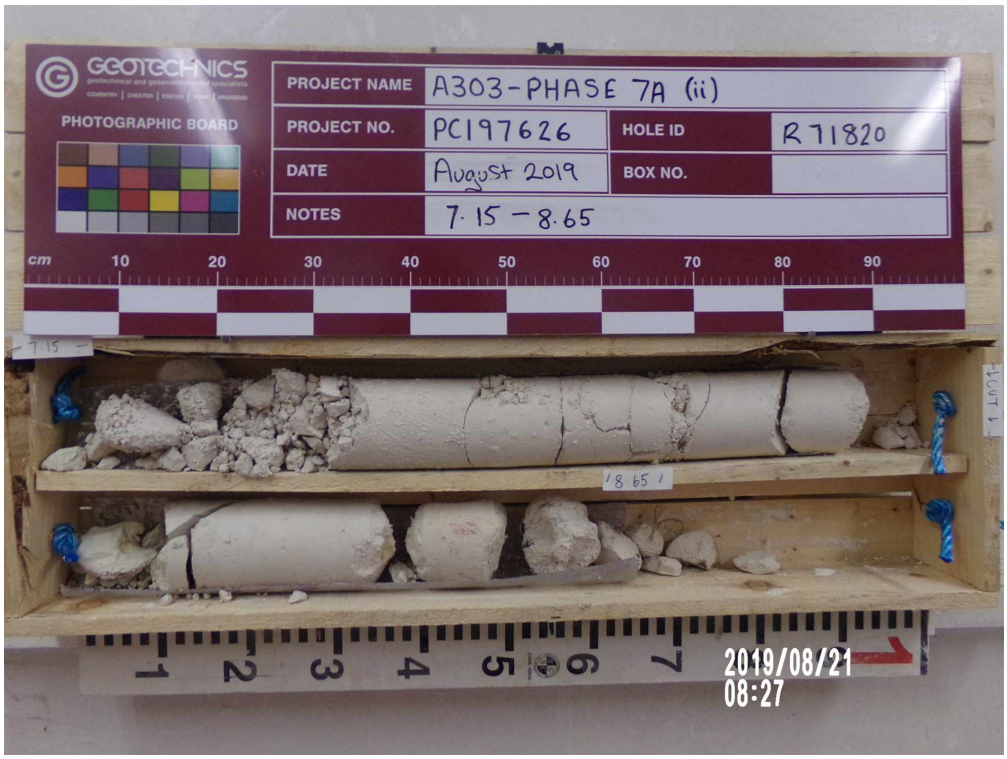
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 4.15-5.65m

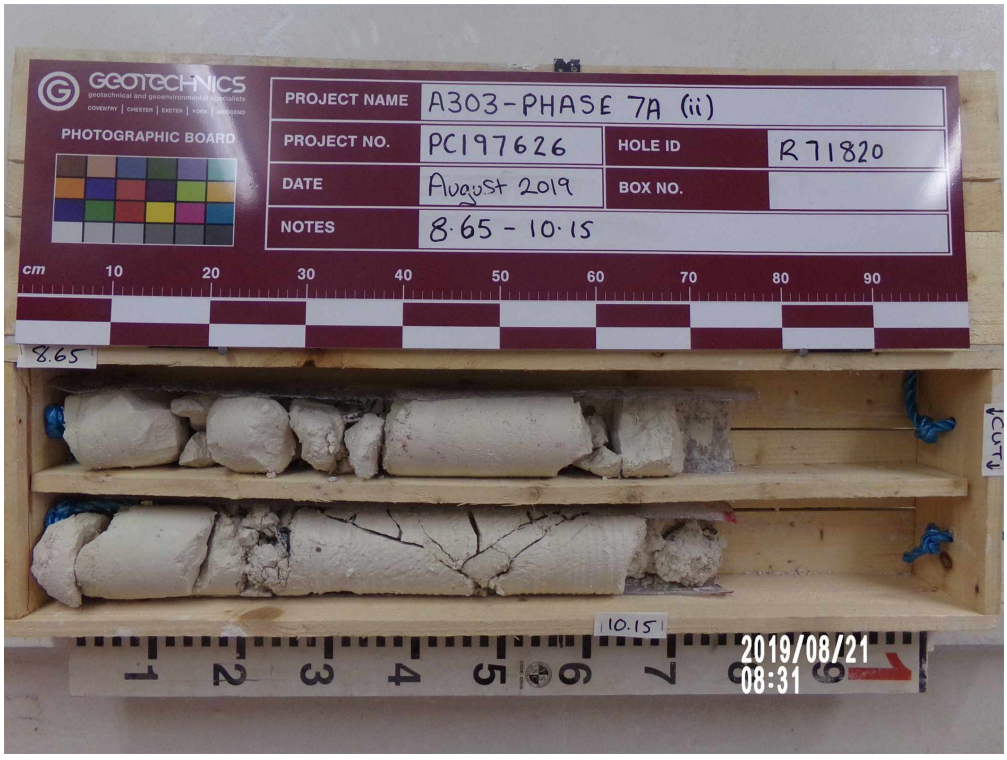
R71820 5.65-7.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71820 7.15-8.65m



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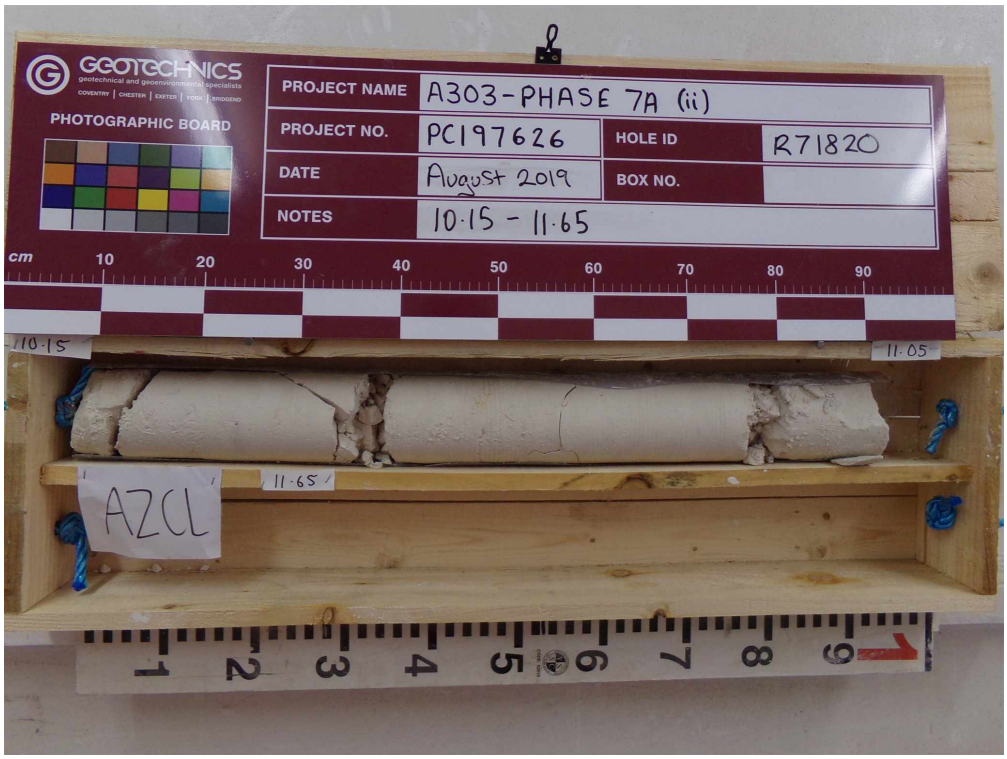

R71820 10.15-11.65m

R71820 11.65-13.15m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 13.15-14.65m

R71820 14.65-16.15m

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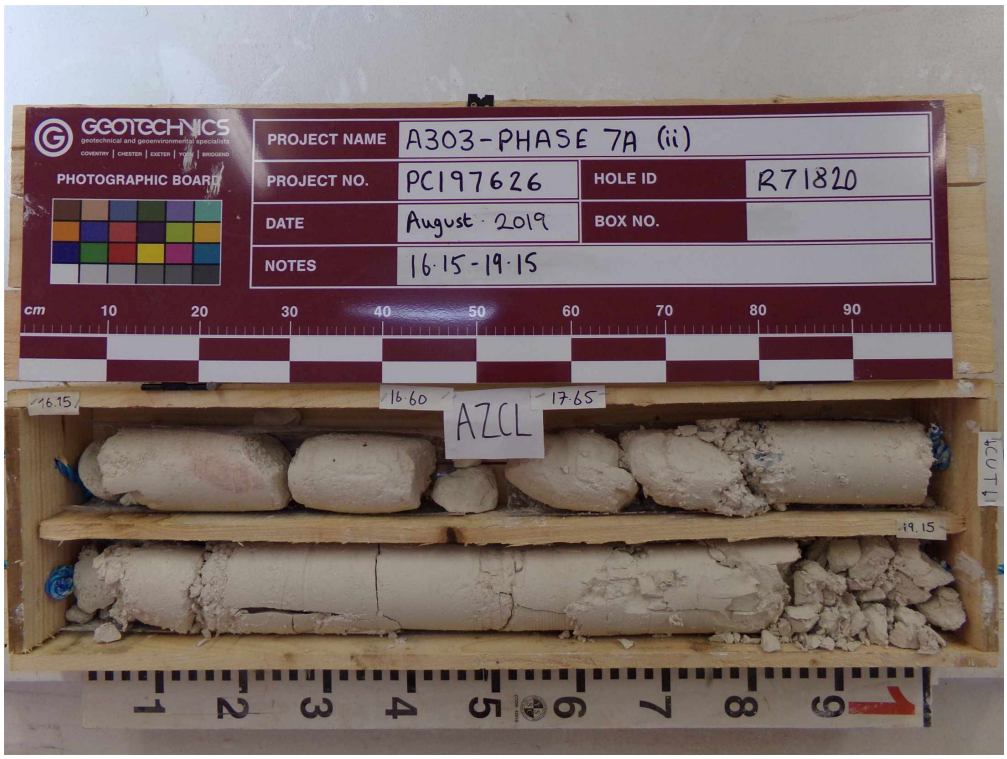
Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



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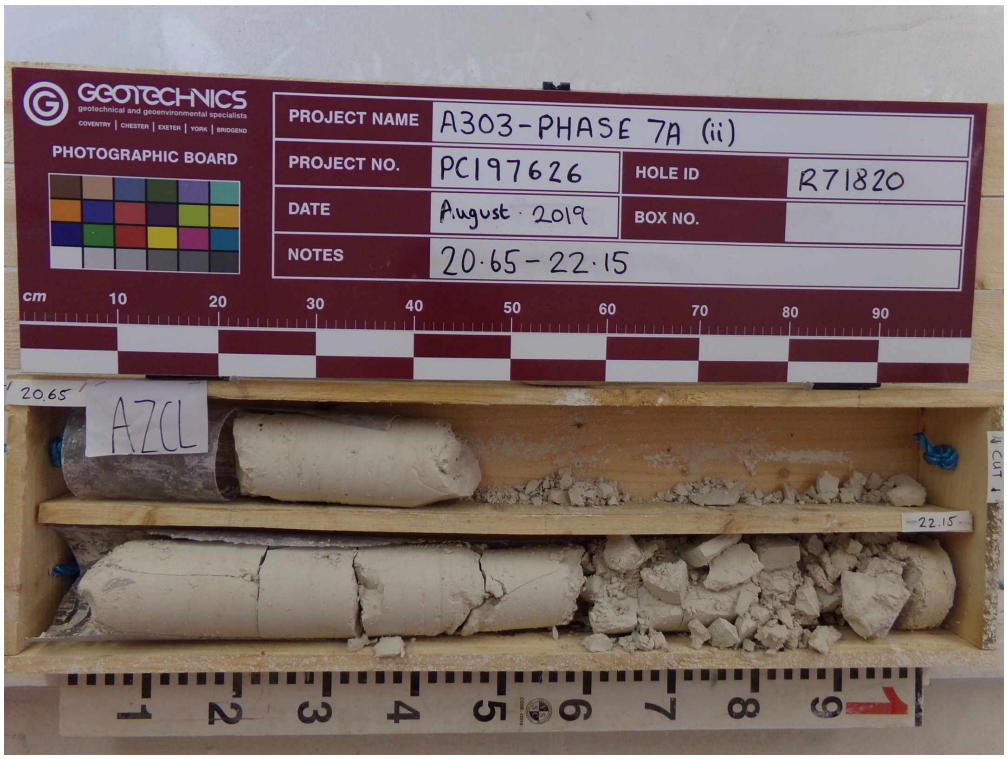
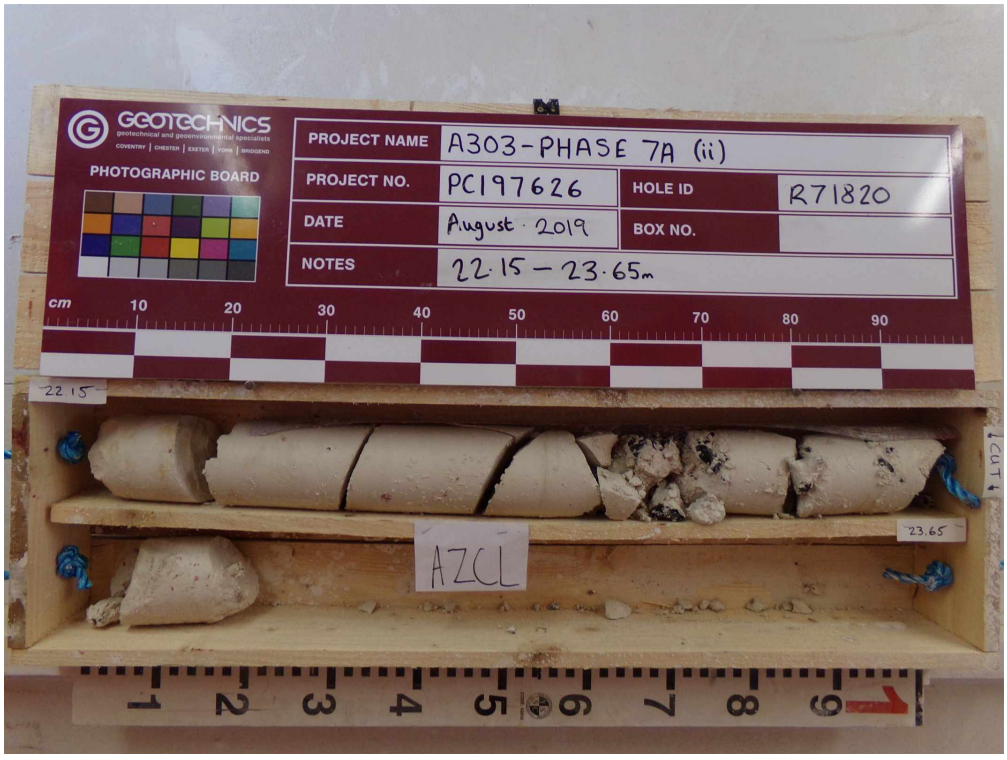
R71820 19.15-20.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



R71820 20.65-22.15m



R71820 22.15-23.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 23.65-25.15m

R71820 25.15-26.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 26.65-28.15m

R71820 28.15-29.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 29.65-31.15m

R71820 31.15-32.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

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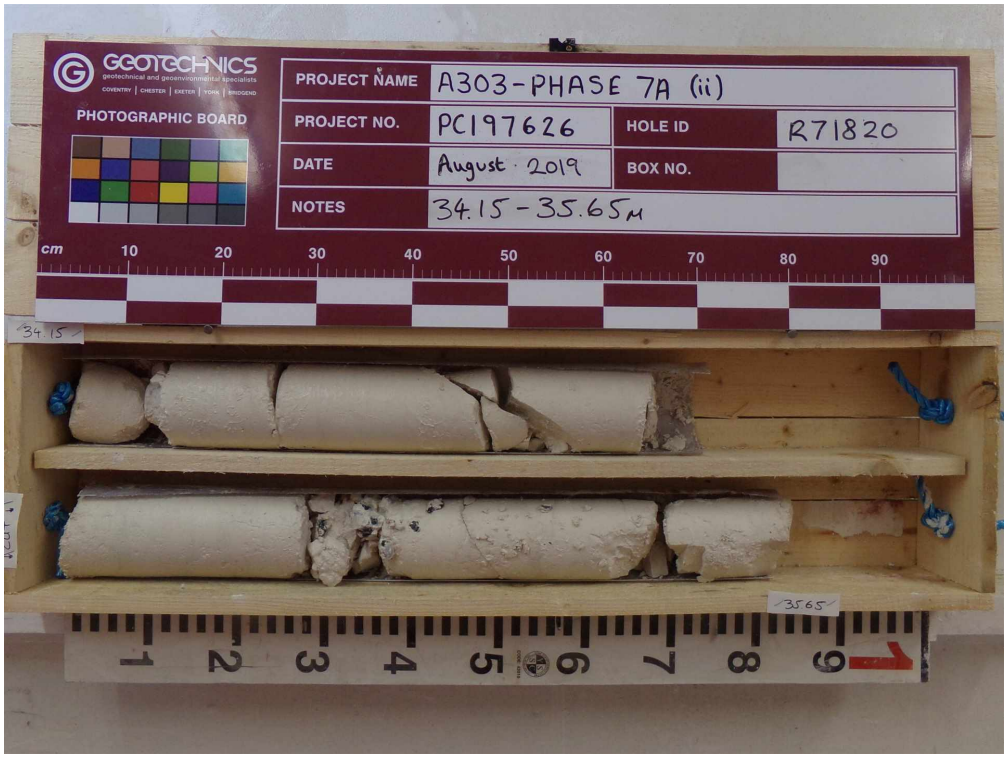


R71820 34.15-35.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 35.65-37.15m

R71820 37.15-38.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 38.65-40.15m

R71820 40.15-41.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 41.65-43.15m

R71820 43.15-44.65m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

R71820 44.65-45.35m

APPENDIX 4

Dynamic Sample Borehole Records

DATA SHEET - Symbols and Abbreviations used on Records

Sample Types

B	Bulk disturbed sample
BLK	Block sample
C	Core sample
D	Small disturbed sample (tub/jar)
E	Environmental test sample
ES	Environmental soil sample
EW	Environmental water sample
G	Gas sample
L	Liner sample
LB	Large bulk disturbed sample
P	Piston sample (PF - failed P sample)
TW	Thin walled push in sample
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U sample)
UT	Thin wall open drive tube sampler - 102mm diameter with blows to take sample. (UTF - failed UT sample)
V	Vial sample
W	Water sample
#	Sample Not Recovered

Insitu Testing / Properties

CBRP	CBR using TRL probe
CHP	Constant Head Permeability Test
COND	Electrical conductivity
TC	Thermal Conductivity
TR	Thermal Resistivity
HV	Strength from Hand Vane
ICBR	CBR Test
IDEN	Density Test
IRES	Resistivity Test
MEX	CBR using Mexecone Probe Test
PKR	Packer Permeability Test
PLT	Plate Load Test
PP	Strength from Pocket Penetrometer
Temp	Temperature
VHP	Variable Head Permeability Test
VN	Strength from Insitu Vane
w%	Water content

(All other strengths from undrained triaxial testing)

S	Standard Penetration Test (SPT)
C	SPT with cone
N	SPT Result
-/-	Blows/penetration (mm) after seating drive
-*/- (mm)	Total blows/penetration
( )	Extrapolated value

Groundwater

Water Strike

Depth Water Rose To

Instrumentation

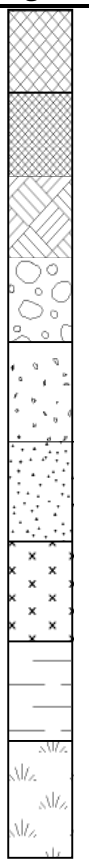
Seal

Filter

Seal

Strata

Legend



Made Ground Granular

Made Ground Cohesive

Topsoil

Cobbles and Boulders

Gravel

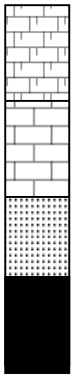
Sand

Silt

Clay

Peat

Note: Composite soil types shown by combined symbols



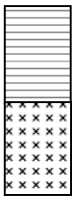
Chalk

Limestone

Sandstone

Coal

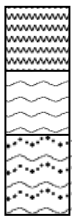
Strata, Continued



Mudstone

Siltstone

Metamorphic Rock

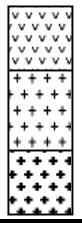


Fine Grained

Medium Grained

Coarse Grained

Igneous Rock



Fine Grained

Medium Grained

Coarse Grained

Backfill Materials

Arisings

Bentonite Seal

Concrete

Fine Gravel Filter

General Fill

Gravel Filter

Grout

Sand Filter

Tarmacadam

Rotary Core

RQD	Rock Quality Designation (% of intact core >100mm)
FRACTURE INDEX	Fractures/metre
FRACTURE SPACING (m)	Maximum Minimum
NI	Non-intact core
NR	No core recovery
AZCL	Assumed zone of core loss

(where core recovery is unknown it is assumed to be at the base of the run)

BOREHOLE RECORD – Dynamic Sampler

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	WS71501
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409446.2 E 141098.9 N	Ground Level	114.99 m OD

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD
						G.L.		114.99
					TOPSOIL: Stiff brown slightly sandy gravelly silt. Gravel is subangular to subrounded fine to coarse chalk with rare flints.	0.30		114.69
0.30- 1.00	B							
0.30	ES							
0.30			PID=<0.1		CHALK, recovered as slightly sandy silty subangular to rounded fine to coarse GRAVEL. Clasts are very weak, low to medium density, white with rare yellowish brown surface staining (up to 5mm in size). Matrix is white and brown.			
0.50	ES							
0.50			PID=<0.1					
1.00- 1.20	B							
1.00	ES							
1.00			PID=<0.1		Below 0.90m, matrix becomes white.			
1.20- 1.90	B				Between 1.65-1.70m, with many subangular small flints (up to 30mm in size).			
1.90- 2.00	D			23				
2.00- 2.90	B							
2.90- 3.00	D					3.00		111.99
3.00- 3.60	B				CHALK, recovered as white slightly gravelly SILT. Clasts are extremely weak, low density, white, subangular to rounded and fine to coarse.			
3.60- 3.70	D				Between 3.70-3.75m, with many subangular small flints (up to 20mm in size).			
3.70- 4.60	B							
4.60- 4.70	D							
4.70- 5.20	B							
					End of Borehole	5.20		109.79

Boring / Progress

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.30	0.50	Inspection Pit	Arch	G.L.			12/09/19	08:00
1.20	0.50	Inspection Pit	DR/MM	0.30	NIL	DRY	12/09/19	18:00
2.00	0.10	Dynamic Sampler	DR/MM	0.30	NIL	DRY	17/09/19	08:00
3.00	0.09	Dynamic Sampler	DR/MM	5.20	NIL	DRY	17/09/19	18:00
3.70	0.08	Dynamic Sampler	DR/MM					
4.70	0.07	Dynamic Sampler	DR/MM					

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
Figure 1 of 2
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BOREHOLE RECORD – Dynamic Sampler

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	WS71501
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409446.2 E 141098.9 N	Ground Level	114.99 m OD

Scale 1:50

Sampling			Properties		Strata			
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD

Boring

Depth	Hole Dia	Technique	Crew
5.20	0.06	Dynamic Sampler	DR/MM

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks AGS Backfill details from base of hole: bentonite grout up to 1.00m, arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
Figure 2 of 2
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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	WS71502
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409581.9 E, 141052.5 N	Ground Level	118.94 m OD

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD
						G.L.		118.94
					TOPSOIL: Stiff brown slightly sandy gravelly silt. Gravel is subangular to subrounded fine to coarse chalk with rare flints.	0.30		118.64
0.30- 0.80	B							
0.30	ES							
0.30			PID=<0.1		CHALK, recovered as slightly sandy silty subangular to rounded fine to coarse GRAVEL. Clasts are very weak, medium density and white. Matrix is white and brown. With rare subangular small flints (up to 30mm in size).			
0.50	D							
0.50	ES							
0.50			PID=<0.1					
0.80- 1.20	B							
0.90	D				Below 0.80m, matrix becomes white.			
1.00			PID=<0.1					
1.20- 1.90	B							
					Between 1.90-2.00m, with occasional pockets (up to 5mm in size) of grey marl.			
1.90- 2.00	D			22				
2.00- 2.90	B				Between 2.36-2.44m, with a possible sheet flint, recovered as subangular small flint fragments (up to 45mm in size).			
					Between 2.85-2.90m, with a pocket (45mm in size) of yellow penetrative staining (6mm depth). (Possible sponge trace)			
2.90- 3.00	D							
3.00- 3.90	B							
3.90- 4.00	D							
4.00- 4.90	B							
					At 4.90m, with a subangular small nodular flint (30mm in size).			
4.90- 5.00	B							
4.90- 5.00	D							
5.00- 6.00	B							
					End of Borehole	6.00		112.94

Boring

Depth	Hole Dia	Technique	Crew
0.30	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	DR/MM
2.00	0.10	Dynamic Sampler	DR/MM
3.00	0.09	Dynamic Sampler	DR/MM
4.00	0.08	Dynamic Sampler	DR/MM
5.00	0.07	Dynamic Sampler	DR/MM

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			12/09/19	08:00
0.30	NIL	DRY	12/09/19	18:00
0.30	NIL	DRY	16/09/19	08:00
6.00	NIL	DRY	16/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
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geotechnics

BOREHOLE RECORD – Dynamic Sampler

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	WS71502
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409581.9 E 141052.5 N	Ground Level	118.94 m OD

Scale 1:50

Sampling			Properties		Strata			
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD

Boring

Depth	Hole Dia	Technique	Crew
6.00	0.06	Dynamic Sampler	DR/MM

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks AGS Backfill details from base of hole: bentonite grout up to 1.00m, arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
Figure 2 of 2
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geotechnics

BOREHOLE RECORD – Dynamic Sampler

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: WS71503
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409728.1 E, 141016.0 N
Ground Level: 117.56 m OD
Scale: 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD
						G.L.		117.56
					TOPSOIL: Stiff brown slightly sandy gravelly silt. Gravel is subangular to subrounded fine to coarse chalk with rare flint.	0.30		117.26
0.30- 0.70	B							
0.30	ES							
0.30			PID=<0.1		CHALK, recovered as slightly sandy silty subangular to subrounded fine to coarse GRAVEL. Clasts are very weak, low to medium density, white with rare yellowish brown surface staining (up to 5mm in size). Matrix is white and brown. Below 0.70m, matrix is white.			
0.50	D							
0.50	ES							
0.50			PID=<0.1					
0.70- 1.00	B							
1.00- 1.20	B							
1.00	D							
1.00	ES							
1.00			PID=<0.1					
1.20- 1.95	B							
1.95- 2.00	D							
2.00- 2.95	B				At 2.45m, with occasional extremely closely spaced brown veins (2mm in thickness). With occasional angular to subrounded small flint fragments (up to 50mm in size).			
2.95- 3.00	D							
3.00- 3.95	B							
3.95- 4.00	D					4.00		113.56
4.00- 4.25	D			23	CHALK, recovered as white slightly gravelly SILT. Clasts are extremely weak, low density, white, subangular to subrounded and fine to coarse. Between 4.07-4.12m, with occasional subangular small flint fragments (up to 35mm in size). Between 4.25-4.30m, with many pockets (up to 10mm in size) of green crystals (up to 3mm in size). (Possible glauconite).			
4.25- 4.30	D							
4.30- 5.00	B							
5.00- 5.50	D							
					End of Borehole	5.50		112.06

Boring

Depth	Hole Dia	Technique	Crew
0.30	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	DR/MM
2.00	0.09	Dynamic Sampler	DR/MM
3.00	0.08	Dynamic Sampler	DR/MM
4.00	0.07	Dynamic Sampler	DR/MM
5.50	0.06	Dynamic Sampler	DR/MM

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			12/09/19	08:00
0.30	NIL	DRY	12/09/19	18:00
0.30	NIl	DRY	17/09/19	08:00
5.50	2.00	DRY	17/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
A Falling Head Permeability test was carried out during boring at a depth of 3.00m with casing at 2.00m.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
Figure 1 of 2
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geotechnics

BOREHOLE RECORD – Dynamic Sampler

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)**
Engineer **AECOM**
Borehole **WS71503**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**
National Grid Coordinates **409728.1** E **141016.0** N
Ground Level **117.56** m OD

Sampling | Properties | Strata — Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD

Boring | Progress | Groundwater

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: bentonite grout up to 1.00m, arisings up to ground level.

Logged by **JL**
Checked by **CPL**
Figure **2 of 2**
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

geotechnics

BOREHOLE RECORD – Dynamic Sampler

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: WS71504
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409850.3 E, 140932.4 N
Ground Level: 113.49 m OD
Scale: 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD
						G.L.		113.49
					TOPSOIL: Stiff brown slightly sandy gravelly silt. Gravel is subangular to subrounded fine to coarse chalk with rare flint.	0.30		113.19
0.30- 0.70	B							
0.30	ES							
0.30			PID=<0.1		CHALK, recovered as slightly sandy silty subangular to rounded fine to coarse GRAVEL. Clasts are very weak, low to medium density and white with rare yellowish brown surface staining (up to 6mm in size). Matrix is white and brown. Below 0.70m, matrix is white.			
0.50	D							
0.50	ES							
0.50			PID=<0.1					
0.70- 1.20	B							
1.00	D							
1.00	ES							
1.20- 1.90	B							
1.20			PID=<0.1					
1.90- 2.00	D			22	At 1.90m, with rare subangular small flints (up to 30mm in size).			
1.95- 2.00	D				Between 2.10-2.65m, with much yellowish brown relic sponge traces (up to 15mm in size).			
2.00- 2.90	B							
2.90- 3.00	D					3.00		110.49
2.95- 3.00	D				CHALK, recovered as white slightly gravelly SILT. Clasts are very weak, medium and high density, white, subangular to rounded and fine to coarse. Between 3.45-3.55m, with extremely closely spaced lenses (up to 2mm thick) of brown clay.			
3.00- 3.80	B							
3.80- 3.90	D							
3.90- 4.60	B							
4.60- 4.70	D							
4.70- 5.30	B				At 4.83m and 4.85m, with a grey marl seam (3mm thick). At 5.00m, with a subangular small flint (15mm in size).			
					End of Borehole	5.30		108.19

Boring

Depth	Hole Dia	Technique	Crew
0.30	0.50	Inspection Pit	Arch
1.20	0.50	Inspection Pit	DR/MM
2.00	0.10	Dynamic Sampler	DR/MM
3.00	0.09	Dynamic Sampler	DR/MM
4.00	0.08	Dynamic Sampler	DR/MM
5.00	0.07	Dynamic Sampler	DR/MM

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			12/09/19	08:00
0.30	NIL	DRY	12/09/19	18:00
0.30	NIL	DRY	16/09/19	08:00
5.30	NIL	DRY	16/09/19	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.
All dimensions are in metres.
Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
Figure 1 of 2
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geotechnics

BOREHOLE RECORD – Dynamic Sampler

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	WS71504
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409850.3 E 140932.4 N	Ground Level	113.49 m OD

Scale 1:50

Sampling			Properties		Strata			
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
5.30	0.06	Dynamic Sampler	DR/MM											

Remarks AGS Backfill details from base of hole: bentonite grout up to 1.00m, arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
Figure 2 of 2
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geotechnics

BOREHOLE RECORD – Dynamic Sampler

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)
Engineer: AECOM
Borehole: WS71505
Project No: PC197626
Client: HIGHWAYS ENGLAND
National Grid Coordinates: 409929.1 E, 140805.0 N
Ground Level: 108.20 m OD
Scale: 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD
						G.L.		108.20
					TOPSOIL: Stiff brown slightly sandy gravelly silt. Gravel is subangular to subrounded fine to coarse chalk with rare flints.	0.30		107.90
0.30- 0.90	B							
0.30	ES							
0.30			PID=<0.1		CHALK, recovered as slightly sandy silty subangular to rounded fine to coarse GRAVEL. Clasts are very weak, low to medium density and white. Matrix is white and brown. With rare subangular small flints (up to 40mm in size).			
0.50- 0.70	D							
0.50	ES							
0.50			PID=<0.1					
0.90- 1.20	B							
1.00- 1.10	D				Below 0.90m, matrix is white.			
1.00	ES				Between 1.45-1.50m, with occasional subangular small flints (up to 40mm in size).			
1.00			PID=<0.1					
1.20- 1.85	B							
1.85- 2.00	D							
2.00- 2.85	B							
2.10- 2.20	D							
2.85- 3.00	D				Between 2.84-2.94m, with many subangular small flints (up to 30mm in size).			
3.00- 3.40	B					3.00		105.20
3.10- 3.20	D				CHALK recovered as white, slightly gravelly SILT. Clasts are extremely weak, low and medium density, white, subangular to rounded and fine to coarse. Between 3.10-3.15m, with rare subangular small flint fragments (up to 20mm in size). Between 3.40-3.80m, no recovery.			
3.80- 4.00	D			23				
4.00- 4.80	B							
4.15- 4.20	D							
4.80- 5.00	D							
5.00- 5.80	B							
5.80- 6.00	D				Between 5.55-5.63m, with rare subangular small flint fragments (up to 20mm in size).			
					End of Borehole	6.00		102.20

Boring Progress

Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.30	0.50	Inspection Pit	Arch	G.L.			13/09/19	08:00
1.20	0.50	Inspection Pit	DR/MM	1.20	NIL	DRY	13/09/19	18:00
1.20	0.10	Dynamic Sampler	DR/MM	1.20	NIL	DRY	16/09/19	08:00
2.50	0.09	Dynamic Sampler	DR/MM	6.00	NIL	DRY	16/09/19	18:00
4.00	0.08	Dynamic Sampler	DR/MM					
5.00	0.07	Dynamic Sampler	DR/MM					

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

Inspection pit hand excavated to 0.30m by archeologist and extended to 1.20m depth by Geotechnics. No services were found.
ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.
All dimensions are in metres.
Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
Figure 1 of 2
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geotechnics

BOREHOLE RECORD – Dynamic Sampler

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Borehole	WS71505
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409929.1 E 140805.0 N	Ground Level	108.20 m OD

Scale 1:50

Sampling			Properties		Strata			
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD

Boring

Depth	Hole Dia	Technique	Crew
6.00	0.06	Dynamic Sampler	DR/MM

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks AGS Backfill details from base of hole: bentonite grout up to 1.00m, arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by JL
Checked by CPL
Figure 2 of 2
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geotechnics

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

WS71501 1.20-3.00m

WS71501 3.00-4.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

WS71501 4.70-5.20m

WS71502 1.20-3.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

WS71502 3.00-5.00m

WS71502 5.00-6.00m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

WS71503 1.20-3.00m

WS71503 3.00-5.50m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

WS71504 1.20-3.00m

WS71504 3.00-4.70m

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

WS71504 4.70-5.30m

WS71505 1.20-3.00m

PHOTOGRAPHS

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

WS71505 3.00-5.00m

WS71505 5.00-6.00m

APPENDIX 5

Trial Pit Records

DATA SHEET - Symbols and Abbreviations used on Records

Sample Types

B	Bulk disturbed sample
BLK	Block sample
C	Core sample
D	Small disturbed sample (tub/jar)
E	Environmental test sample
ES	Environmental soil sample
EW	Environmental water sample
G	Gas sample
L	Liner sample
LB	Large bulk disturbed sample
P	Piston sample (PF - failed P sample)
TW	Thin walled push in sample
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U sample)
UT	Thin wall open drive tube sampler - 102mm diameter with blows to take sample. (UTF - failed UT sample)
V	Vial sample
W	Water sample
#	Sample Not Recovered

Insitu Testing / Properties

CBRP	CBR using TRL probe
CHP	Constant Head Permeability Test
COND	Electrical conductivity
TC	Thermal Conductivity
TR	Thermal Resistivity
HV	Strength from Hand Vane
ICBR	CBR Test
IDEN	Density Test
IRES	Resistivity Test
MEX	CBR using Mexecone Probe Test
PKR	Packer Permeability Test
PLT	Plate Load Test
PP	Strength from Pocket Penetrometer
Temp	Temperature
VHP	Variable Head Permeability Test
VN	Strength from Insitu Vane
w%	Water content

(All other strengths from undrained triaxial testing)

S	Standard Penetration Test (SPT)
C	SPT with cone
N	SPT Result
-/-	Blows/penetration (mm) after seating drive
-*/- (mm)	Total blows/penetration
( )	Extrapolated value

Groundwater

Water Strike

Depth Water Rose To

Instrumentation

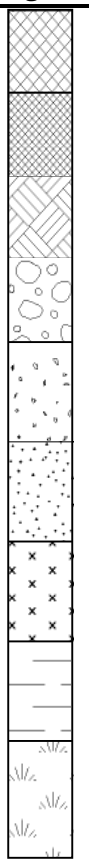
Seal

Filter

Seal

Strata

Legend



Made Ground Granular

Made Ground Cohesive

Topsoil

Cobbles and Boulders

Gravel

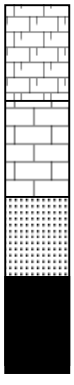
Sand

Silt

Clay

Peat

Note: Composite soil types shown by combined symbols



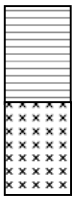
Chalk

Limestone

Sandstone

Coal

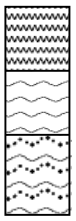
Strata, Continued



Mudstone

Siltstone

Metamorphic Rock

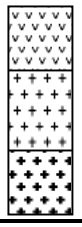


Fine Grained

Medium Grained

Coarse Grained

Igneous Rock



Fine Grained

Medium Grained

Coarse Grained

Backfill Materials

Arisings

Bentonite Seal

Concrete

Fine Gravel Filter

General Fill

Gravel Filter

Grout

Sand Filter

Tarmacadam

Rotary Core

RQD	Rock Quality Designation (% of intact core >100mm)
FRACTURE INDEX	Fractures/metre
FRACTURE SPACING (m)	Maximum Minimum
NI	Non-intact core
NR	No core recovery
AZCL	Assumed zone of core loss

(where core recovery is unknown it is assumed to be at the base of the run)

TRIAL PIT RECORD *Trial Pit*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP70101
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	405806.4 E, 140723.7 N	Ground Level	129.19 m OD

Samples and Tests

Depth	Type	Stratum No	Results
0.15	B		
0.15	D		
0.60	B		
0.60	D		mc=19%
1.00	B		
1.00	D		
2.00	B		
2.00	D		
3.00	B		
3.00	D		

Strata

Scale 1:50

Description	Depth	Legend	Level m OD
	G.L.		129.19
TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint and chalk.	0.25		128.94
Below 0.15m, gravelly.	0.50		128.69
Structureless CHALK, composed of sandy silty angular to subangular fine to coarse GRAVEL with occasional roots and rootlets. Clasts are very weak, medium density and white with light brown surface staining. Matrix is greyish brown. [GRADE Dc]			
Possibly structured CHALK, recovered as sandy silty, tabular, angular to subangular, fine to coarse GRAVEL with a low cobble content, occasional roots and rootlets. Clasts are weak, medium density and white with light brown surface staining. Matrix is white.			
Below 1.00m, clasts with much orangish brown staining. With rare subangular to subrounded medium to very large nodular flints (up to 200mm in size).			
Below 1.20, roots and rootlets are absent. With a layer of subangular to subrounded large flints (up to 100mm in size).			
Below 1.40m, with a medium tabular cobble content. Clasts with many black specks.	3.50		125.69
At 1.90m, with a layer recovered as slightly gravelly silt (10mm thick).			
Below 2.00m, with a low angular to subangular boulder content (450mm in size). Clasts with rare sheet-like shell fragments (up to 2mm thick).			
Between 2.30-2.70m, layer of subangular to subrounded large flint (up to 250mm in size).			
End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.60
Date	18/09/2019	Length (C)	3.20
Shoring	None.	Orientation	360 deg
		Date Backfilled	18/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
Figure 1 of 1
27/03/2020

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TRIAL PIT RECORD — Trial Pit

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP70102
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	405875.9 E, 140700.8 N	Ground Level	127.65 m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		127.65
0.15	B			TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subangular fine to coarse flint and chalk.	0.20		127.45
0.15	D						
0.50	B			Structureless CHALK, composed of sandy silty angular to subangular fine to coarse GRAVEL with rare rootlets. Clasts are very weak, low density and white with light brown surface staining. Matrix is greyish brown. With rare subangular to subrounded small and medium nodular flints (up to 100mm in size). [GRADE Dc]	0.50		127.15
0.50	D						
1.00	B						
1.00	D						
2.00	B			Possibly structured CHALK, recovered as sandy very silty tabular angular to subangular fine to coarse GRAVEL with rare rootlets and lenses (up to 50mm thick) of chalk recovered as slightly gravelly silt. Clasts are weak, low and medium density and white with light brown surface staining. Matrix is white. With rare subangular to subrounded small and medium nodular flints (up to 100mm in size).			
2.00	D		mc=24%				
3.00	B			Below 1.00m, clasts with much orangish brown surface staining.			
3.00	D			Below 1.30m, with a low tabular cobble content.			
3.15	B			Below 2.00m, with a medium cobble and low angular to subangular boulder content (up to 300mm in size). Clasts with many black specks. Rootlets are absent.			
3.50	D			Between 2.10-2.40m, with a layer of subrounded large flints (up to 250mm in size).	3.50		124.15
				Between 3.10-3.50m, with a layer of subangular to rounded very large flints (up to 400mm in size).			
				End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.60
Date	18/09/2019	Length (C)	3.10
Shoring	None.	Orientation	270 deg
		Date Backfilled	18/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
For details of the distribution of Strata 1 and 2, see attached sketch.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
Figure 1 of 1
27/03/2020

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TRIAL PIT RECORD *Trial Pit*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP70801
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	407677.8 E, 141493.5 N	Ground Level	74.89 m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		74.89
0.20	B			MADE GROUND: Brown sandy very silty gravel with a high cobble content of angular to subrounded concrete, brick, asphalt, and sandstone with cobble sized wood and metal fragments and occasional subangular to subrounded boulders of concrete, asphalt, brick and sandstone, with many lenses (up to 200mm thick) of firm brown slightly gravelly clay and occasional roots and rootlets. Gravel is angular to subrounded fine to coarse flint and chalk.		1	
0.20	D						
0.20	ES						
0.20			PID=<0.1		0.60		74.29
0.50	B						
0.50	D						
0.50	ES						
0.50			PID=<0.1				
1.00	B			At 0.30m, with a wooden post (0.7m in length).		2	
1.00	D		mc=16%				
1.00	ES						
1.00			PID=<0.1	MADE GROUND: Firm reddish brown sightly sandy slightly gravelly clay. Gravel is angular to subrounded fine to coarse flint, chalk brick and concrete.	2.00		72.89
2.10	B						
2.10	D		mc=18%	Below 0.60m, Strata 1 still present in northern half of pit (see accompanying sketch for more information).			
2.10	ES						
2.10			PID=<0.1			3	
				At 1.60m, 2 No. metal pipe (1.00m in length).			
3.10	B			CHALK, recovered as white, locally cream, sandy gravelly SILT. Clasts are weak, high density, white, with occasional light yellowish brown surface staining, angular to subangular and fine to coarse. With many angular to subangular small and medium nodular flints (up to 100mm in size).			
3.10	D				3.50		71.39
				End of Excavation			

Excavation

Plant	15T 360 excavator	Width (B)	0.60
Date	09/09/2019	Length (C)	4.50
Shoring	None.	Orientation	360 deg
		Date Backfilled	09/09/2019
Stability	Unstable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
A Plate Load Test was carried out at a depth of 0.50m.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
Figure 1 of 1
27/03/2020

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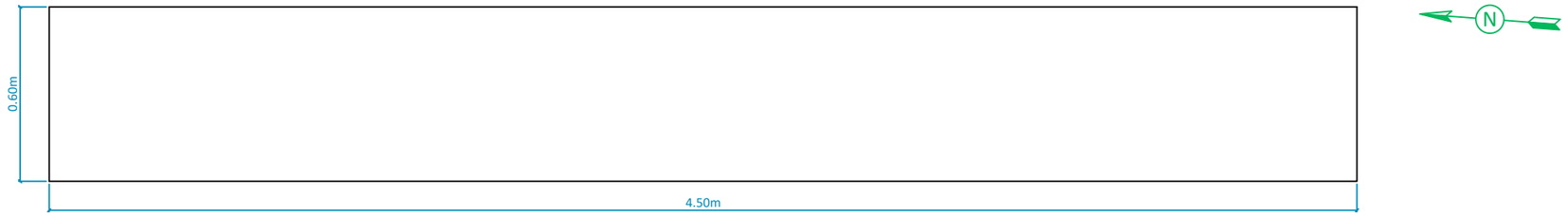
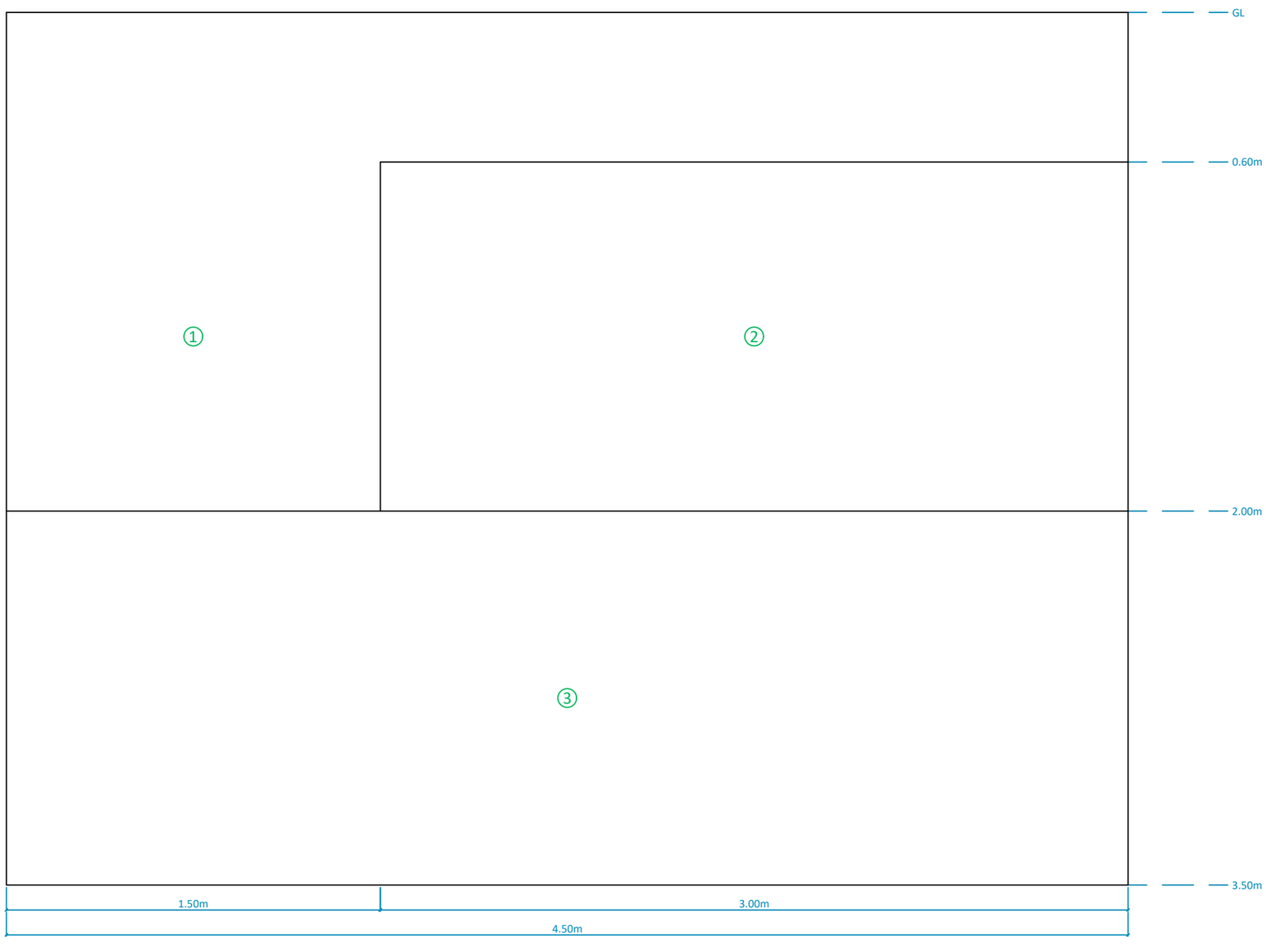


STP70801: Plan View



STP70801: Section A-A

For Strata Descriptions see log for STP70801

GEOTECHNICS
geotechnical and geoenvironmental specialists
Head Office
The Geotechnical Centre,
203 Torrington Avenue,
Tile Hill,
Coventry CV4 9AP
Phone: 024 7669 4664
Fax: 024 7669 4642
E:mail mail@geotechnics.co.uk
[redacted]

Engineer:
AECOM

Client:
Highways England

Project:
A303 Amesbury to Berwick Down - Phase 7A (II)

Drawing Title:
STP70801: Plan and Section View

Scale: 1:20@A3	Date: September 2019
Project No: PC197626	File Name: Geo-PC197626-001(1)

TRIAL PIT RECORD *Trial Pit*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP70802
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	407941.8 E, 141468.1 N	Ground Level	74.14 m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		74.14
0.20	B			TOPSOIL: Soft light brown slightly sandy gravelly silt with a low cobble content of angular to subrounded flint and many roots and rootlets. Gravel is angular to subrounded fine to coarse flint and rare chalk.	0.25		73.89
0.20	D						
0.20	ES						
0.20			PID=<0.1				
0.50	B			Structureless CHALK, composed of sandy very silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, low density and white with occasional light yellowish brown surface staining. Matrix is cream. With rare subangular to subrounded small nodular flints (up to 40mm in size). [GRADE Dc]			
0.50	D		mc=22%				
0.50	ES				1.00		73.14
0.50			PID=<0.1				
1.00	B						
1.00	D						
1.10	ES						
1.10			PID=<0.1				
2.00	B			CHALK, recovered as sandy very silty angular to subrounded fine to coarse GRAVEL with a medium angular to subrounded cobble content. Clasts are weak, high density and white with occasional light yellowish brown surface staining. Matrix is cream. With occasional very large flints (up to 200mm in size).			
2.00	D						
3.00	B			At 1.80m, with a layer of very large subangular to subrounded nodular flints (up to 250mm in size).			
3.00	D						
				Below 2.00m, clasts with much orangish brown surface staining.			
					3.50		70.64
				At 2.00m, with a layer of very large subangular to subrounded nodular flints (up to 350mm in size).			
				End of Excavation			

Excavation

Plant	15T 360 excavator	Width (B)	0.60
Date	09/09/2019	Length (C)	3.50
Shoring	None.	Orientation	360 deg
		Date Backfilled	09/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
A Plate Load Test was carried out at a depth of 0.50m.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
Figure 1 of 1
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TRIAL PIT RECORD *Trial Pit*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP71101
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	408576.1 E, 141347.1 N	Ground Level	86.08 m OD

Samples and Tests

Depth	Type	Stratum No	Results
0.30	B		
0.30	D		
0.50	B		
0.50	D		
1.00- 1.20	B		
1.00- 1.20	D		mc=13%
1.60	B		
1.60	D		
2.00	B		
2.00	D		
2.70	B		
2.70	D		

Strata

Scale 1:50

Description	Depth	Legend	Level m OD
	G.L.		86.08
TOPSOIL: Soft light brown slightly sandy slightly gravelly silt with a low cobble content of angular to subangular flint and many roots and rootlets. Gravel is angular to subrounded fine to coarse flint. Below 0.40, yellowish brown.	0.60		85.48
Soft light yellowish brown very silty SAND and GRAVEL with a low cobble content of angular to subrounded flint and occasional pockets (up to 200mm in size) of stiff slightly sandy gravelly silt. Gravel is angular to subrounded fine to coarse flint.	1.40		84.68
CHALK, recovered as sandy silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, low and medium density and white with light brown and rare orangish brown surface staining. Matrix is cream. With occasional small to large nodular flints (up to 150mm in size). Between 1.40-1.60m, recovered as slightly sandy slightly gravelly silt. Below 2.00m, with a medium subangular cobble content. Between 2.20-2.40m, layer of very large subangular to subrounded nodular flints (up to 400mm in size).			
End of Excavation	3.50		82.58

Excavation

Plant	13T 360 excavator	Width (B)	0.60
Date	03/09/2019	Length (C)	4.00
Shoring	None.	Orientation	270 deg
		Date Backfilled	03/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

A Plate Load Test was carried out at a depth of 0.50m.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
Figure 1 of 1
27/03/2020

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TRIAL PIT RECORD *Trial Pit*

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) | Engineer: AECOM | Trial Pit: STP71102 | Project No: PC197626

Client: HIGHWAYS ENGLAND | National Grid Coordinates: 408626.0 E, 141337.2 N | Ground Level: 87.88 m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Level m OD
					G.L.	87.88
0.20	B			TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint.	0.20	87.68
0.20	D					
0.50	B					
0.50	D			Soft light yellowish brown slightly sandy slightly gravelly SILT. Gravel is angular to subrounded fine to coarse flint.		
1.00	B					
1.00	D			Below 0.50m, sandy.		
1.20	B					
1.20	D				1.40	86.48
				CHALK, recovered as sandy silty angular to subrounded fine to coarse GRAVEL with a medium cobble content. Clasts are weak, high density and white with much light brown surface staining. Matrix is cream. With		
2.00	B			many subangular to subrounded small to large nodular		
2.00	D		mc=15%	flints (up to 200mm in size).		
				Below 1.60m, with occasional pockets (up to 30mm in size) of cream gravelly silt.		
				At 2.30m, with a layer of subangular to subrounded very large flints (up to 300mm in size).		
3.00	B					
3.00	D			Below 3.10m, clasts have many black specks and orangish brown surface staining.		
3.50	B				3.50	84.38
3.50	D			End of Excavation		

Excavation

Plant: 13T 360 excavator
Date: 03/09/2019
Shoring: None.
Stability: Stable during excavation.

Width (B): 0.60
Length (C): 4.80
Orientation: 270 deg
Date Backfilled: 03/09/2019

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

A Plate Load Test was carried out at a depth of 0.50m.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by: RP
Checked by: CPL
Figure: 1 of 1
27/03/2020

geotechnics

TRIAL PIT RECORD — Trial Pit

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP71401
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409428.0 E, 141459.5 N	Ground Level	108.01 m OD

Samples and Tests

Depth	Type	Stratum No	Results
0.30	B		
0.30	D		
0.30	ES		
0.30			PID=<0.1
0.50	B		
0.50	D		mc=12%
0.50	ES		
0.50			PID=<0.1
1.00	B		mc=18%
1.00	D		
1.00	ES		
1.00			PID=<0.1
2.00	B		
2.00	D		
2.00	ES		
2.00			PID=<0.1
3.00	B		
3.00	D		
3.00	ES		
3.00			PID=<0.1

Strata

Scale 1:50

Description	Depth	Legend	Level m OD
	G.L.		108.01
TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets and rare lenses (up to 30mm thick) of stiff slightly gravelly silt. Gravel is angular to subrounded fine to coarse flint.	0.40		107.61
Below 0.30m, gravel includes chalk.	0.70		107.31
Soft light brown slightly sandy slightly gravelly CLAY. with a low cobble content of angular to subrounded flint. Gravel is angular to subrounded fine to coarse flint and chalk.			
Below 0.60m, light yellowish brown.			
CHALK, recovered as sandy silty angular to subangular fine to coarse GRAVEL with a low subangular cobble content. Clasts are very weak, low and medium density and white with much light yellowish brown and rare orangish brown surface staining. Matrix is white. With rare subangular to subrounded small and medium nodular flints (up to 100mm in size).			
At 0.90m, with occasional subangular very large nodular flints (up to 200mm in size) with a 5mm thick cortex.			
Below 1.50m, clasts have many black specks. Flints are very large (up to 200mm in size).	3.50		104.51
Below 2.00m, with a high cobble content and low boulder content (up to 400mm in size).			
At 2.10m, with a very large subrounded nodular flint (370mm in size).			
At 3.40m, with many subangular to subrounded very large nodular flints (up to 300mm in size).			
End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.60
Date	05/09/2019	Length (C)	4.50
Shoring	None.	Orientation	360 deg
		Date Backfilled	05/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
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TRIAL PIT RECORD *Trial Pit*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	**Trial Pit** Project No	**STP71402** PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409563.4 E 141578.2 N	Ground Level	103.00 m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		103.00
0.20	B			TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subangular fine to coarse flint and chalk.	0.40		102.60
0.20	D						
0.20	ES						
0.20			PID=<0.1	Below 0.20m, light brown and gravelly.			
0.60	B						
0.60	D			Structureless CHALK, composed of very silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, low and medium density and white with yellowish brown surface staining. With rare subangular to subrounded small nodular flints (up to 50mm in size). Matrix is cream.			
0.60	ES						
0.60			PID=<0.1				
1.20	B						
1.20	D						
1.20	ES						
1.20			PID=<0.1	[GRADE Dc]	1.60		101.40
				Below 0.80m, with a low angular to subangular cobble content.			
2.00	B						
2.00	D			Possibly structured CHALK, recovered as silty slightly sandy angular to subrounded fine to coarse GRAVEL with a medium cobble and low boulder content (up to 400mm in size). Clasts are weak, low density and white with much orange surface staining. With rare subangular to subrounded small nodular flints (up to 50mm in size). Matrix is cream.			
3.00	B						
3.00	D		mc=26%				
				At 1.90m, with a lense (1.5m long x 0.4m thick) of structureless chalk, recovered as slightly gravelly silt surrounding subrounded very large nodular flints (up to 200mm in size). Clasts with many black specks.	3.50		99.50
				Below 2.50m, with rare sheet-like shell fragments (up to 2mm thick).			
				Below 3.00m, with a high boulder content (up to 600mm in size).			
				At 3.10m, with a layer of subangular to rounded very large nodular flints (up to 200mm in size).			
				End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.60
Date	16/09/2019	Length (C)	3.20
Shoring	None.	Orientation	270 deg
		Date Backfilled	16/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Soakaway Tests were carried out in the base of the trial pit.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
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TRIAL PIT RECORD *Trial Pit*

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM**

Trial Pit **STP71403**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**

National Grid Coordinates **409713.3** E **141713.1** N

Ground Level **103.57** m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		103.57
0.20	B			TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint.	0.20		103.37
0.20	D						
0.20	ES						
0.20			PID=<0.1	Below 0.15m, gravel includes chalk.			
0.60	B						
0.60	D			Structureless CHALK, composed of sandy very silty angular to subrounded fine to coarse GRAVEL. Clasts			
0.60	ES						
0.60			PID=<0.1	are very weak, low and medium density and white with			
1.10	B		mc=20%	rare yellowish brown and orangish brown surface	1.20		102.37
1.10	D		mc=19%	staining. Matrix is white. With rare small and medium			
1.10	ES			angular to subrounded nodular and sheet flints (up to			
1.10			PID=<0.1	100mm in size). [GRADE Dc]			
2.00	B			At 0.90m, with a layer of subrounded to rounded very large flints (up to 400mm in size).			
2.00	D						
2.00	ES						
2.00			PID=<0.1	CHALK, recovered as sandy silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, low and medium density and white with rare yellowish brown and orangish brown surface staining. Matrix is white. With rare small and medium angular to subrounded nodular and sheet flints (up to 100mm in size).			
2.70	D						
3.00	B						
3.00	D						
3.00	ES			Below 1.50m, with a high angular to subangular cobble content. Clasts have many black specks.			
3.00			PID=<0.1				
					3.50		100.07
				Between 2.70-2.80m, recovered as slightly gravelly silt.			
				At 2.80m, with a layer of subangular to rounded very large nodular flints (up to 200mm in size).			
				End of Excavation			

Excavation

Plant **13T 360 excavator**
Date **05/09/2019**
Shoring **None.**
Stability **Stable during excavation.**

Width (B) **0.60**
Length (C) **3.60**
Orientation **360 deg**
Date Backfilled **05/09/2019**

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

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TRIAL PIT RECORD — Trial Pit

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP71404
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409823.1 E, 141882.2 N	Ground Level	104.21 m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		104.21
0.20	B			TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets and a low cobble content of angular to subrounded flint. Gravel is angular to subrounded fine to coarse flint and chalk.			
0.20	D				0.30		103.91
0.20	ES						
0.20			PID=<0.1		0.55		103.66
0.50	B			Soft yellowish brown slightly sandy slightly gravelly CLAY with a low cobble content of angular to subangular flint. Gravel is angular to subrounded fine to coarse flint and medium to high density chalk.			
0.50	D		mc=20%		0.90		103.31
0.50	ES						
0.50			PID=<0.1				
1.20	B			Structureless CHALK, composed of sandy very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density, white with yellowish brown surface staining. Matrix is cream. With rare angular to subrounded small and medium nodular flints (up to 100mm in size). [GRADE Dc]			
1.20	D						
1.20	ES						
1.20			PID=<0.1				
2.00	B						
2.00	D						
3.00	B			Possibly structured CHALK, recovered as silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low and medium density, white with rare orangish brown surface staining. Matrix is white. With rare angular to subrounded small and medium nodular flints (up to 150mm in size).			
3.00	D						
3.50	B			Below 1.50m, with a medium angular to subangular cobble content. Clasts are tabular with much orange surface staining.	3.50		100.71
3.50	D						
				At 2.20m, with a layer of subangular to rounded very large flints (up to 200mm in size).			
				Below 3.00m, with occasional lenses (up to 100mm thick) of structureless chalk, recovered as slightly gravelly silty.			
				End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.50
Date	16/09/2019	Length (C)	3.20
Shoring	None.	Orientation	360 deg
		Date Backfilled	16/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Soakaway Tests were carried out in the base of the trial pit.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
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TRIAL PIT RECORD *Trial Pit*

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM**

Trial Pit **STP71405**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**

National Grid Coordinates **409885.5** E **142065.1** N

Ground Level **100.74** m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		100.74
0.20	B			TOPSOIL: Soft light brown slightly sandy gravelly silt with a low cobble content of subangular to subrounded flint and many roots and rootlets. Gravel is angular to subrounded fine to coarse flint and chalk.			
0.20	D				0.30		100.44
0.20	ES				0.40		100.34
0.20			PID=<0.1				
0.30	B			Light yellowish brown very gravelly very silty SAND. Gravel is angular to subrounded fine to coarse flint and chalk.			
0.30	D						
0.50	B				1.00		99.74
0.50	D						
0.50	ES						
0.50			PID=<0.1	Structureless CHALK, composed of sandy very silty angular to subangular fine to coarse GRAVEL and a low cobble content. Clasts are very weak, low and medium density, white with occasional light yellowish brown surface staining. Matrix is white. With occasional subangular to subrounded small to large nodular flints (up to 200mm in size). [GRADE Dc]			
1.20	B		mc=15%				
1.20	D						
1.20	ES						
1.20			PID=<0.1				
2.00	B						
2.00	D						
2.00	ES						
2.00			PID=<0.1				
3.00	B			CHALK, recovered as sandy very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low and medium density, white with occasional orangish brown surface staining. Matrix is white. With occasional subangular to subrounded small to very large nodular flints (up to 300mm in size).			
3.00	D						
3.00	ES						
3.00			PID=<0.1	At 1.20m, with a layer of subangular to subrounded very large nodular flints (up to 200mm in size).			
				Below 1.50m, clasts have many black specks and orangish brown surface staining.	3.70		97.04
				At 2.20m, with a layer of subangular to subrounded very large nodular flints (up to 200mm in size).			
				At 3.50m, with a layer of subangular to subrounded very large nodular flints (up to 300mm in size).			
				End of Excavation			

Excavation

Plant **13T 360 excavator**
Date **05/09/2019**
Shoring **None.**
Stability **Stable during excavation.**

Width (B) **0.60**
Length (C) **3.50**
Orientation **090 deg**
Date Backfilled **05/09/2019**

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **RP**
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TRIAL PIT RECORD *Trial Pit*

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM**

Trial Pit **STP71406**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**

National Grid Coordinates **409875.7** E **142211.4** N

Ground Level **103.34** m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Level m OD
					G.L.	103.34
0.20	B			**TOPSOIL: Soft light brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint and chalk.**	0.30	103.04
0.20	D					
0.20	ES					
0.20			PID=<0.1	**Structureless CHALK, composed of sandy very silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, low density and white with rare yellowish brown surface staining. Matrix is brownish grey. With rare subangular to subrounded small nodular flints (up to 50mm in size).**		
0.60	B					
0.60	D					
0.60	ES					
0.60			PID=<0.1			
1.20	B				1.20	102.14
1.20	D		mc=20%	**[GRADE Dc]**		
1.20	ES					
1.20			PID=<0.1	**At 0.45m, with a sheet flint (up to 20mm thickness), recovered as angular to subangular small to very large fragments (up to 200mm in size).**		
2.00	B			**Below 1.00m, matrix is white.**		
2.00	D					
				CHALK, recovered as sandy silty angular to subrounded fine to coarse GRAVEL with a high cobble content. Clasts are very weak, low and medium density and white with rare yellowish brown surface staining. Matrix is brownish grey. With rare subangular to subrounded small nodular flints (up to 50mm in size).		
				Between 1.40-1.70m, with an undulating layer of very large subangular to subrounded nodular flints (up to		
3.50	B			**200mm in size)**	3.50	99.84
3.50	D			**Below 1.50m, silty with a high subangular cobble content. Clasts have many black specks and orangish brown surface staining.**		
				Below 2.00m, with a low subangular boulder content. Flints are very large (up to 200mm in size).		
				At 3.00m, with a layer of subangular to subrounded very large nodular flints (up to 200mm in size).		
				End of Excavation		

Excavation

Plant **13T 360 excavator**
Date **06/09/2019**
Shoring **None.**
Stability **Stable during excavation.**

Width (B) **0.60**
Length (C) **4.50**
Orientation **180 deg**
Date Backfilled **06/09/2019**

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

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TRIAL PIT RECORD — Trial Pit

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP71602
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409005.0 E, 141093.5 N	Ground Level	106.32 m OD

Samples and Tests

Depth	Type	Stratum No	Results
0.20	B		
0.20	D		mc=21%
0.20	ES		
0.20			PID=0.1
0.60	B		
0.60	D		
0.60	ES		
0.60			PID=<0.1
1.00	B		
1.00	D		mc=16%
1.00	ES		
1.00			PID=<0.1
2.00	B		
2.00	D		
3.00	B		
3.00	D		
3.50	B		
3.50	D		

Strata

Scale 1:50

Description	Depth	Legend	Level m OD
	G.L.		106.32
TOPSOIL: Soft dark brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint and rare chalk.	0.20		106.12
Soft light yellowish brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse flint and chalk.	0.50		105.82
Structureless CHALK, composed of slightly sandy very silty angular to subrounded fine to coarse GRAVEL with occasional roots and rootlets. Clasts are very weak, low density and white with light brown surface staining. Matrix is cream. With occasional subangular to subrounded very large nodular flints (up to 200mm in size). [GRADE Dc] At 0.70m, with a layer of subrounded to rounded very large nodular flints (up to 300mm in size).	1.40		104.92
Possibly structured CHALK, recovered as sandy silty tabular angular to subrounded fine to coarse GRAVEL with a medium angular to subrounded cobble content. Clasts are weak, low and medium density and white with much orangish brown surface staining. Matrix is white. With occasional subangular to subrounded large nodular flints (up to 150mm in size). Below 2.00m, with a low subangular boulder content (up to 350mm in size) and occasional pockets (up to 200m in size) of structureless chalk, recovered as slightly gravelly silt Below 3.00m, clasts with many black specks.	3.50		102.82
End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.50
Date	13/09/2019	Length (C)	3.00
Shoring	None.	Orientation	360 deg
		Date Backfilled	13/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

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TRIAL PIT RECORD — Trial Pit

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP71603
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409152.4 E, 141064.0 N	Ground Level	110.82 m OD

Samples and Tests

Depth	Type	Stratum No	Results
0.20	B		
0.20	D		
0.20	ES		
0.20			PID=<0.1
0.60	B		
0.60	D		
0.60	ES		
0.60			PID=<0.1
1.20	B		
1.20	D		
1.20	ES		
1.20			PID=<0.1
2.00	B		
2.00	D		
3.00	B		
3.00	D		mc=25%

Strata

Scale 1:50

Description	Depth	Legend	Level m OD
	G.L.		110.82
TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint.	0.30		110.52
Below 0.15m. gravelly. Gravel includes chalk.			
Structureless CHALK, composed of slightly sandy very silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, medium and high density and white with light brown surface staining. Matrix is greyish brown. With rare subangular to subrounded nodular flints (up to 200mm in size). [GRADE Dc]	1.50		109.32
At 0.80m, layer of subrounded very large flints (up to 350mm in size).			
Below 0.90m, matrix is white.			
Below 1.20m, silty, with a high angular to subangular cobble content.			
Possibly structured CHALK, recovered as slightly sandy silty angular to subrounded fine to coarse GRAVEL with a high cobble content. Clasts are weak, low density and white with occasional orangish brown surface staining. Matrix is white. With rare subangular to subrounded medium to very large nodular flints (up to 400mm in size).	3.50		107.32
Below 2.00m, with occasional layers (up to 10mm thick) of structureless chalk, recovered as slightly gravelly silt.			
Below 2.20m, with a low angular to subangular boulder content.			
At 2.20m, layer of subrounded very large flints (up to 400mm in size).			
End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.70
Date	17/09/2019	Length (C)	3.40
Shoring	None.	Orientation	270 deg
		Date Backfilled	17/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Soakaway Tests were carried out in the base of the trial pit.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
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TRIAL PIT RECORD *Trial Pit*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP71604
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	409300.2 E, 141091.3 N	Ground Level	112.83 m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		112.83
0.20	B			TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint.	0.30		112.53
0.20	D						
0.20	ES						
0.20			PID=<0.1	Below 0.10m, yellowish brown. Gravel includes rare chalk.			
0.60	B						
0.60	D						
0.60	ES			Below 0.20m, gravelly. Gravel includes predominantly chalk.	1.00		111.83
0.60			PID=<0.1				
1.00	B			Structureless CHALK, composed of slightly sandy very silty angular to subrounded fine to coarse GRAVEL with occasional pockets (up to 20mm thick) of chalk recovered as slightly gravelly silt. Clasts are very weak, low density and white with light brown surface staining. Matrix is greyish brown. With rare subangular to subrounded small and medium nodular flints (up to 100mm in size) [GRADE Dc]			
1.00	D						
1.00	ES						
1.00			PID=<0.1				
2.00	B						
2.00	D		mc=22%				
3.00	B			Possibly structured CHALK, recovered as sandy very silty tabular angular to subrounded fine to coarse GRAVEL. Clasts are weak, low and medium density and white with occasional orangish brown surface staining. Matrix is white. With occasional subangular to subrounded small to very large nodular flints (up to 400mm in size)			
3.00	D						
3.50	B			Below 1.50, with a medium angular to subangular cobble content.	3.50		109.33
				At 2.00m, with a layer of subrounded very large flints (up to 400mm in size).			
				Below 2.00m, with a low angular to subangular boulder.			
				End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.60
Date	17/09/2019	Length (C)	3.20
Shoring	None.	Orientation	180 deg
		Date Backfilled	17/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

ES sample = 1 x vial, 1 x plastic jar and 1 amber jar
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
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Figure 1 of 1
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TRIAL PIT RECORD *Trial Pit*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP72701
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	407491.8 E, 141588.6 N	Ground Level	85.92 m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		85.92
0.20	B			TOPSOIL: Dark brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint and rare chalk.	0.30		85.62
0.20	D						
0.50	B						
0.50	D		mc=12%	Soft orangish brown slightly sandy slightly gravelly CLAY with a low cobble content of angular to subrounded flint. Gravel is angular to subrounded fine to coarse flint and rare chalk.	1.00		84.92
1.20	B			Light brown very sandy very silty GRAVEL with a medium cobble content of subrounded flint. Silt is comminuted chalk. Gravel is angular to subrounded fine to coarse flint with rare chalk.			
1.20	D						
1.80- 2.00	B			Below 1.60m, with a high cobble and low boulder content (up to 450mm in size) of angular to subrounded flint.			
2.00	D						
2.50	B			Below 1.80m, with rare lenses (up to 30mm thick) of chalk with a coating (up to 5mm thick) of dark brown silt and occasional plant matter. Chalk is recovered as cream slightly gravelly silt. Clasts are very weak, low density, angular to subangular, fine to medium and white with occasional light brown surface staining.	2.70		83.22
2.50	D		mc=9.7%	At 2.50m, clasts are high density.			
				End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.50
Date	12/09/2019	Length (C)	3.10
Shoring	None.	Orientation	360 deg
		Date Backfilled	12/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

Soakaway Tests were carried out in the base of the trial pit.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
Checked by CPL
Figure 1 of 1
27/03/2020

geotechnics

TRIAL PIT RECORD *Trial Pit*

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM**

Trial Pit **STP72702**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**

National Grid Coordinates **407603.8** E **141311.7** N

Ground Level **73.12** m OD

Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Level m OD
					G.L.	73.12
0.20	B			**TOPSOIL: Soft dark brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint.**	0.25	72.87
0.20	D					
0.50	B			**Soft orangish brown slightly sandy gravelly SILT with occasional rootlets. Gravel is angular to subrounded fine to coarse flint and rare chalk.**	0.80	72.32
0.50	D					
1.00	B					
1.00	D		mc=9.5%	**Soft light yellowish brown slightly sandy gravelly CLAY with a low cobble content of chalk and flint and occasional lenses (up to 250mm in size) of chalk. Chalk lenses are recovered as cream slightly gravelly silt. Clasts are very weak, low density, white with occasional light brown surface staining, angular to subangular and fine to coarse. Gravel is angular to subangular fine to coarse flint and chalk.**		
2.00	B				2.00	71.12
2.00	D			**Below 1.25m, with many chalk lenses.**		
2.50	B			**Below 1.90m, with many lenses of light brown silt (up to 150mm in size).**		
2.50	D				2.60	70.52
				Structureless CHALK, composed of white, locally cream, sandy very silty GRAVEL. Clasts are very weak, medium and high density, white with occasional light brown surface staining, angular to subangular and fine to coarse. [GRADE Dm]		
				End of Excavation		

Excavation

Plant **13T 360 excavator**
Date **12/09/2019**
Shoring **None.**
Stability **Stable during excavation.**

Width (B) **0.50**
Length (C) **3.10**
Orientation **180 deg**
Date Backfilled **12/09/2019**

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

Soakaway Tests were carried out in the base of the trial pit.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **RP**
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Figure **1 of 1**
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TRIAL PIT RECORD

Trial Pit

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP72703
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	407988.2 E, 141377.4 N	Ground Level	77.26 m OD

Samples and Tests

Depth	Type	Stratum No	Results
0.20	B		
0.20	D		
0.60	B		
0.60	D		
1.00	B		
1.00	D		
2.00	B		
2.00	D		mc=12%
2.50	B		
2.50	D		

Strata

Scale 1:50

Description	Depth	Legend	Level m OD
	G.L.		77.26
TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint.	0.25		77.01
Soft light yellowish brown slightly sandy gravelly SILT. Gravel is angular to subrounded fine to coarse flint and rare chalk.	0.40		76.86
Structureless CHALK, composed of sandy very silty angular to subangular fine to coarse GRAVEL. Clasts are very weak, low density and white. Matrix is cream. With many subangular to subrounded small to very large nodular flints (up to 300mm in size). [GRADE Dc]	1.00		76.26
CHALK, recovered as sandy very silty angular to subangular fine to coarse GRAVEL. Clasts are weak, low and medium density and white. Matrix is white. With many subangular to subrounded small to very large nodular flints (up to 350mm in size). Below 1.50m, clasts with occasional yellowish brown surface staining. Below 2.00m, with a medium angular to subrounded cobble content.			
End of Excavation	3.50		73.76

Excavation

Plant	13T 360 excavator	Width (B)	0.50
Date	10/09/2019	Length (C)	3.00
Shoring	None.	Orientation	300 deg
		Date Backfilled	10/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

Soakaway Tests were carried out in the base of the trial pit.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
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Figure 1 of 1
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TRIAL PIT RECORD *Trial Pit*

Project **A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)** Engineer **AECOM**

Trial Pit **STP72704**
Project No **PC197626**

Client **HIGHWAYS ENGLAND**

National Grid Coordinates **408351.4** E **141602.2** N

Ground Level **76.51** m OD

Scale 1:50

Samples and Tests				Strata			
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		76.51
0.20	B			**TOPSOIL: Soft brown slightly sandy slightly gravelly silt with many roots and rootlets. Gravel is angular to subrounded fine to coarse flint.**	0.20		76.31
0.20	D						
0.50	B						
0.50	D		mc=12%	**Soft light brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse flint and rare chalk.**			
1.00	B				0.95		75.56
1.00	D			**Structureless CHALK, composed of cream slightly sandy slightly gravelly SILT. Clasts are very weak, medium and high density, white with occasional light brown surface staining, angular to subangular and fine to coarse. With many angular to subangular small to large flints (up to 150mm in size). [GRADE Dm]**			
2.00	B				2.00		74.51
2.00	D		mc=20%	**At 1.00m, with a layer of angular to subangular very large flints (up to 200mm in size).**			
2.50	B			**At 1.70m, with a layer of angular to subangular large flints (up to 150mm in size).**	2.60		73.91
2.50	D			**Below 1.80m, gravelly.**			
				CHALK, recovered as sandy very silty angular to subrounded fine to coarse GRAVEL with a low subangular cobble content. Clasts are very weak, low density and white with rare black specks and orangish brown surface staining. Matrix is cream. With occasional angular to subangular small to large flints (up to 100mm in size).			
				End of Excavation			

Excavation

Plant **13T 360 excavator**
Date **11/09/2019**
Shoring **None.**
Stability **Stable during excavation.**

Width (B) **0.60**
Length (C) **3.30**
Orientation **180 deg**
Date Backfilled **11/09/2019**

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

Soakaway Tests were carried out in the base of the trial pit.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **RP**
Checked by **CPL**
Figure **1 of 1**
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TRIAL PIT RECORD *Trial Pit*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)	Engineer	AECOM	Trial Pit	STP72705
				Project No	PC197626
Client	HIGHWAYS ENGLAND	National Grid Coordinates	408886.2 E 141208.5 N	Ground Level	98.74 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
					G.L.		98.74
0.20	B			TOPSOIL: Soft light brown slightly sandy gravelly silt with a low cobble content of angular to subangular flint and many roots and rootlets. Gravel is angular to subrounded fine to coarse chalk and flint.	0.25		98.49
0.20	D						
0.60	B						
0.60	D						
				Structureless CHALK, composed of sandy silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, low density and white with occasional light brown and rare orangish brown surface staining. Matrix is cream. With rare subangular to rounded small to large flints (up to 150mm in size). [GRADE Dc]	1.00		97.74
1.10	B						
1.10	D						
				CHALK, recovered as sandy silty angular to subrounded fine to coarse GRAVEL. Clasts are very weak, low and medium density and white with rare black specks and occasional orangish brown surface staining. Matrix is grey. With rare subangular to rounded small to very large flints (up to 400mm in size).			
2.00	B						
2.00	D						
2.40	B				2.50		96.24
2.40	D		mc=23%				
				Below 1.50m, with a medium cobble content. Clasts with many black specks and orangish brown surface staining.			
				At 2.00m, layer of subangular to subrounded very large flints (up to 400mm in size).			
				End of Excavation			

Excavation

Plant	13T 360 excavator	Width (B)	0.50
Date	11/09/2019	Length (C)	3.00
Shoring	None.	Orientation	270 deg
		Date Backfilled	11/09/2019
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Details
		None encountered during excavation.

Remarks

Soakaway Tests were carried out in the base of the trial pit.
Chalk logged in accordance with CIRIA Report C574, 2002.
Flints described as in "Logging the Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing).
Intact Dry Density determined using hand pressure as in Table 3.7 of the CIRIA Report C574, 2002.
Backfill details from base of hole: arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by RP
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Figure 1 of 1
27/03/2020

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Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70101 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70101 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70102 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70102 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70801 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70801 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70801 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70802 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70802 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70802 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP70802 - Photo 4

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71101 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71101 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71101 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71101 - Photo 4

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71102 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71102 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71102 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71102 - Photo 4

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71102 - Photo 5

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71401 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71401 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71401 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71401 - Photo 4

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71402 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71402 - Photo 2

Project Number : PC197626

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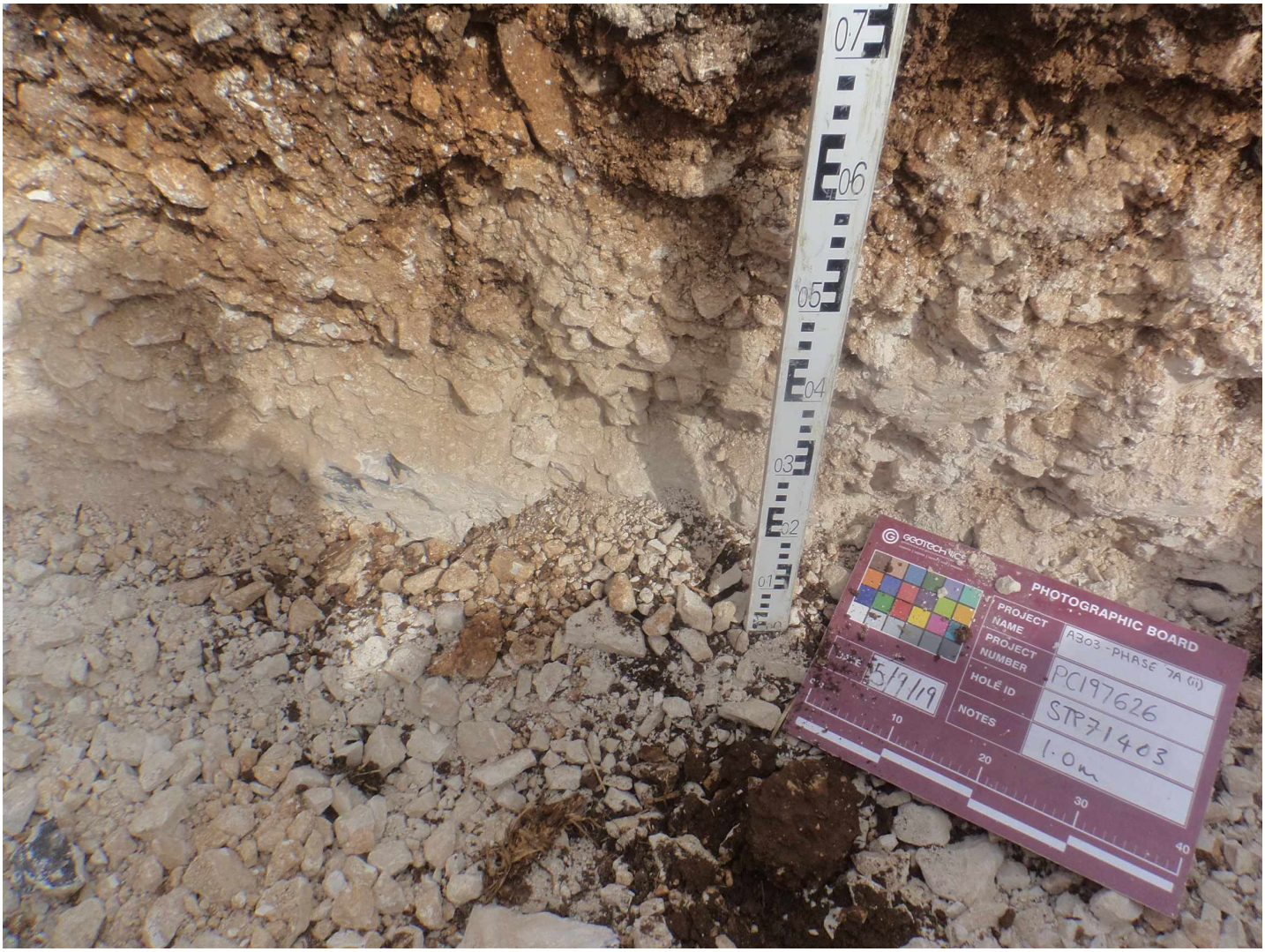
STP71402 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)



STP71403 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71403 - Photo 2

Project Number : PC197626

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STP71403 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71403 - Photo 4

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71403 - Photo 5

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71404 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71404 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71404 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71405 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71405 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71405 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71406 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71406 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71406 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71602 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71602 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71602 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71602 - Photo 4

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71603 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71603 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71604 - Photo 1

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Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP71604 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72701 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72701 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72701 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72702 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72702 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72702 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72702 - Photo 4

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72703 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72703 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72703 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72704 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72704 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72704 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72705 - Photo 1

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72705 - Photo 2

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72705 - Photo 3

Project Number : PC197626

Project : A303 Amesbury to Berwick Down - Phase 7a (ii)

STP72705 - Photo 4

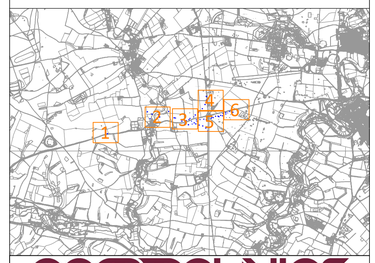
APPENDIX 6

Exploratory Hole Location Plan

Key

- Rotary Borehole
- Trial Pit
- Dynamic Sample Borehole

Hole ID	Easting (mE)	Northing (mN)	Level (mOD)
R71201	409071.2	141233.7	103.34
R71202	409175.4	141270.9	104.35
R71204	409473.1	141266.3	111.07
R71205	409623.2	141274.5	111.35
R71206	409772.2	141288.9	111.05
R71207	409872.3	141267.2	108.79
R71208	409214.9	141321.4	107.40
R71209	409374.0	141384.6	109.58
R71211	409279.3	141207.6	109.18
R71212	409384.8	141140.2	113.14
R71213	409494.9	141201.6	112.57
R71802	410075.5	141324.6	105.33
R71803	410097.9	141365.0	106.20
R71804	410155.5	141350.6	104.33
R71806	410249.0	141410.5	103.59
R71807	410348.1	141411.1	100.61
R71808	410386.0	141386.8	99.70
R71810	410455.9	141447.0	99.01
R71811	410524.0	141429.0	99.95
R71812	410547.7	141518.5	98.58
R71814	410663.1	141496.1	97.45
R71815	410664.4	141562.4	97.36
R71816	410736.9	141542.3	95.74
R71818	410819.1	141600.7	96.50
R71819	410884.3	141605.9	97.81
R71820	410949.5	141570.9	99.72
STP70101	405806.4	140723.7	129.19
STP70102	405875.9	140700.8	127.65
STP70801	407677.8	141493.5	74.89
STP70802	407941.8	141468.1	74.14
STP71101	408576.1	141347.1	86.08
STP71102	408626.0	141337.2	87.88
STP71401	409428.0	141459.5	108.01
STP71402	409563.4	141578.2	103.00
STP71403	409713.3	141713.1	103.57
STP71404	409823.1	141882.2	104.21
STP71405	409885.5	142065.1	100.74
STP71406	409875.7	142211.4	103.34
STP71602	409005.0	141093.5	106.32
STP71603	409152.4	141064.0	110.82
STP71604	409300.2	141091.3	112.83
STP72701	407491.8	141588.6	85.92
STP72702	407603.8	141311.7	73.12
STP72703	407988.2	141377.4	77.26
STP72704	408351.4	141602.2	76.51
STP72705	408886.2	141208.5	98.74
WS71501	409446.2	141098.9	114.99
WS71502	409581.9	141052.5	118.94
WS71503	409728.1	141016.0	117.56
WS71504	409850.3	140932.4	113.49
WS71505	409929.1	140805.0	108.20



GEOTECHNICS
geotechnical and geoenvironmental specialists
Head Office
The Geotechnical Centre,
203 Torrington Avenue,
Tile Hill,
Coventry CV4 9AP
Phone: 024 7669 4664
Fax: 024 7669 4642
Email mail@geotechnics.co.uk

Engineer:
AECOM

Client:
Highways England

Project:
A303 Amesbury to Berwick Down - Phase 7a(ii)

Drawing Title:

EXPLORATORY HOLE LOCATION PLAN

Drawing 1 of 6

Scale: 1:1500@A1

Date:
October 2019

Project No:
PC197626

File Name:
Geo-PC197626-002(1)

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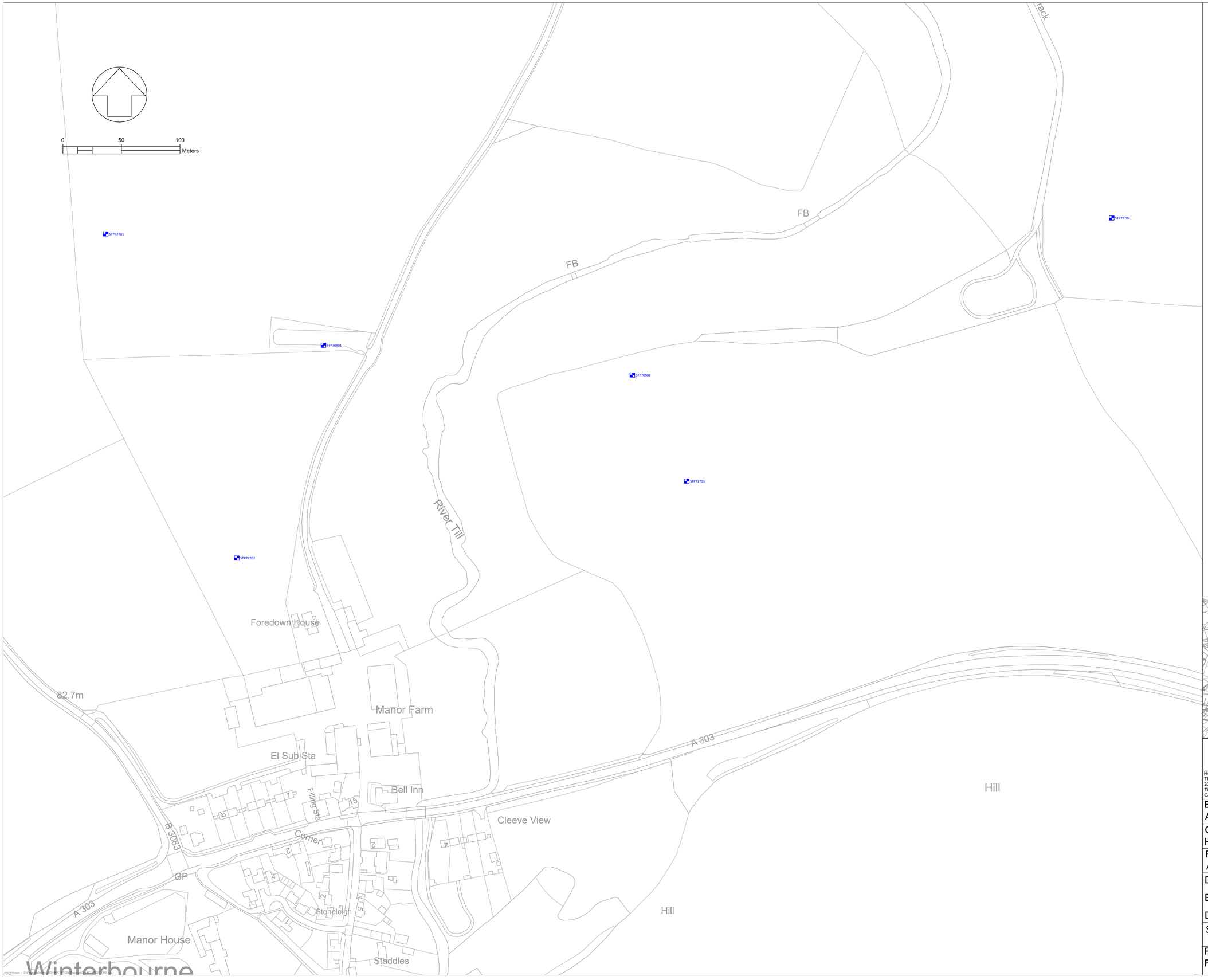

Key

- Rotary Borehole
- Trial Pit
- Dynamic Sample Borehole

Hole ID	Easting (mE)	Northing (mN)	Level (mOD)
R71201	409071.2	141233.7	103.34
R71202	409175.4	141270.9	104.35
R71204	409473.1	141266.3	111.07
R71205	409623.2	141274.5	111.35
R71206	409772.2	141288.9	111.05
R71207	409872.3	141267.2	108.79
R71208	409214.9	141321.4	107.40
R71209	409374.0	141384.6	109.58
R71211	409279.3	141207.6	109.18
R71212	409384.8	141140.2	113.14
R71213	409494.9	141201.6	112.57
R71802	410075.5	141324.6	105.33
R71803	410097.9	141365.0	106.20
R71804	410155.5	141350.6	104.33
R71806	410249.0	141410.5	103.59
R71807	410348.1	141411.1	100.61
R71808	410386.0	141386.8	99.70
R71810	410455.9	141447.0	99.01
R71811	410524.0	141429.0	99.95
R71812	410547.7	141518.5	98.58
R71814	410663.1	141496.1	97.45
R71815	410664.4	141562.4	97.36
R71816	410736.9	141542.3	95.74
R71818	410819.1	141600.7	96.50
R71819	410884.3	141605.9	97.81
R71820	410949.5	141570.9	99.72
STP70101	405806.4	140723.7	129.19
STP70102	405875.9	140700.8	127.65
STP70801	407677.8	141493.5	74.89
STP70802	407941.8	141468.1	74.14
STP71101	408576.1	141347.1	86.08
STP71102	408626.0	141337.2	87.88
STP71401	409428.0	141459.5	108.01
STP71402	409563.4	141578.2	103.00
STP71403	409713.3	141713.1	103.57
STP71404	409823.1	141882.2	104.21
STP71405	409885.5	142065.1	100.74
STP71406	409875.7	142211.4	103.34
STP71602	409005.0	141093.5	106.32
STP71603	409152.4	141064.0	110.82
STP71604	409300.2	141091.3	112.83
STP72701	407491.8	141588.6	85.92
STP72702	407603.8	141311.7	73.12
STP72703	407988.2	141377.4	77.26
STP72704	408351.4	141602.2	76.51
STP72705	408886.2	141208.5	98.74
WS71501	409446.2	141098.9	114.99
WS71502	409581.9	141052.5	118.94
WS71503	409728.1	141016.0	117.56
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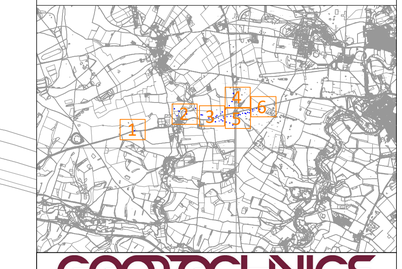

GEOTECHNICS
geotechnical and geoenvironmental specialists
Head Office
The Geotechnical Centre,
203 Torrington Avenue,
Tile Hill,
Coventry CV4 9AP
Phone: 024 7669 4664
Fax: 024 7669 4642
Email mail@geotechnics.co.uk

Engineer:
AECOM

Client:
Highways England

Project:
A303 Amesbury to Berwick Down - Phase 7a(ii)

Drawing Title:
EXPLORATORY HOLE LOCATION PLAN

Drawing 2 of 6

Scale: 1:1500@A1

Date:
October 2019

Project No:
PC197626

File Name:
Geo-PC197626-002(2)

Key

- Rotary Borehole
- Trial Pit
- Dynamic Sample Borehole

Hole ID	Easting (mE)	Northing (mN)	Level (mOD)
R71201	409071.2	141233.7	103.34
R71202	409175.4	141270.9	104.35
R71204	409473.1	141266.3	111.07
R71205	409623.2	141274.5	111.35
R71206	409772.2	141288.9	111.05
R71207	409872.3	141267.2	108.79
R71208	409214.9	141321.4	107.40
R71209	409374.0	141384.6	109.58
R71211	409279.3	141207.6	109.18
R71212	409384.8	141140.2	113.14
R71213	409494.9	141201.6	112.57
R71802	410075.5	141324.6	105.33
R71803	410097.9	141365.0	106.20
R71804	410155.5	141350.6	104.33
R71806	410249.0	141410.5	103.59
R71807	410348.1	141413.1	100.61
R71808	410386.0	141386.8	99.70
R71810	410455.9	141447.0	99.01
R71811	410524.0	141429.0	99.95
R71812	410547.7	141518.5	98.58
R71814	410663.1	141496.1	97.45
R71815	410664.4	141562.4	97.36
R71816	410736.9	141542.3	95.74
R71818	410819.1	141600.7	96.50
R71819	410884.3	141605.9	97.81
R71820	410949.5	141570.9	99.72
STP70101	405806.4	140723.7	129.19
STP70102	405875.9	140700.8	127.65
STP70801	407677.8	141493.5	74.89
STP70802	407941.8	141468.1	74.14
STP71101	408576.1	141347.1	86.08
STP71102	408626.0	141337.2	87.88
STP71401	409428.0	141459.5	108.01
STP71402	409563.4	141578.2	103.00
STP71403	409713.3	141713.1	103.57
STP71404	409823.1	141882.2	104.21
STP71405	409885.5	142065.1	100.74
STP71406	409875.7	142211.4	103.34
STP71602	409005.0	141093.5	106.32
STP71603	409152.4	141064.0	110.82
STP71604	409300.2	141091.3	112.83
STP72701	407491.8	141588.6	85.92
STP72702	407603.8	141311.7	73.12
STP72703	407988.2	141377.4	77.26
STP72704	408351.4	141602.2	76.51
STP72705	408886.2	141208.5	98.74
WS71501	409446.2	141098.9	114.99
WS71502	409581.9	141052.5	118.94
WS71503	409728.1	141016.0	117.56
WS71504	409850.3	140932.4	113.49
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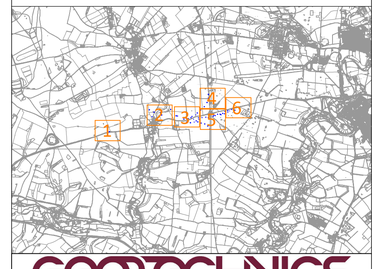

GEOTECHNICS
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Head Office
The Geotechnical Centre,
203 Torrington Avenue,
Tile Hill,
Coventry CV4 9AP

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Client:
Highways England

Project:
A303 Amesbury to Berwick Down - Phase 7a(ii)

Drawing Title:
EXPLORATORY HOLE LOCATION PLAN

Drawing 3 of 6

Scale: 1:1500@A1

Date:
October 2019

Project No:
PC197626

File Name:
Geo-PC197626-002(3)

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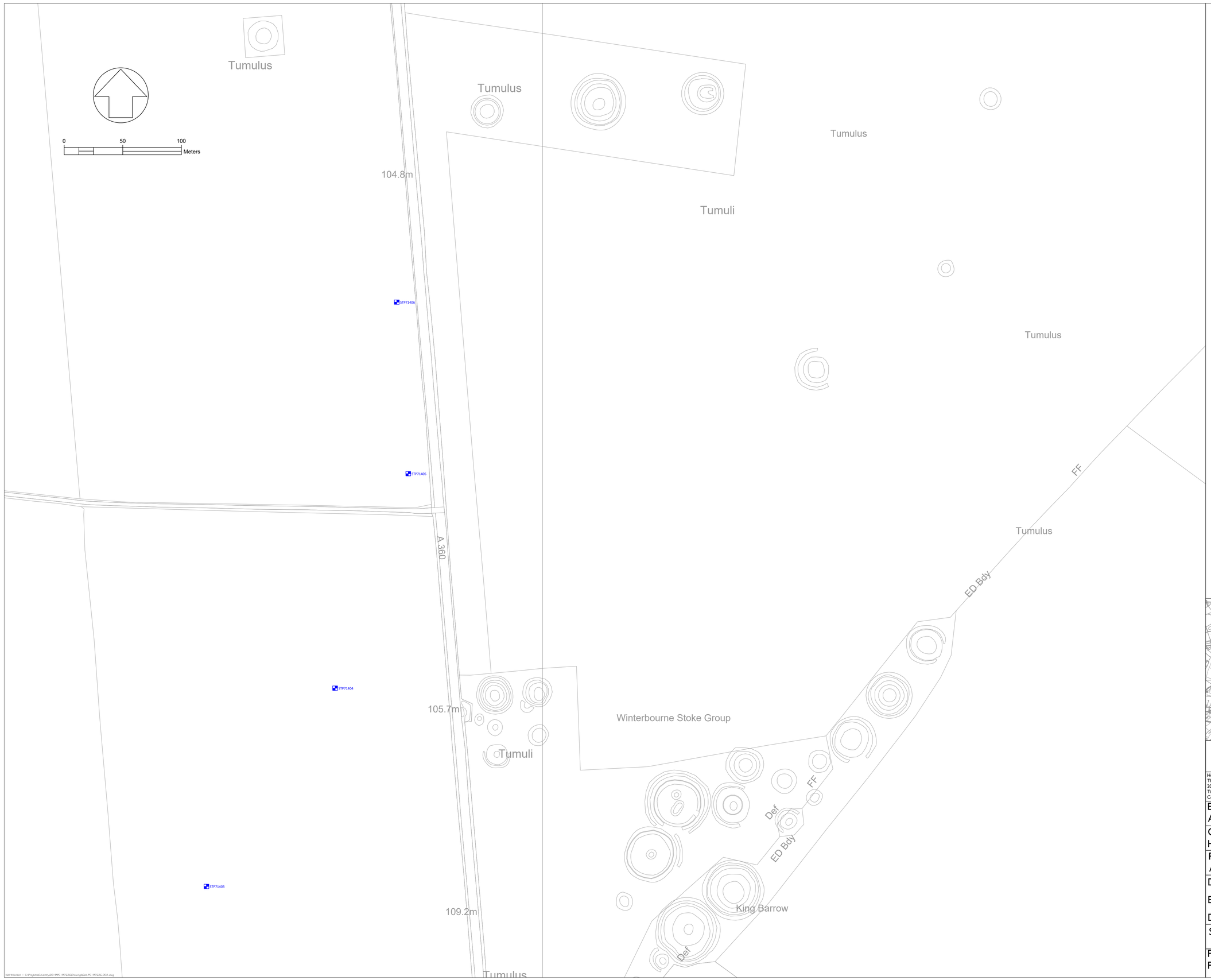

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STP70101	405806.4	140723.7	129.19
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STP70802	407941.8	141468.1	74.14
STP71101	408576.1	141347.1	86.08
STP71102	408626.0	141337.2	87.88
STP71401	409428.0	141459.5	108.01
STP71402	409563.4	141578.2	103.00
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STP71404	409823.1	141882.2	104.21
STP71405	409885.5	142065.1	100.74
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WS71501	409446.2	141098.9	114.99
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WS71503	409728.1	141016.0	117.56
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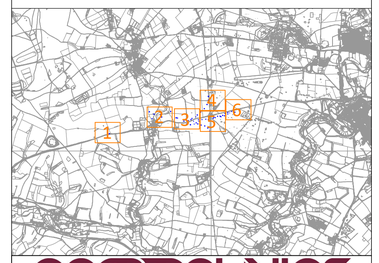

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Client:
Highways England

Project:
A303 Amesbury to Berwick Down - Phase 7a(ii)

Drawing Title:

EXPLORATORY HOLE LOCATION PLAN

Drawing 4 of 6

Scale: 1:1500@A1

Date:
October 2019

Project No:
PC197626

File Name:
Geo-PC197626-002(4)

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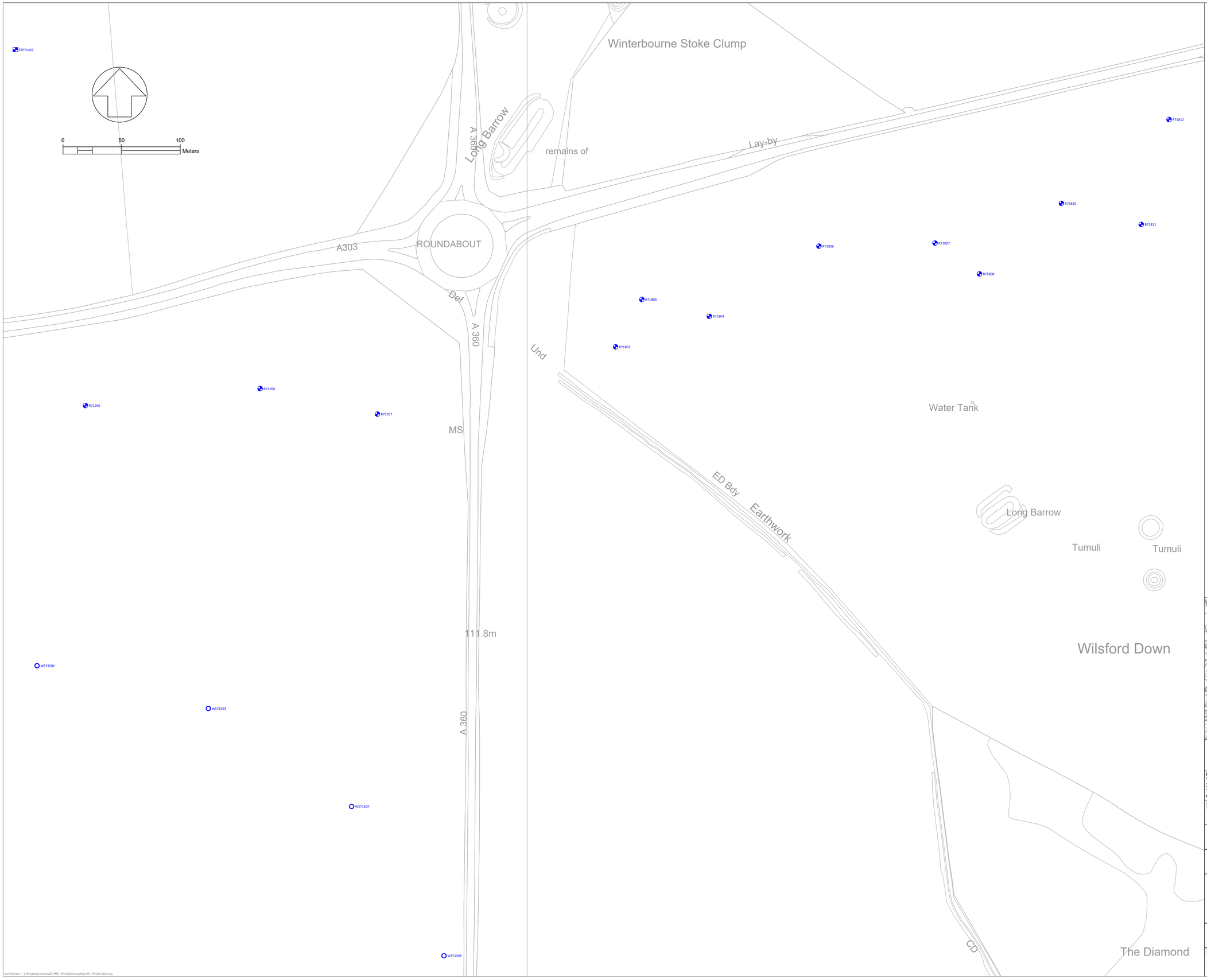

Key

- Rotary Borehole
- Trial Pit
- Dynamic Sample Borehole

Hole ID	Easting (mE)	Northing (mN)	Level (mOD)
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R71206	409772.2	141288.9	111.05
R71207	409872.3	141267.2	108.79
R71208	409214.9	141321.4	107.40
R71209	409374.0	141384.6	109.58
R71211	409279.3	141207.6	109.18
R71212	409384.8	141140.2	113.14
R71213	409494.9	141201.6	112.57
R71802	410075.5	141324.6	105.33
R71803	410097.9	141365.0	106.20
R71804	410155.5	141350.6	104.33
R71806	410249.0	141410.5	103.59
R71807	410348.1	141411.1	100.61
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R71810	410455.9	141447.0	99.01
R71811	410524.0	141429.0	99.95
R71812	410547.7	141518.5	98.58
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STP70101	405806.4	140723.7	129.19
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STP70801	407677.8	141493.5	74.89
STP70802	407941.8	141468.1	74.14
STP71101	408576.1	141347.1	86.08
STP71102	408626.0	141337.2	87.88
STP71401	409428.0	141459.5	108.01
STP71402	409563.4	141578.2	103.00
STP71403	409713.3	141713.1	103.57
STP71404	409823.1	141882.2	104.21
STP71405	409885.5	142065.1	100.74
STP71406	409875.7	142211.4	103.34
STP71602	409005.0	141093.5	106.32
STP71603	409152.4	141064.0	110.82
STP71604	409300.2	141091.3	112.83
STP72701	407491.8	141588.6	85.92
STP72702	407603.8	141311.7	73.12
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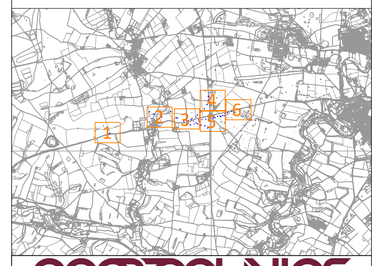
STP72705	408886.2	141208.5	98.74
WS71501	409446.2	141098.9	114.99
WS71502	409581.9	141052.5	118.94
WS71503	409728.1	141016.0	117.56
WS71504	409850.3	140932.4	113.49
WS71505	409929.1	140805.0	108.20



GEOTECHNICS
geotechnical and geoenvironmental specialists
Head Office
The Geotechnical Centre,
203 Torrington Avenue,
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Coventry CV4 9AP
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Engineer:
AECOM

Client:
Highways England

Project:
A303 Amesbury to Berwick Down - Phase 7a(ii)

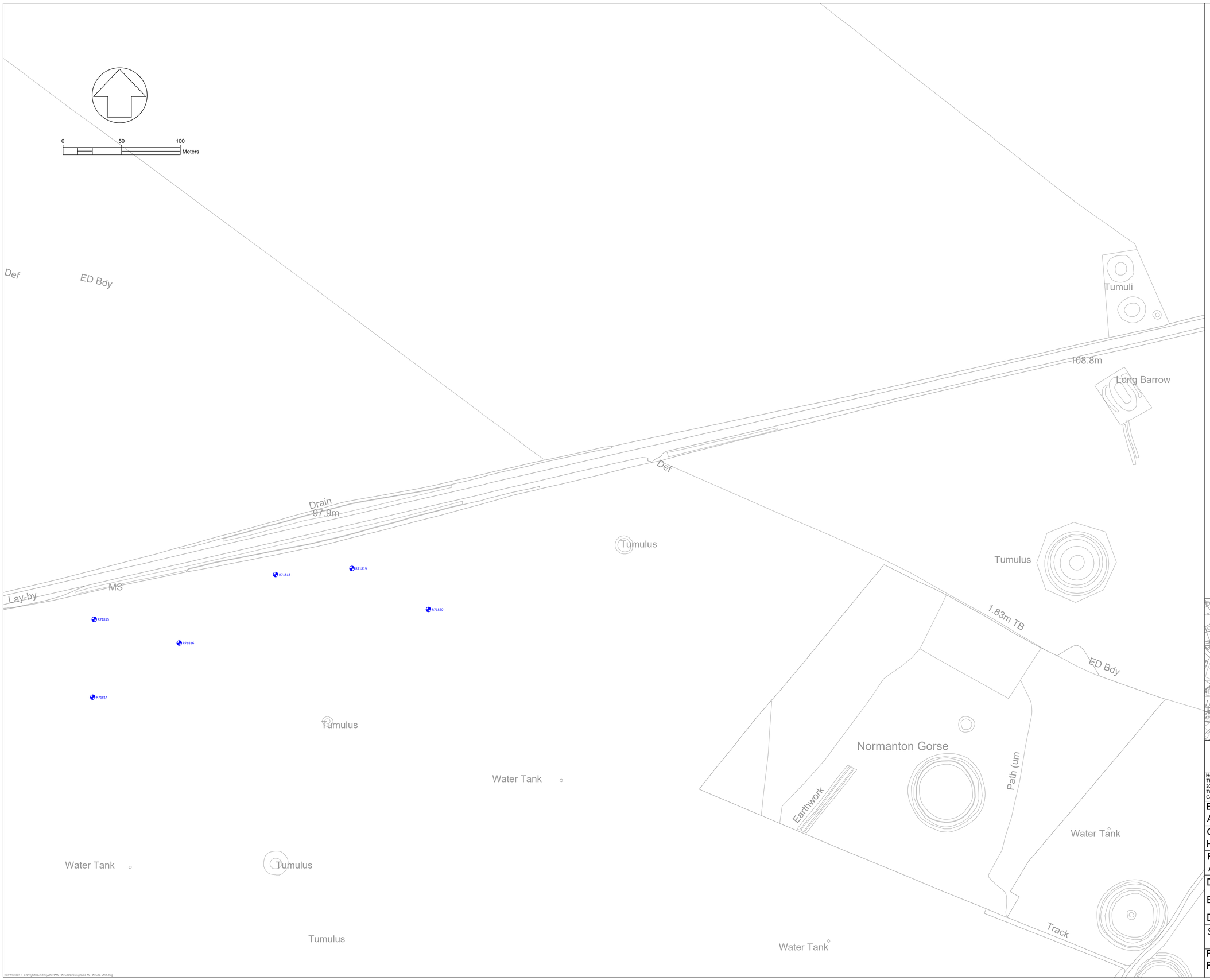
Drawing Title:

EXPLORATORY HOLE LOCATION PLAN

Drawing 5 of 6

Scale: 1:1500@A1	Date: October 2019
Project No: PC197626	File Name: Geo-PC197626-002(5)

Neil Wilkinson I: G:\Projects\Coventry\201\PC\197626\Drawings\Geo-PC\197626-002.dwg



Key

- Rotary Borehole
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Hole ID	Easting (mE)	Northing (mN)	Level (mOD)
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R71204	409473.1	141266.3	111.07
R71205	409623.2	141274.5	111.35
R71206	409772.2	141288.9	111.05
R71207	409872.3	141267.2	108.79
R71208	409214.9	141321.4	107.40
R71209	409374.0	141384.6	109.58
R71211	409279.3	141207.6	109.18
R71212	409384.8	141140.2	113.14
R71213	409494.9	141201.6	112.57
R71802	410075.5	141324.6	105.33
R71803	410097.9	141365.0	106.20
R71804	410155.5	141350.6	104.33
R71806	410249.0	141410.5	103.59
R71807	410348.1	141411.1	100.61
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R71810	410455.9	141447.0	99.01
R71811	410524.0	141429.0	99.95
R71812	410547.7	141518.5	98.58
R71814	410663.1	141496.1	97.45
R71815	410664.4	141562.4	97.36
R71816	410736.9	141542.3	95.74
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R71820	410949.5	141570.9	99.72
STP70101	405806.4	140723.7	129.19
STP70102	405875.9	140700.8	127.65
STP70801	407677.8	141493.5	74.89
STP70802	407941.8	141468.1	74.14
STP71101	408576.1	141347.1	86.08
STP71102	408626.0	141337.2	87.88
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STP71402	409563.4	141578.2	103.00
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WS71501	409446.2	141098.9	114.99
WS71502	409581.9	141052.5	118.94
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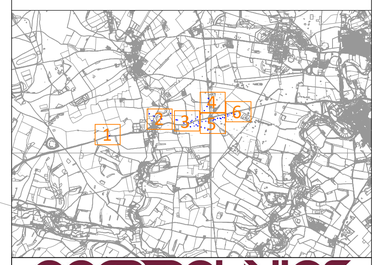

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Drawing 6 of 6

Scale: 1:1500@A1

Date:
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Project No:
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File Name:
Geo-PC197626-002(6)

Neil Wilkinson I G:\Projects\Coventry\2017\PC197626\Drawings\Geo-PC197626-002.dwg

APPENDIX 7

In Situ Permeability Test Results

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii) GI	Borehole	R71811
		Project No	PC197626
		Test No	1
Client	Highways England	Date	4th September 2019

Water Pressure Test in a Borehole in accordance with BS EN ISO 22282-3:2012

Borehole Details

Inclination		Vertical
Method of Drilling		Rotary Coring
Co-ordinates (m)	E	410524.0
	N	141429.0
Ground Level (m OD)		99.95
Depth of Borehole during test		7.00
Diameter of borehole over test section		0.142

Test Installation Details

Packers

Inflation Method	Nitrogen
Upper Packer	
Depth to Top (m)	4.00
Elevation of Top (m OD)	95.95
Inflation Pressure (kPa)	700.0
Lower Packer	
Depth to Top (m)	
Elevation of Top (m)	
Inflation Pressure (kPa)	

Flow Measurement

Method	Flow Meter
Units of Measurement	l/min

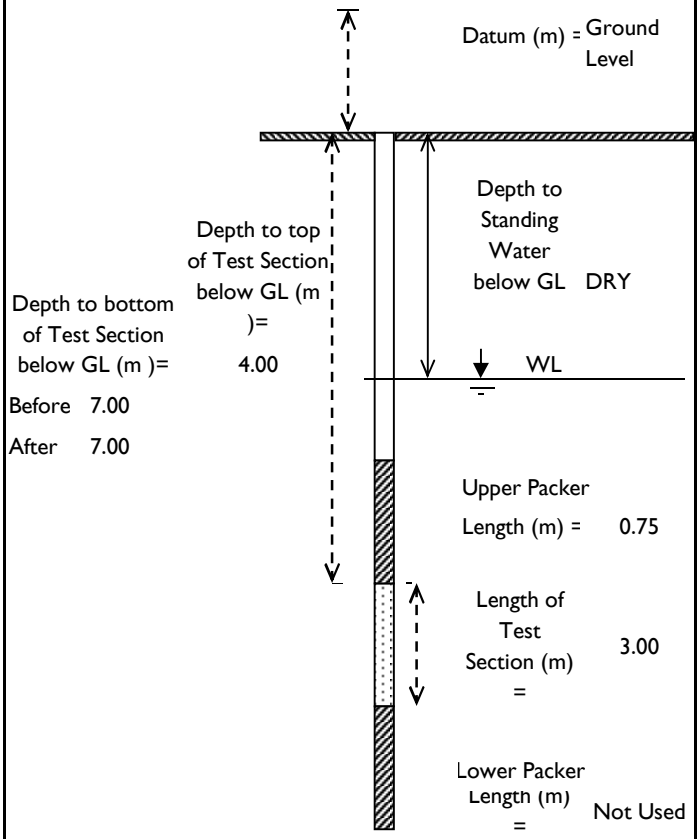
Test Pressure Measurement

Method	Direct (Diver)
Depth to Measuring Device (m)	4.65
Atmospheric Correction to Measuring Device (m of water)	0.00

Pump Used

GP 200M General Purpose Pump

Test Details



Initial Pressure in Test Section (m of water)	0.00
Final Pressure in Test Section (m of water)	N/A
Pressure at Top of Borehole	Atmospheric
Time at start of Test	16:08:00
Duration of Test (min)	8.0
Total Water Consumption (l)	334
Weather during Test	Dry and Sunny
Test Carried Out By	J Rix
Checked By	

Description of Test Section

Chalk

Remarks / Observations during Test

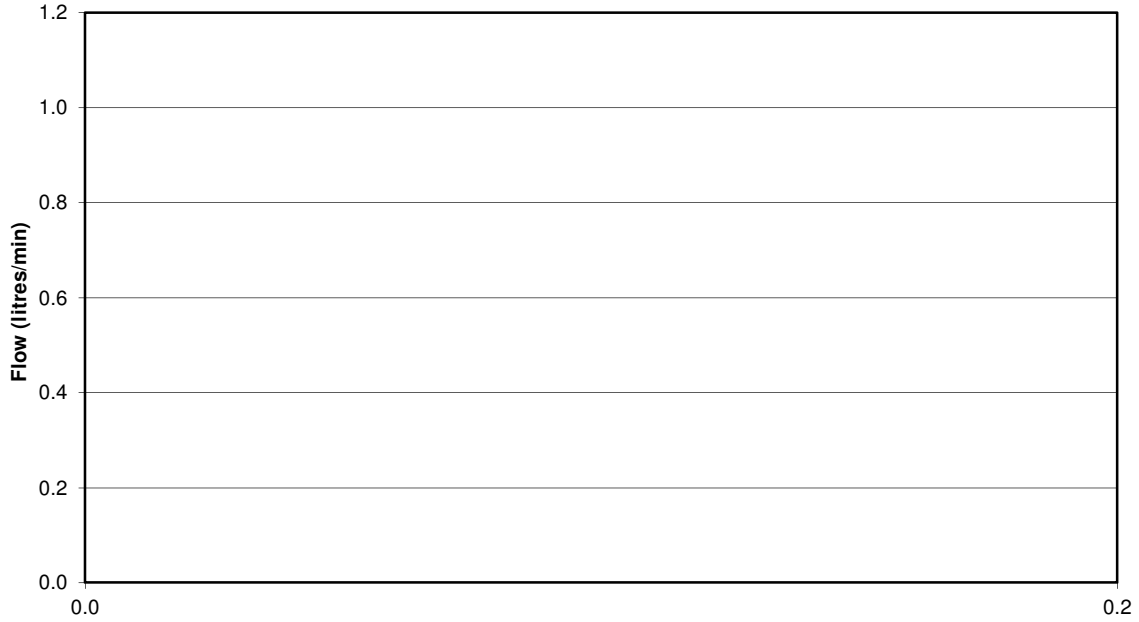
Test aborted due to being unable to seal test section using packer.

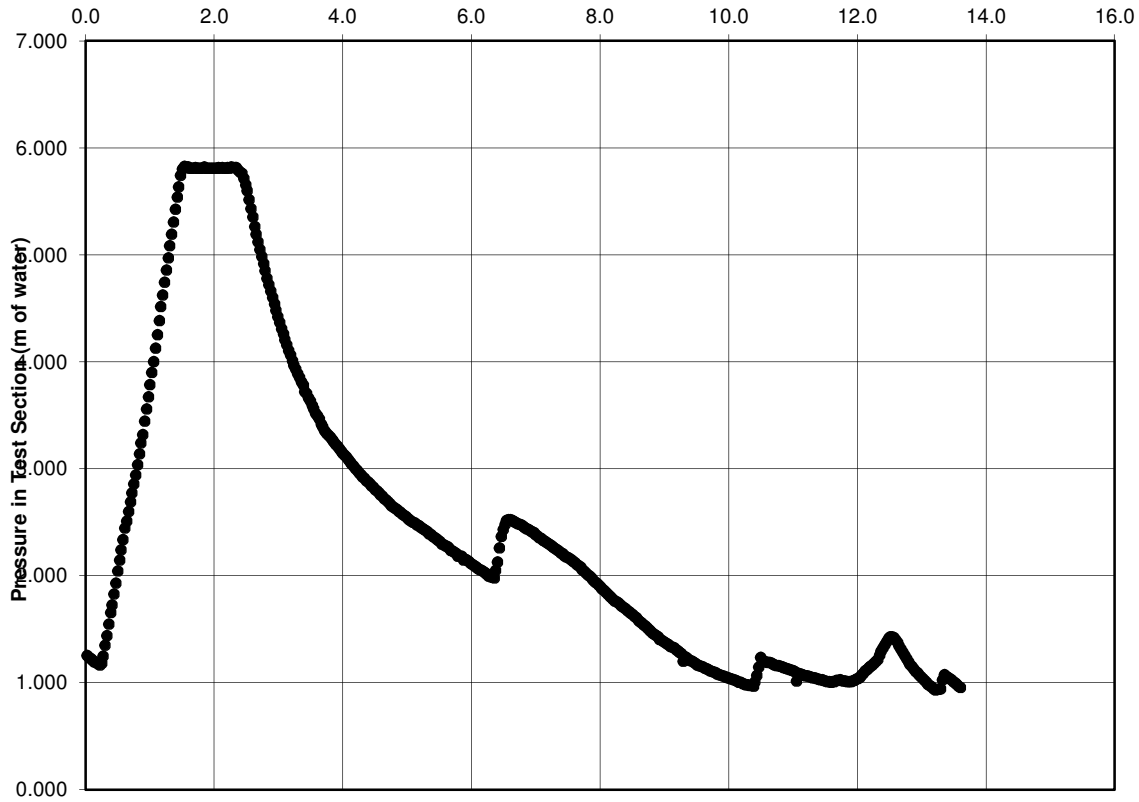
GEOTECHNICS

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii) GI	Borehole	R71811
		Project No	PC197626
		Test No	1
Client	Highways England	Date	4th September 201

Water Pressure Test in a Borehole in accordance with BS EN ISO 22282-3:2012





GEOTECHNICS

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii) GI	Borehole	R71811
		Project No	PC197626
		Test No	2
Client	Highways England	Date	4th September 2019

Water Pressure Test in a Borehole in accordance with BS EN ISO 22282-3:2012

Borehole Details

Inclination		Vertical
Method of Drilling		Rotary Coring
Co-ordinates (m)	E	410524.0
	N	141429.0
Ground Level (m OD)		99.95
Depth of Borehole during test		7.00
Diameter of borehole over test section		0.142

Test Installation Details

Packers

Inflation Method	Nitrogen
Upper Packer	
Depth to Top (m)	4.25
Elevation of Top (m OD)	95.70
Inflation Pressure (kPa)	700.0
Lower Packer	
Depth to Top (m)	
Elevation of Top (m)	
Inflation Pressure (kPa)	

Flow Measurement

Method	Flow Meter
Units of Measurement	l/min

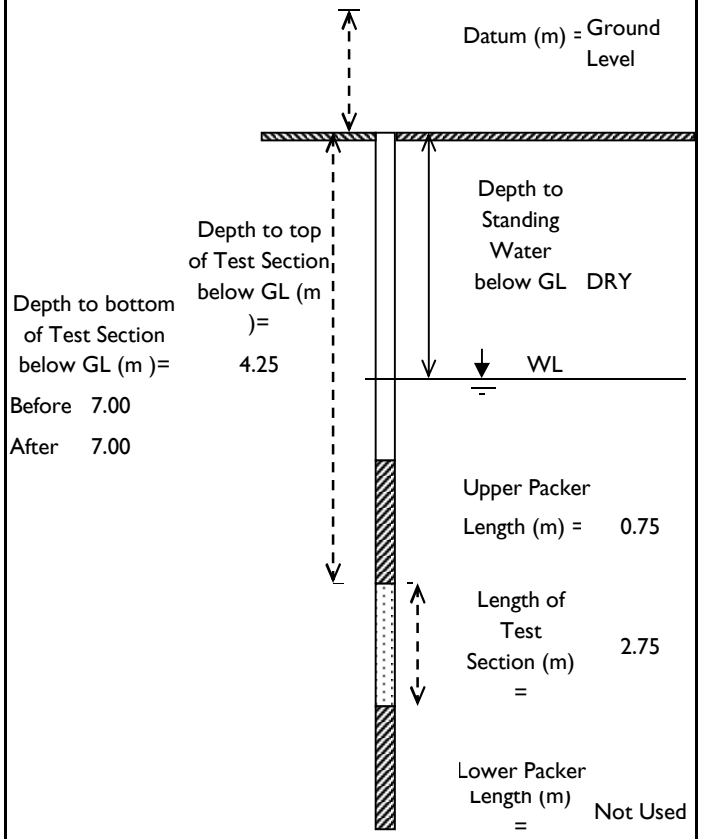
Test Pressure Measurement

Method	Direct (Diver)
Depth to Measuring Device (m)	4.90
Atmospheric Correction to Measuring Device (m of water)	0.00

Pump Used

GP 200M General Purpose Pump

Test Details



Initial Pressure in Test Section (m of water)	0.00
Final Pressure in Test Section (m of water)	N/A
Pressure at Top of Borehole	Atmospheric
Time at start of Test	16:22:00
Duration of Test (min)	3.0
Total Water Consumption (l)	134
Weather during Test	Dry and Sunny
Test Carried Out By	J Rix
Checked By	

Description of Test Section

Chalk

Remarks / Observations during Test

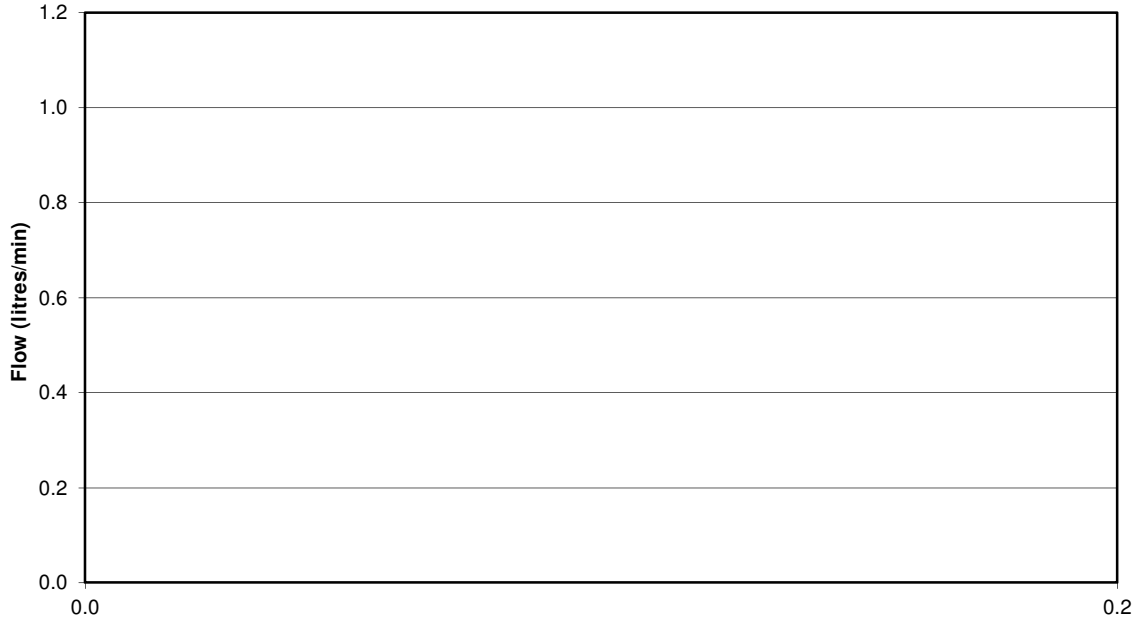
Test aborted due to being unable to seal test section using packer.

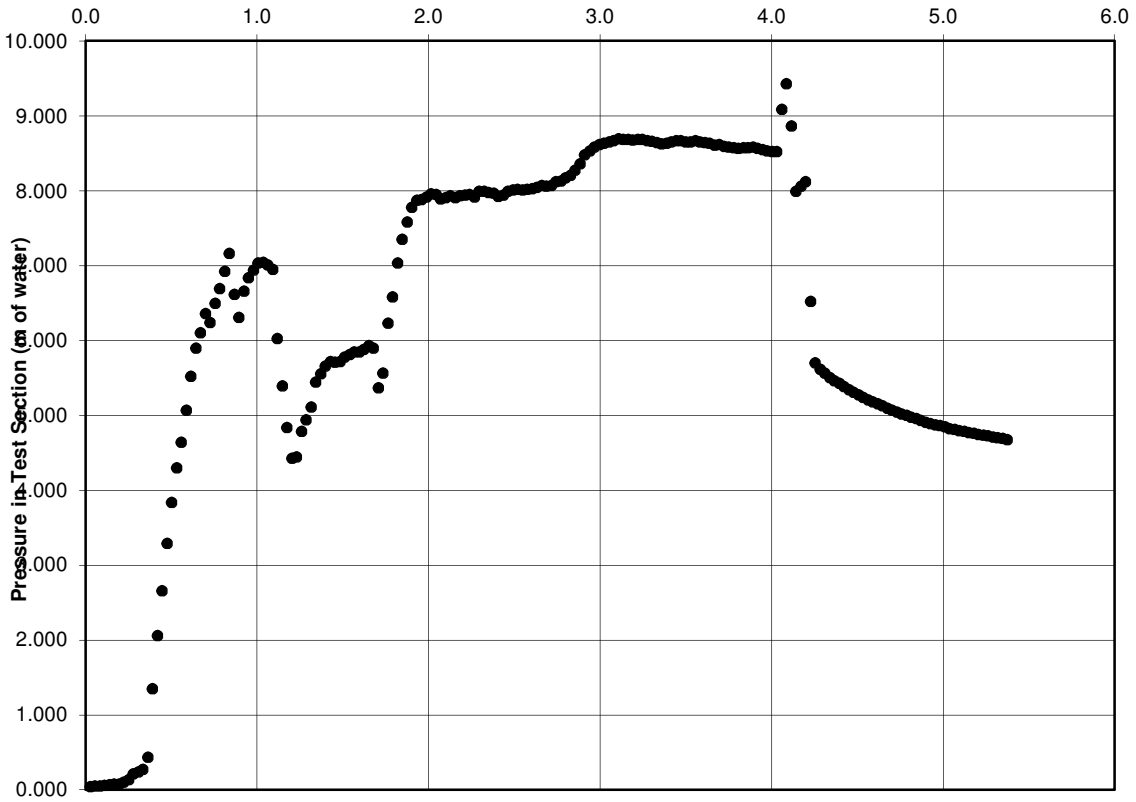
GEOTECHNICS

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii) GI	Borehole	R71811
		Project No	PC197626
		Test No	2
Client	Highways England	Date	4th September 201

Water Pressure Test in a Borehole in accordance with BS EN ISO 22282-3:2012





GEOTECHNICS

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii) GI	Borehole	R71811
		Project No	PC197626
		Test No	3
Client	Highways England	Date	5th September 2019

Water Pressure Test in a Borehole in accordance with BS EN ISO 22282-3:2012

Borehole Details

Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	410524.0
N	141429.0
Ground Level (m OD)	99.95
Depth of Borehole during test	13.00
Diameter of borehole over test section	0.142

Test Installation Details

Packers

Inflation Method	Nitrogen
Upper Packer	
Depth to Top (m)	10.00
Elevation of Top (m OD)	89.95
Inflation Pressure (kPa)	700.0
Lower Packer	
Depth to Top (m)	
Elevation of Top (m)	
Inflation Pressure (kPa)	

Flow Measurement

Method	Flow Meter
Units of Measurement	l/min

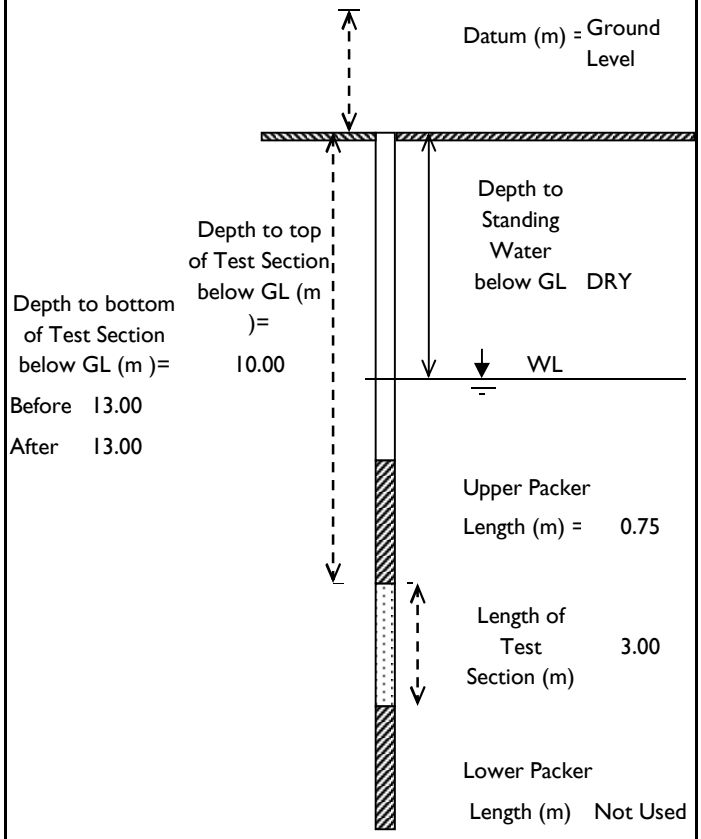
Test Pressure Measurement

Method	Direct (Diver)
Depth to Measuring Device (m)	10.65
Atmospheric Correction to Measuring Device (m of water)	0.00

Pump Used

GP 200M General Purpose Pump

Test Details



Initial Pressure in Test Section (m of water)	0.00
Final Pressure in Test Section (m of water)	N/A
Pressure at Top of Borehole	Atmospheric
Time at start of Test	14:26:00
Duration of Test (min)	135.2
Total Water Consumption (l)	5099
Weather during Test	Dry and Sunny
Test Carried Out By	J Rix
Checked By	

Description of Test Section

Chalk

Remarks / Observations during Test

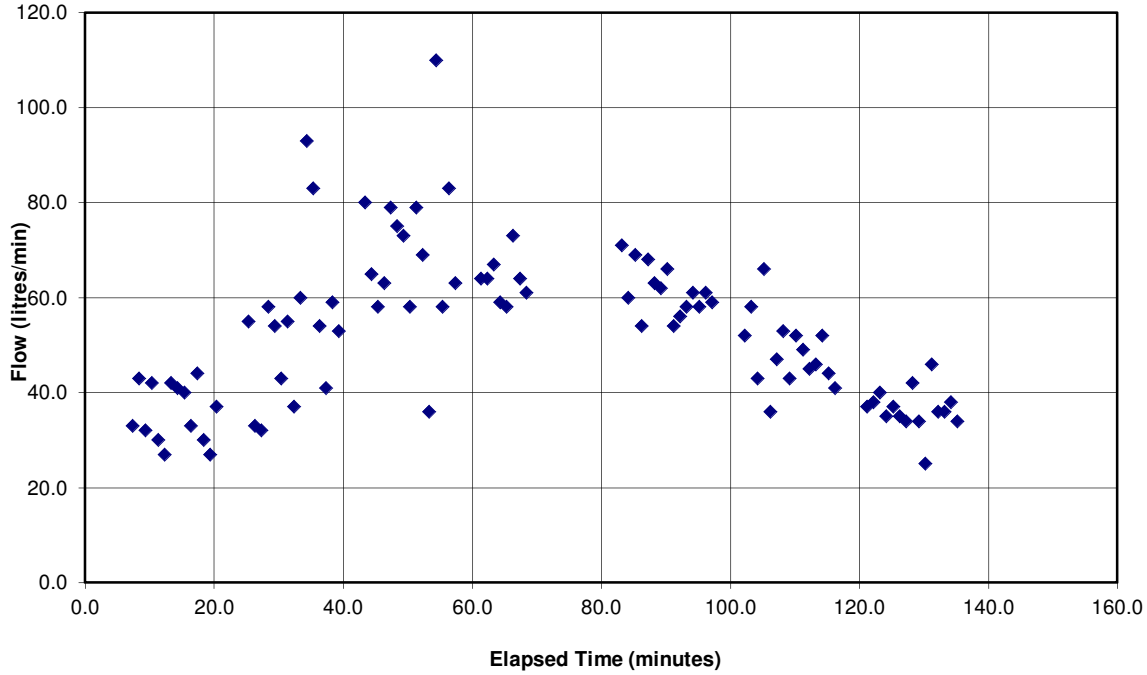
Test continued on 9th September 2019 due to lack of water half way through original test.

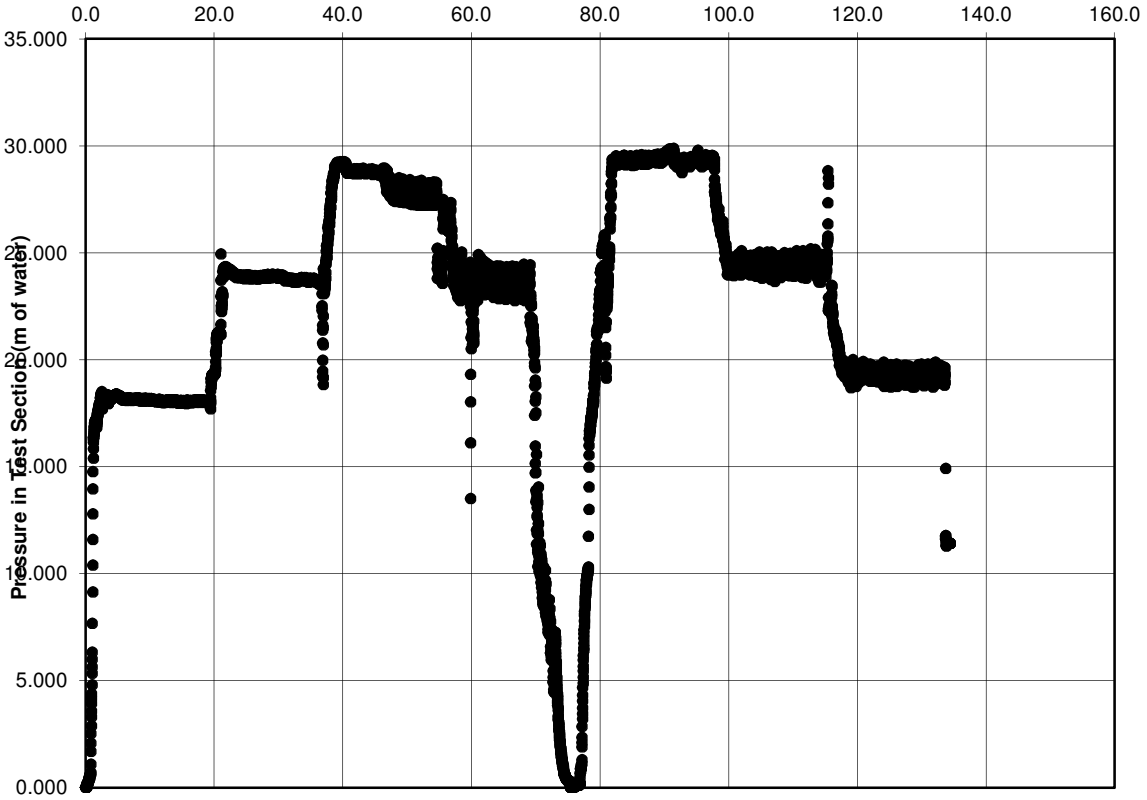
GEOTECHNICS

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii) GI	Borehole	R71811
		Project No	PC197626
		Test No	3
Client	Highways England	Date	5th September 201

Water Pressure Test in a Borehole in accordance with BS EN ISO 22282-3:2012





GEOTECHNICS

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii) GI	Borehole	R71811
		Project No	PC197626
		Test No	4
Client	Highways England	Date	10th September 2019

Water Pressure Test in a Borehole in accordance with BS EN ISO 22282-3:2012

Borehole Details

Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	410524.0
N	141429.0
Ground Level (m OD)	99.95
Depth of Borehole during test	19.00
Diameter of borehole over test section	0.142

Test Installation Details

Packers

Inflation Method	Nitrogen
Upper Packer	
Depth to Top (m)	16.00
Elevation of Top (m OD)	83.95
Inflation Pressure (kPa)	700.0
Lower Packer	
Depth to Top (m)	
Elevation of Top (m)	
Inflation Pressure (kPa)	

Flow Measurement

Method	Flow Meter
Units of Measurement	l/min

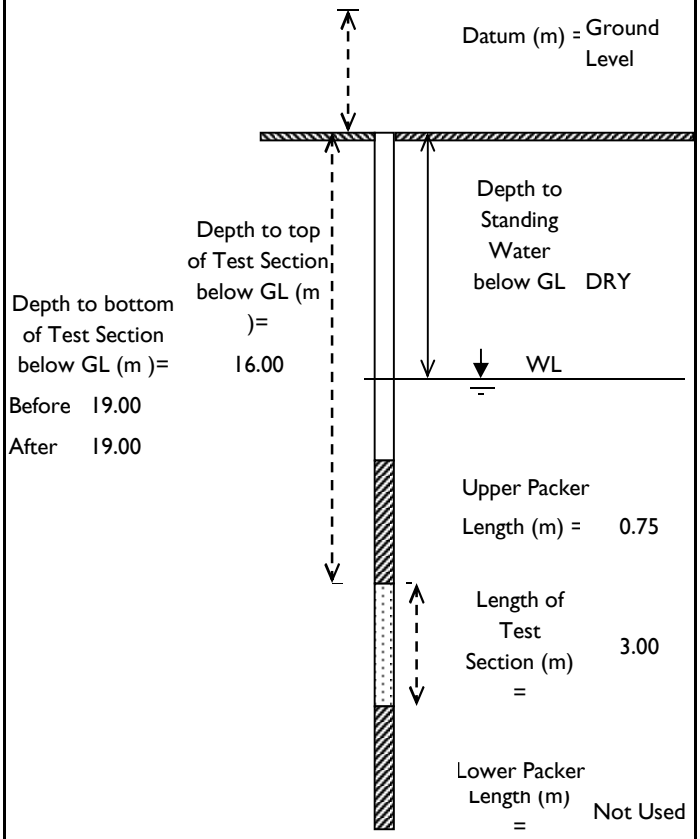
Test Pressure Measurement

Method	Direct (Diver)
Depth to Measuring Device (m)	16.65
Atmospheric Correction to Measuring Device (m of water)	0.00

Pump Used

GP 200M General Purpose Pump

Test Details



Initial Pressure in Test Section (m of water)	0.00
Final Pressure in Test Section (m of water)	N/A
Pressure at Top of Borehole	Atmospheric
Time at start of Test	09:44:54
Duration of Test (min)	116.1
Total Water Consumption (l)	667
Weather during Test	Dry and Sunny
Test Carried Out By	J Rix
Checked By	

Description of Test Section

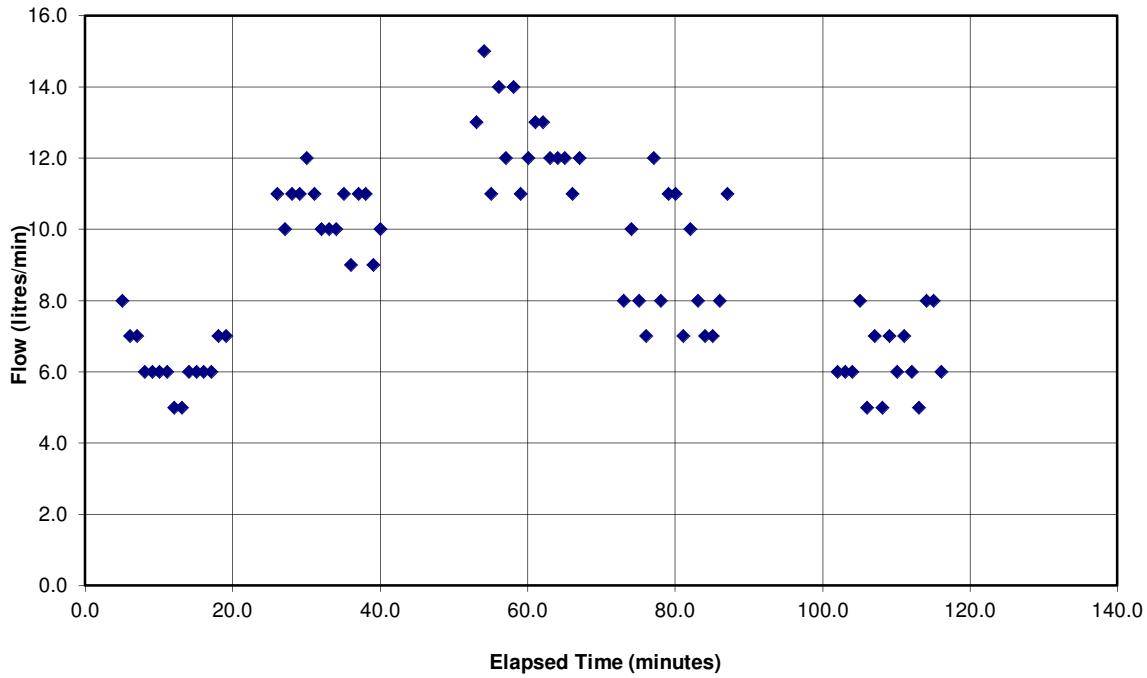
Chalk

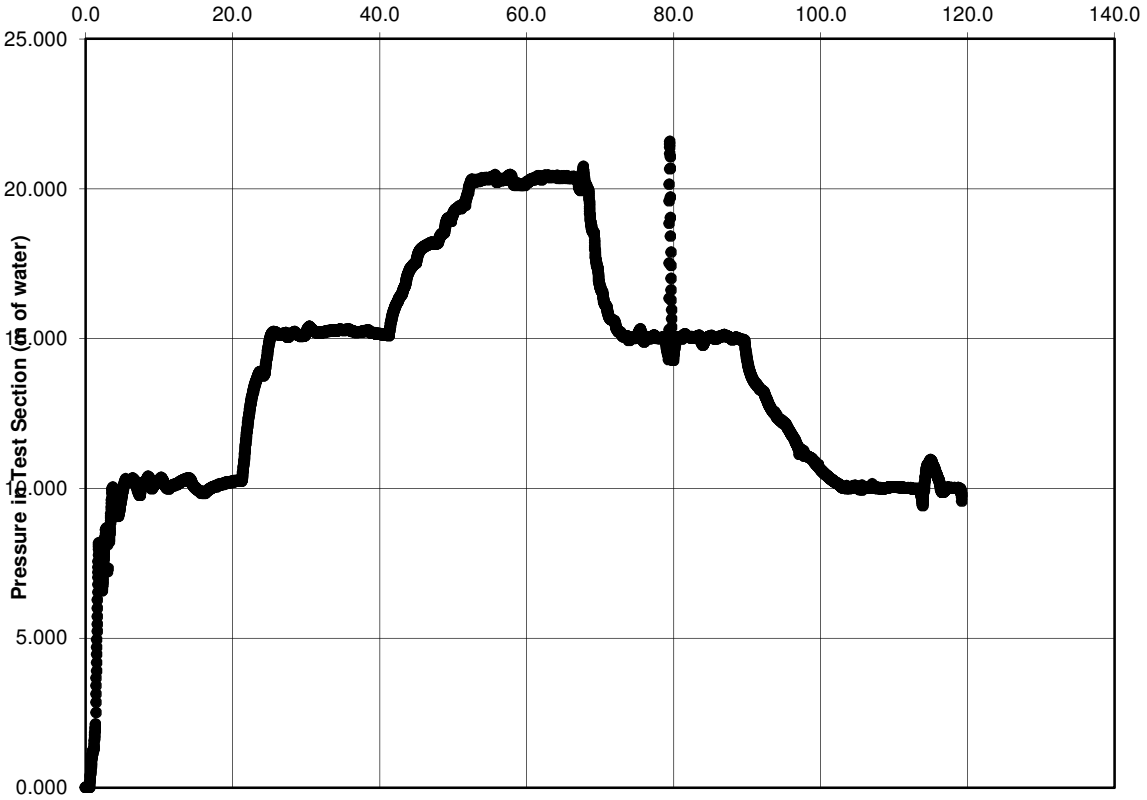
Remarks / Observations during Test

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii) GI	Borehole	R71811
		Project No	PC197626
		Test No	4
Client	Highways England	Date	10th September 20

Water Pressure Test in a Borehole in accordance with BS EN ISO 22282-3:2012





GEOTECHNICS

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71208
		Project No	PC197626
		Test No	1
Client	Highways England	Date	09/09/2019

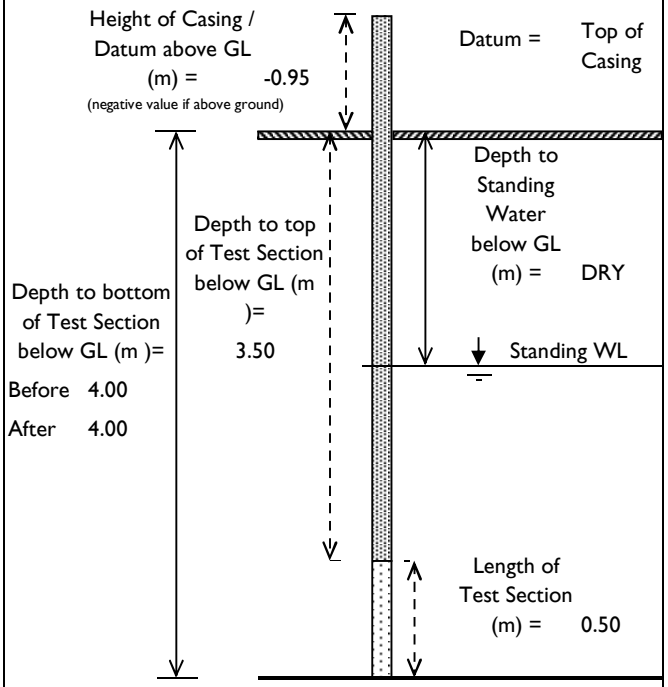
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409214.9
	N 141321.4
Level (m OD)	107.40

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00	40.000	4.33
0.5	1.00		
1.0	1.40		
1.5	1.80		
2.0	1.95		
2.5	2.10		
3.0	2.23		
3.5	2.41		
4.0	2.48		
4.5	2.57		
5.0	2.65		
6.0	2.81		
7.0	2.92		
8.0	3.04		
9.0	3.14		
10.0	3.23		
11.0	3.31		
12.0	3.38		
13.0	3.44		
14.0	3.51		
15.0	3.59		
20.0	3.79		
25.0	4.00		
30.0	4.13		
35.0	4.27		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	40.0	mins

Weather during Test	Raining
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk.

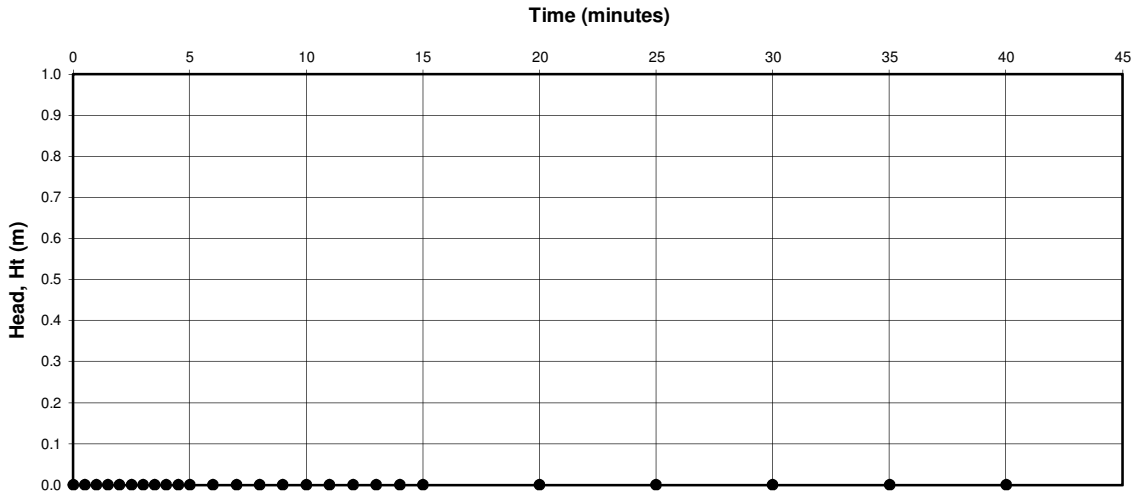
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71208
		Project No	PC197626
		Test No	1
Client	Highways England	Date	09/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-0.95		
0.5	1.00	0.05		
1.0	1.40	0.45		
1.5	1.80	0.85		
2.0	1.95	1.00		
2.5	2.10	1.15		
3.0	2.23	1.28		
3.5	2.41	1.46		
4.0	2.48	1.53		
4.5	2.57	1.62		
5.0	2.65	1.70		
6.0	2.81	1.86		
7.0	2.92	1.97		
8.0	3.04	2.09		
9.0	3.14	2.19		
10.0	3.23	2.28		
11.0	3.31	2.36		
12.0	3.38	2.43		
13.0	3.44	2.49		
14.0	3.51	2.56		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
15.0	3.59	2.64		
20.0	3.79	2.84		
25.0	4.00	3.05		
30.0	4.13	3.18		
35.0	4.27	3.32		
40.0	4.33	3.38		



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71208
		Project No	PC197626
		Test No	2
Client	Highways England	Date	09/09/2019

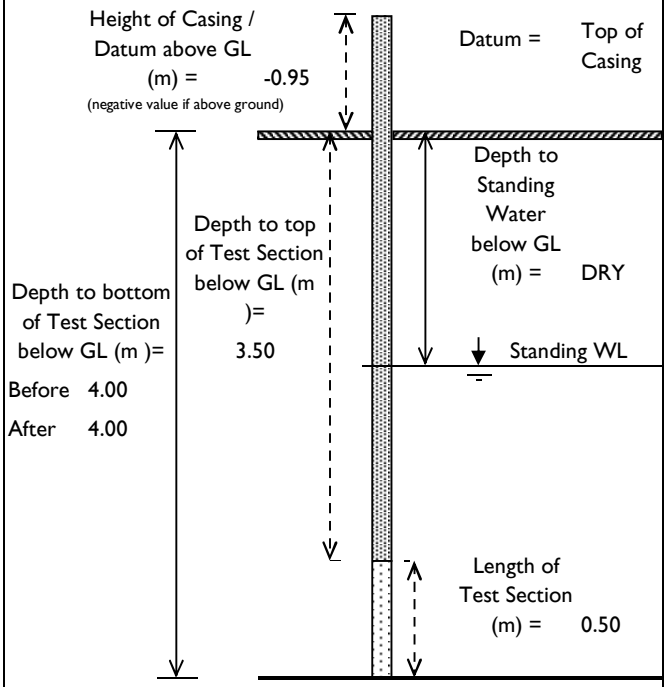
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409214.9
	N 141321.4
Level (m OD)	107.40

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00	40.000	4.55
0.5	1.30		
1.0	1.50		
1.5	1.66		
2.0	1.83		
2.5	1.98		
3.0	2.14		
3.5	2.26		
4.0	2.40		
4.5	2.55		
5.0	2.66		
6.0	2.81		
7.0	2.94		
8.0	3.09		
9.0	3.21		
10.0	3.32		
11.0	3.43		
12.0	3.53		
13.0	3.61		
14.0	3.71		
15.0	3.78		
20.0	4.05		
25.0	4.27		
30.0	4.40		
35.0	4.51		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	40.0	mins

Weather during Test	Raining
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk

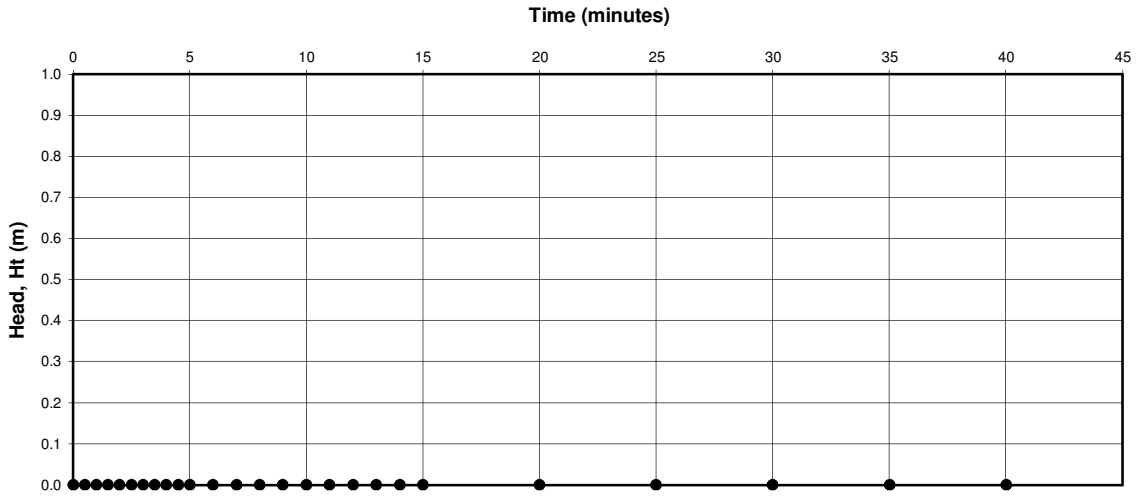
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71208
		Project No	PC197626
		Test No	2
Client	Highways England	Date	09/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-0.95		
0.5	1.30	0.35		
1.0	1.50	0.55		
1.5	1.66	0.71		
2.0	1.83	0.88		
2.5	1.98	1.03		
3.0	2.14	1.19		
3.5	2.26	1.31		
4.0	2.40	1.45		
4.5	2.55	1.60		
5.0	2.66	1.71		
6.0	2.81	1.86		
7.0	2.94	1.99		
8.0	3.09	2.14		
9.0	3.21	2.26		
10.0	3.32	2.37		
11.0	3.43	2.48		
12.0	3.53	2.58		
13.0	3.61	2.66		
14.0	3.71	2.76		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
15.0	3.78	2.83		
20.0	4.05	3.10		
25.0	4.27	3.32		
30.0	4.40	3.45		
35.0	4.51	3.56		
40.0	4.55	3.60		



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71208
		Project No	PC197626
		Test No	3
Client	Highways England	Date	09/09/2019

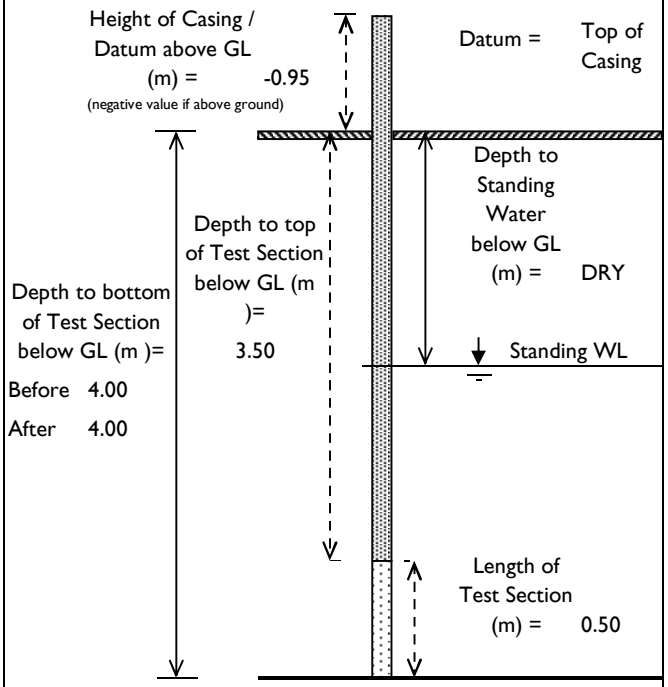
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409214.9
	N 141321.4
Level (m OD)	107.40

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00	40.000	4.59
0.5	1.28		
1.0	1.63		
1.5	1.69		
2.0	1.84		
2.5	2.08		
3.0	2.20		
3.5	2.36		
4.0	2.47		
4.5	2.59		
5.0	2.71		
6.0	2.91		
7.0	3.07		
8.0	3.21		
9.0	3.33		
10.0	3.45		
11.0	3.57		
12.0	3.69		
13.0	3.76		
14.0	3.85		
15.0	3.93		
20.0	4.20		
25.0	4.30		
30.0	4.45		
35.0	4.55		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	40.0	mins

Weather during Test	Raining
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk

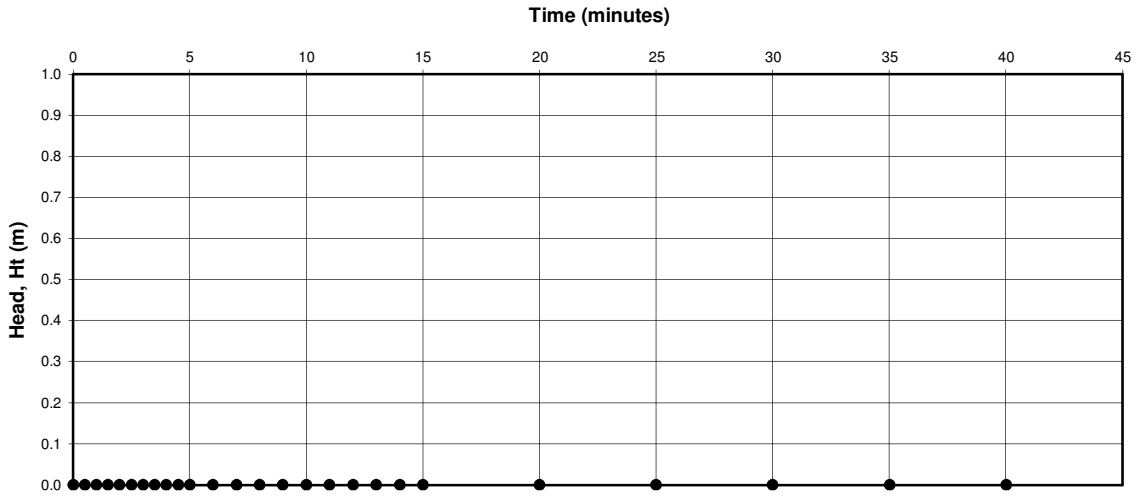
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71208
		Project No	PC197626
		Test No	3
Client	Highways England	Date	09/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-0.95		
0.5	1.28	0.33		
1.0	1.63	0.68		
1.5	1.69	0.74		
2.0	1.84	0.89		
2.5	2.08	1.13		
3.0	2.20	1.25		
3.5	2.36	1.41		
4.0	2.47	1.52		
4.5	2.59	1.64		
5.0	2.71	1.76		
6.0	2.91	1.96		
7.0	3.07	2.12		
8.0	3.21	2.26		
9.0	3.33	2.38		
10.0	3.45	2.50		
11.0	3.57	2.62		
12.0	3.69	2.74		
13.0	3.76	2.81		
14.0	3.85	2.90		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
15.0	3.93	2.98		
20.0	4.20	3.25		
25.0	4.30	3.35		
30.0	4.45	3.50		
35.0	4.55	3.60		
40.0	4.59	3.64		



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71211
		Project No	PC197626
		Test No	1
Client	Highways England	Date	11/09/2019

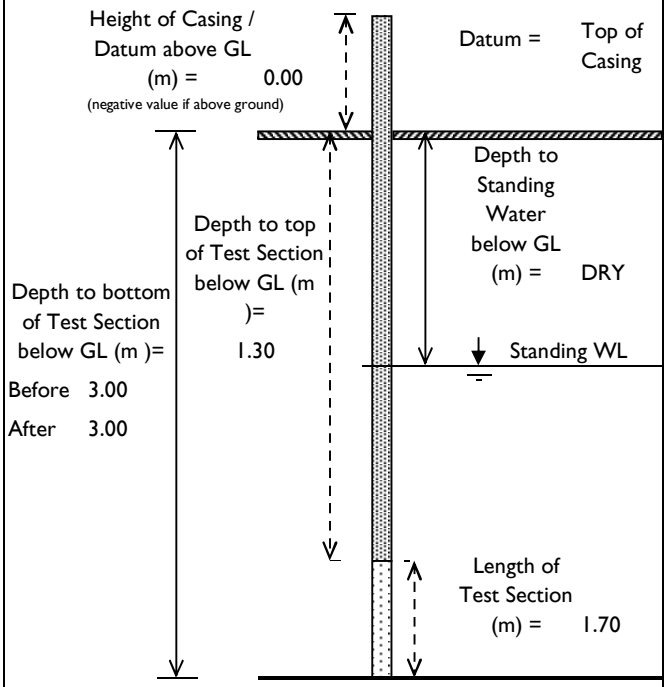
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409279.3
	N 141207.6
Level (m OD)	109.18

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
1.0	0.17		
2.0	0.18		
3.0	0.19		
4.0	0.21		
5.0	0.22		
10.0	0.34		
15.0	0.60		
20.0	0.78		
25.0	0.87		
30.0	0.92		
45.0	1.05		
60.0	1.15		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	60.0	mins

Weather during Test	Dry
Test Carried Out By	E. Demanou
Test Checked By	C. Lange
Description of Test Section	Chalk

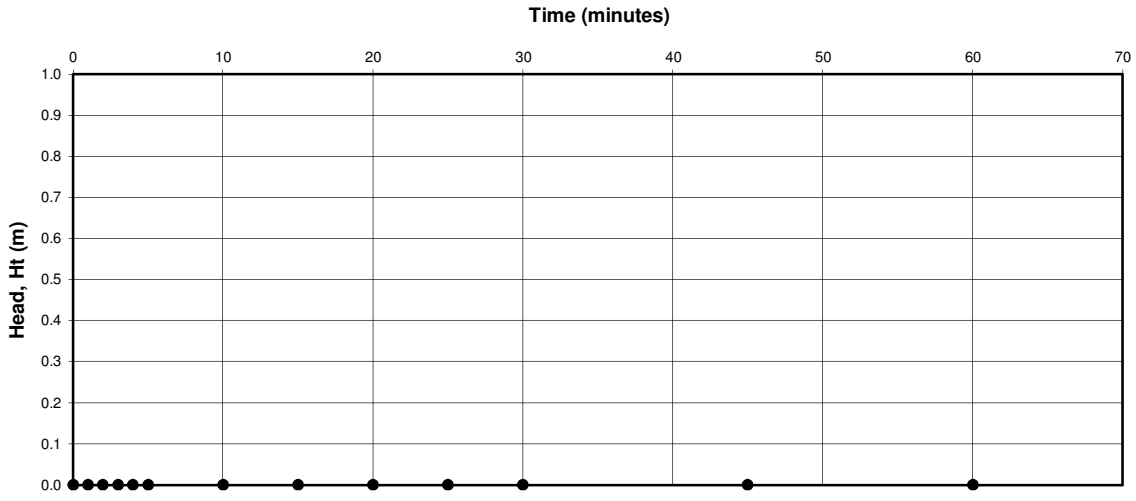
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71211
		Project No	PC197626
		Test No	1
Client	Highways England	Date	11/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	0.00		
1.0	0.17	0.17		
2.0	0.18	0.18		
3.0	0.19	0.19		
4.0	0.21	0.21		
5.0	0.22	0.22		
10.0	0.34	0.34		
15.0	0.60	0.60		
20.0	0.78	0.78		
25.0	0.87	0.87		
30.0	0.92	0.92		
45.0	1.05	1.05		
60.0	1.15	1.15		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71211
		Project No	PC197626
		Test No	2
Client	Highways England	Date	11/09/2019

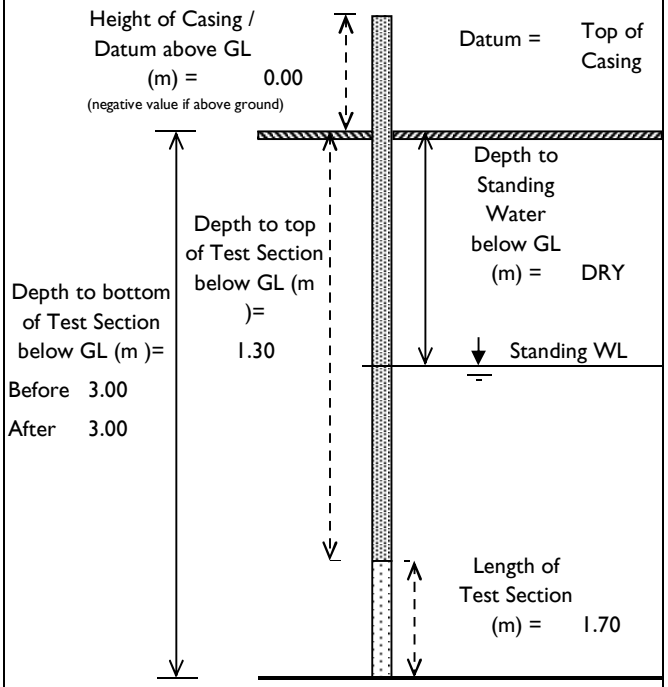
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409279.3
	N 141207.6
Level (m OD)	109.18

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
1.0	0.12		
2.0	0.13		
3.0	0.14		
4.0	0.15		
5.0	0.16		
10.0	0.24		
15.0	0.51		
20.0	0.77		
25.0	0.91		
30.0	1.00		
45.0	1.21		
60.0	1.32		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	60.0	mins

Weather during Test	Dry
Test Carried Out By	E. Demanou
Test Checked By	C. Lange
Description of Test Section	Chalk

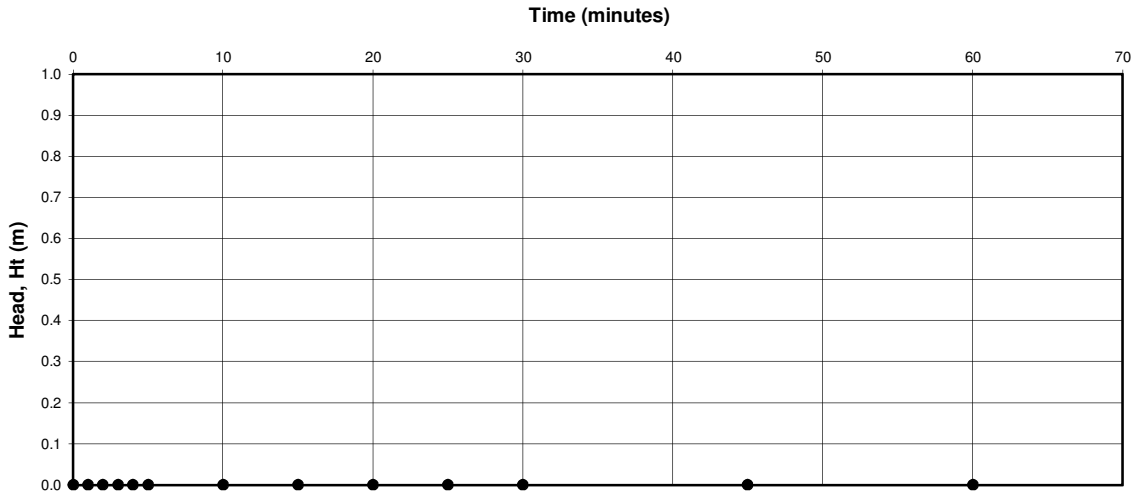
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71211
		Project No	PC197626
		Test No	2
Client	Highways England	Date	11/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	0.00		
1.0	0.12	0.12		
2.0	0.13	0.13		
3.0	0.14	0.14		
4.0	0.15	0.15		
5.0	0.16	0.16		
10.0	0.24	0.24		
15.0	0.51	0.51		
20.0	0.77	0.77		
25.0	0.91	0.91		
30.0	1.00	1.00		
45.0	1.21	1.21		
60.0	1.32	1.32		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71211
		Project No	PC197626
		Test No	3
Client	Highways England	Date	11/09/2019

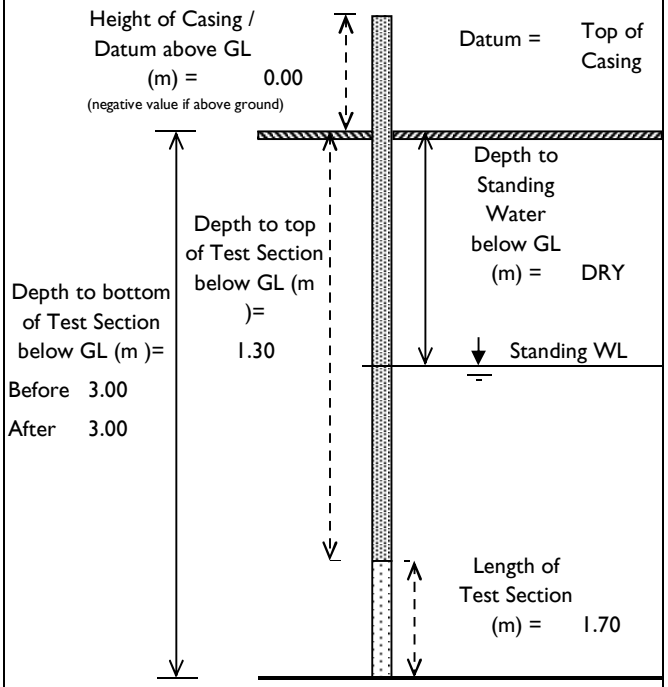
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409279.3
	N 141207.6
Level (m OD)	109.18

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
1.0	0.09		
2.0	0.11		
3.0	0.12		
4.0	0.13		
5.0	0.15		
10.0	0.22		
15.0	0.49		
20.0	0.74		
25.0	0.95		
30.0	1.10		
45.0	1.33		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	45.0	mins

Weather during Test	Dry
Test Carried Out By	E. Demanou
Test Checked By	C. Lange
Description of Test Section	Chalk

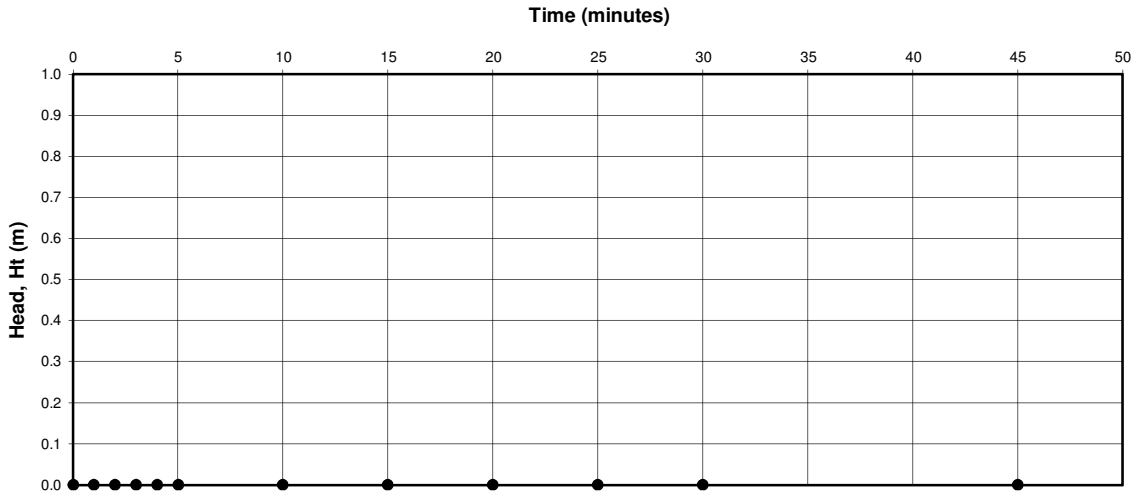
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71211
		Project No	PC197626
		Test No	3
Client	Highways England	Date	11/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	0.00		
1.0	0.09	0.09		
2.0	0.11	0.11		
3.0	0.12	0.12		
4.0	0.13	0.13		
5.0	0.15	0.15		
10.0	0.22	0.22		
15.0	0.49	0.49		
20.0	0.74	0.74		
25.0	0.95	0.95		
30.0	1.10	1.10		
45.0	1.33	1.33		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71213
		Project No	PC197626
		Test No	1
Client	Highways England	Date	17/09/2019

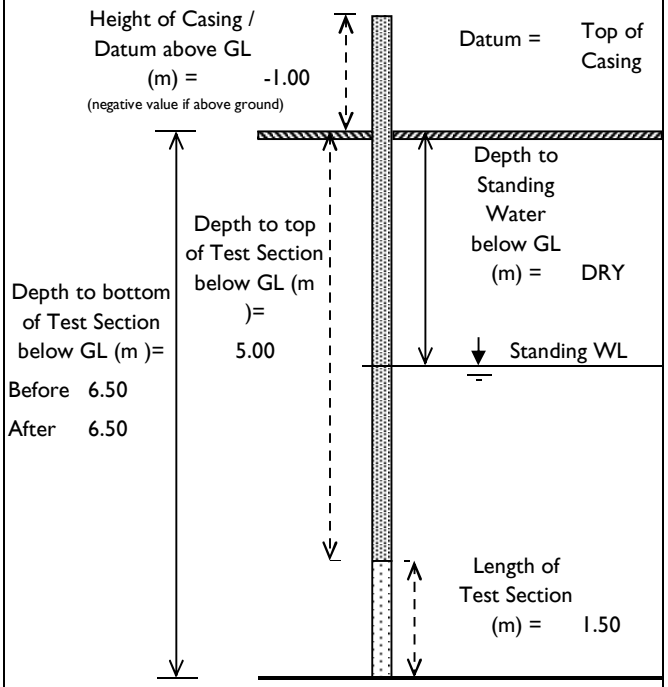
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409494.9
	N 141201.6
Level (m OD)	112.57

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
0.5	1.21		
1.0	3.25		
1.5	4.13		
2.0	4.78		
2.5	5.13		
3.0	5.49		
3.5	5.70		
4.0	5.88		
4.5	6.03		
5.0	6.10		
6.0	6.21		
7.0	6.28		
8.0	6.34		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	8.0	mins

Weather during Test	Dry
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk

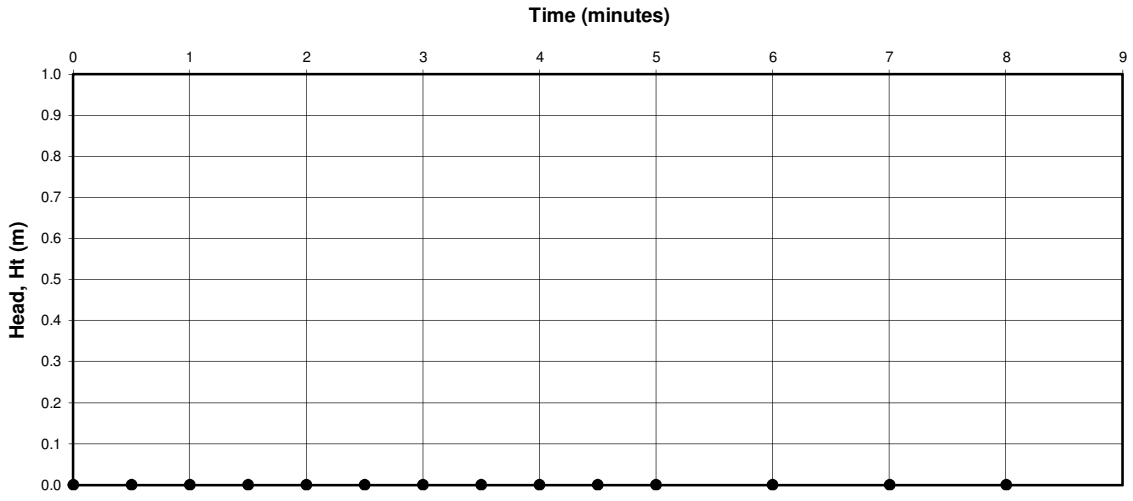
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71213
		Project No	PC197626
		Test No	1
Client	Highways England	Date	17/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-1.00		
0.5	1.21	0.21		
1.0	3.25	2.25		
1.5	4.13	3.13		
2.0	4.78	3.78		
2.5	5.13	4.13		
3.0	5.49	4.49		
3.5	5.70	4.70		
4.0	5.88	4.88		
4.5	6.03	5.03		
5.0	6.10	5.10		
6.0	6.21	5.21		
7.0	6.28	5.28		
8.0	6.34	5.34		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71213
		Project No	PC197626
		Test No	2
Client	Highways England	Date	17/09/2019

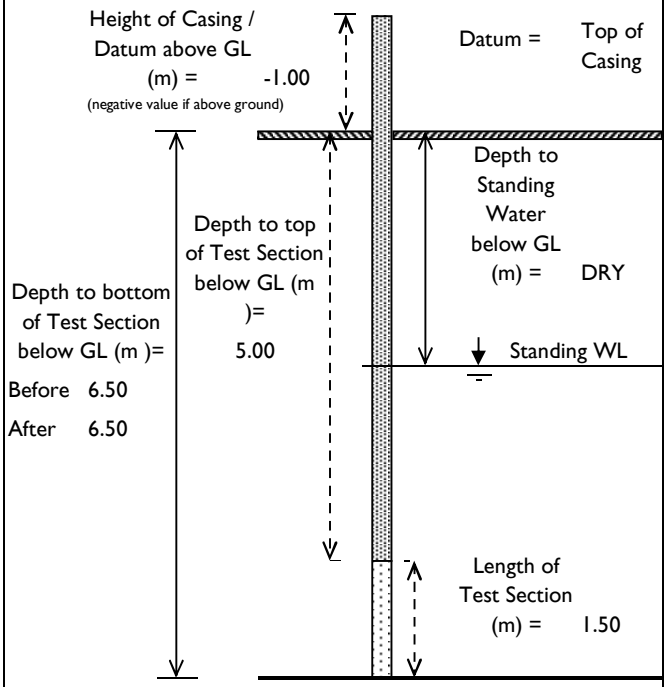
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409494.9
	N 141201.6
Level (m OD)	112.57

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
0.5	1.45		
1.0	3.15		
1.5	4.27		
2.0	4.63		
2.5	5.04		
3.0	5.35		
3.5	5.64		
4.0	5.82		
4.5	5.99		
5.0	6.09		
6.0	6.21		
7.0	6.29		
8.0	6.37		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	8.0	mins

Weather during Test	Dry
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk

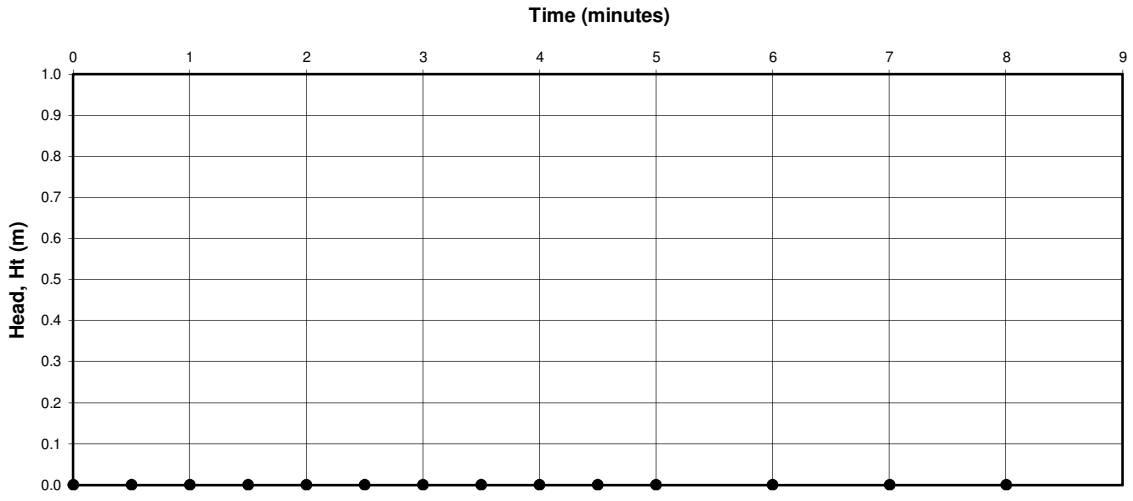
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71213
		Project No	PC197626
		Test No	2
Client	Highways England	Date	17/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-1.00		
0.5	1.45	0.45		
1.0	3.15	2.15		
1.5	4.27	3.27		
2.0	4.63	3.63		
2.5	5.04	4.04		
3.0	5.35	4.35		
3.5	5.64	4.64		
4.0	5.82	4.82		
4.5	5.99	4.99		
5.0	6.09	5.09		
6.0	6.21	5.21		
7.0	6.29	5.29		
8.0	6.37	5.37		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71213
		Project No	PC197626
		Test No	3
Client	Highways England	Date	17/09/2019

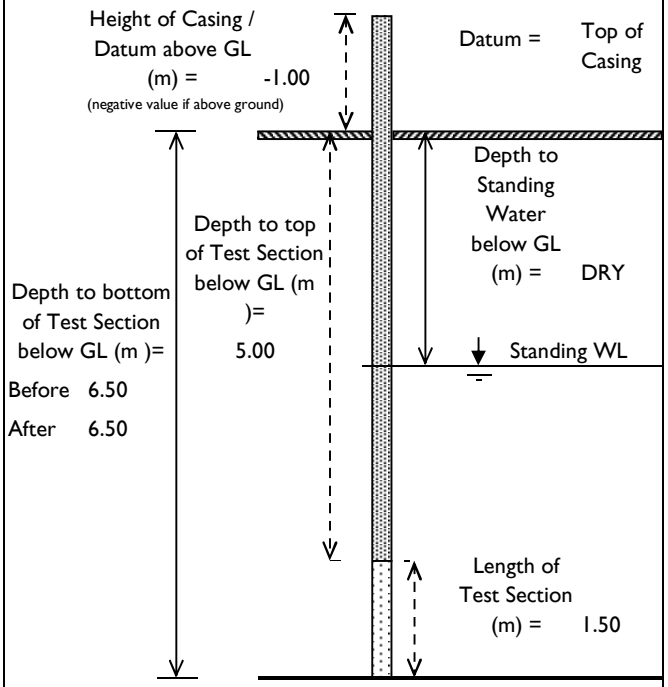
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409494.9
	N 141201.6
Level (m OD)	112.57

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
0.5	2.10		
1.0	3.48		
1.5	4.03		
2.0	4.43		
2.5	4.74		
3.0	5.34		
3.5	5.55		
4.0	5.78		
4.5	5.98		
5.0	6.07		
6.0	6.21		
7.0	6.29		
8.0	6.38		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	8.0	mins

Weather during Test	Dry
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk

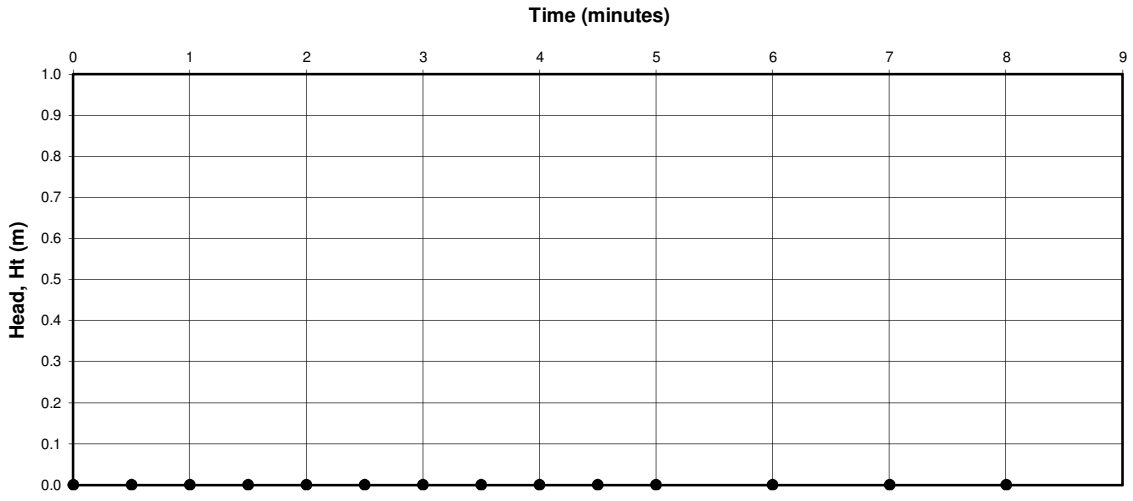
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71213
		Project No	PC197626
		Test No	3
Client	Highways England	Date	17/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-1.00		
0.5	2.10	1.10		
1.0	3.48	2.48		
1.5	4.03	3.03		
2.0	4.43	3.43		
2.5	4.74	3.74		
3.0	5.34	4.34		
3.5	5.55	4.55		
4.0	5.78	4.78		
4.5	5.98	4.98		
5.0	6.07	5.07		
6.0	6.21	5.21		
7.0	6.29	5.29		
8.0	6.38	5.38		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71803
		Project No	PC197626
		Test No	1
Client	Highways England	Date	16/09/2019

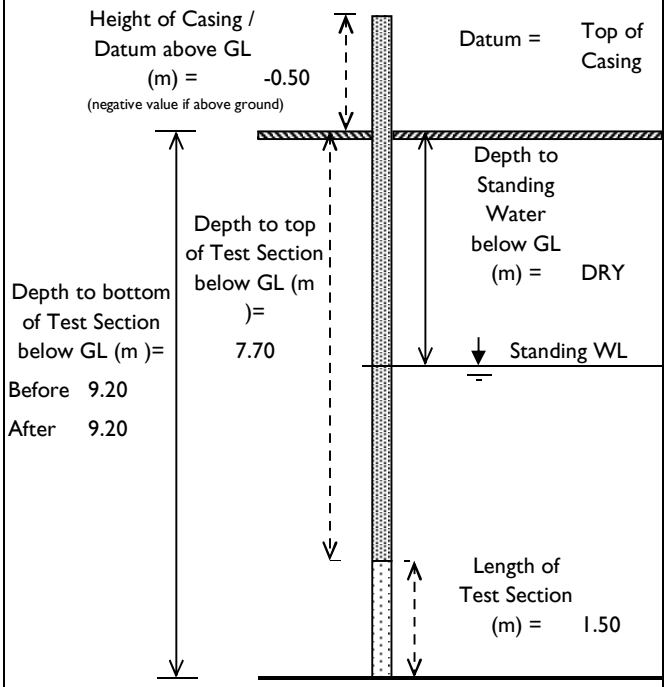
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410097.9
	N 141365.0
Level (m OD)	106.20

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
0.5	0.30		
1.0	3.58		
2.0	4.99		
3.0	6.94		
4.0	7.85		
5.0	8.09		
6.0	8.52		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	6.0	mins

Weather during Test	Dry & sunny
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk

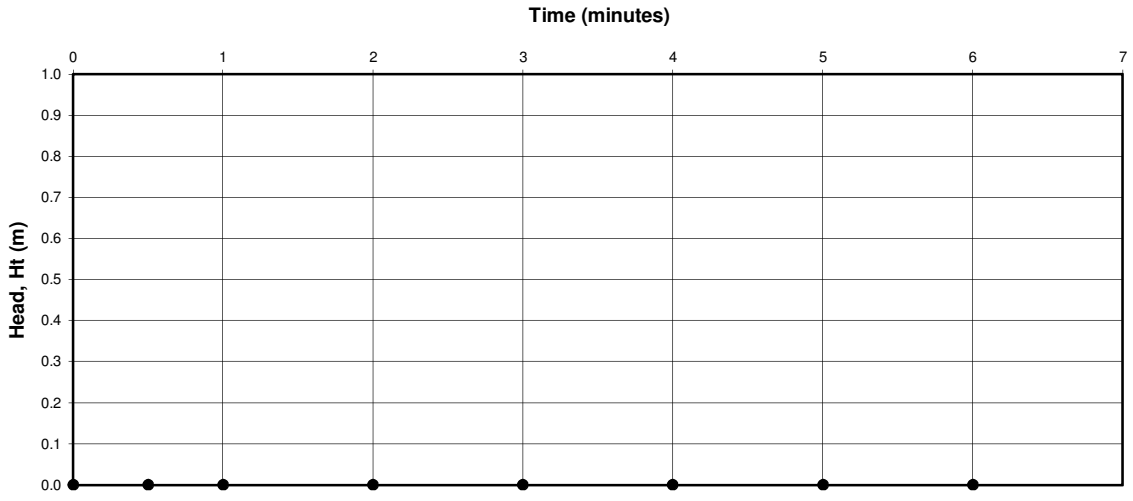
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71803
		Project No	PC197626
		Test No	1
Client	Highways England	Date	16/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-0.50		
0.5	0.30	-0.20		
1.0	3.58	3.08		
2.0	4.99	4.49		
3.0	6.94	6.44		
4.0	7.85	7.35		
5.0	8.09	7.59		
6.0	8.52	8.02		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71803
		Project No	PC197626
		Test No	2
Client	Highways England	Date	16/09/2019

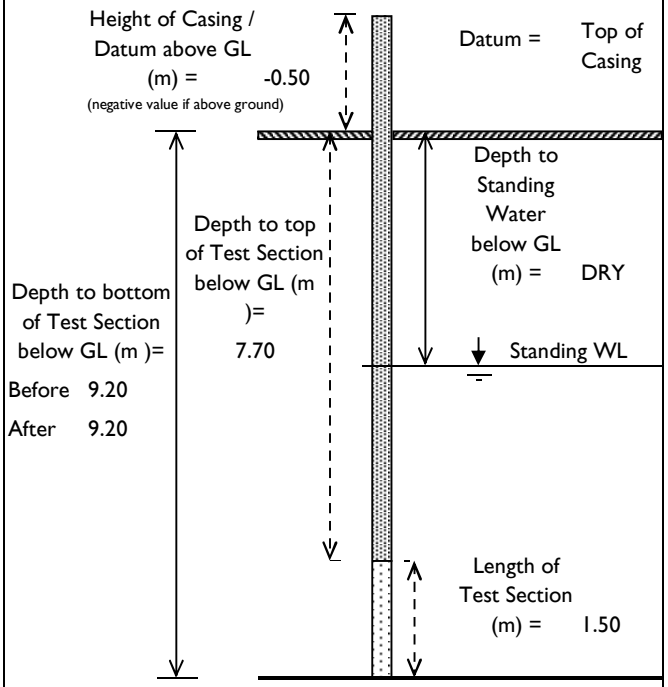
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410097.9
	N 141365.0
Level (m OD)	106.20

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
0.5	0.40		
1.0	3.28		
2.0	4.49		
3.0	5.45		
4.0	6.23		
5.0	6.85		
6.0	7.46		
7.0	7.82		
8.0	8.15		
9.0	8.43		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	9.0	mins

Weather during Test	Dry & sunny
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk

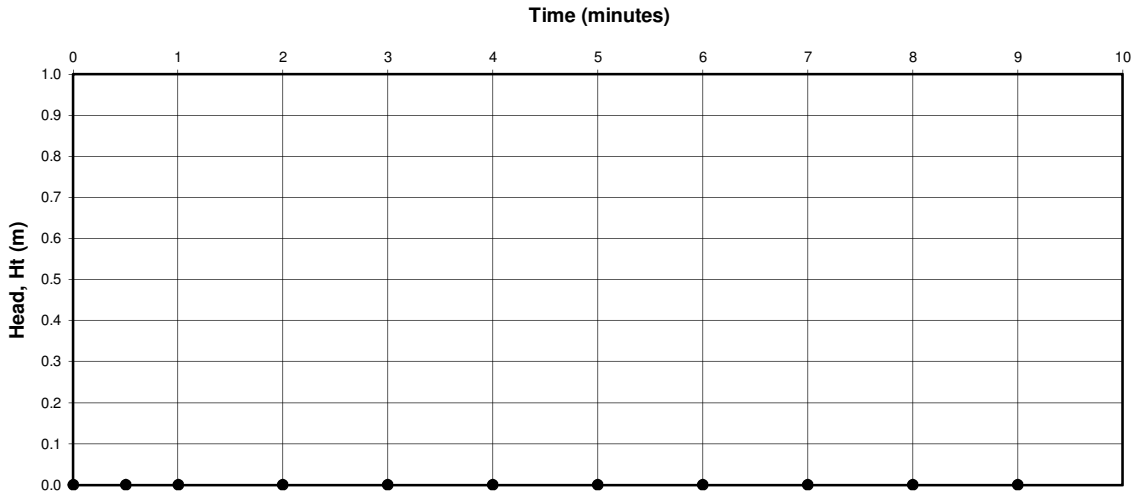
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71803
		Project No	PC197626
		Test No	2
Client	Highways England	Date	16/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-0.50		
0.5	0.40	-0.10		
1.0	3.28	2.78		
2.0	4.49	3.99		
3.0	5.45	4.95		
4.0	6.23	5.73		
5.0	6.85	6.35		
6.0	7.46	6.96		
7.0	7.82	7.32		
8.0	8.15	7.65		
9.0	8.43	7.93		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71803
		Project No	PC197626
		Test No	3
Client	Highways England	Date	16/09/2019

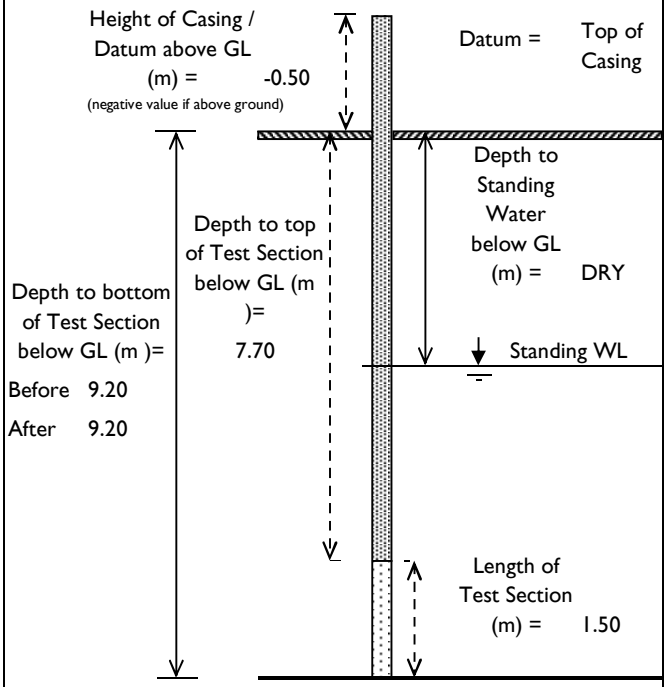
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410097.9
	N 141365.0
Level (m OD)	106.20

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00		
0.5	0.38		
1.0	3.30		
2.0	4.53		
3.0	5.17		
4.0	6.00		
5.0	6.70		
6.0	7.17		
7.0	7.62		
8.0	7.94		
9.0	8.24		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	9.0	mins

Weather during Test	Dry & sunny
Test Carried Out By	C. Watkinson
Test Checked By	C. Lange
Description of Test Section	Chalk

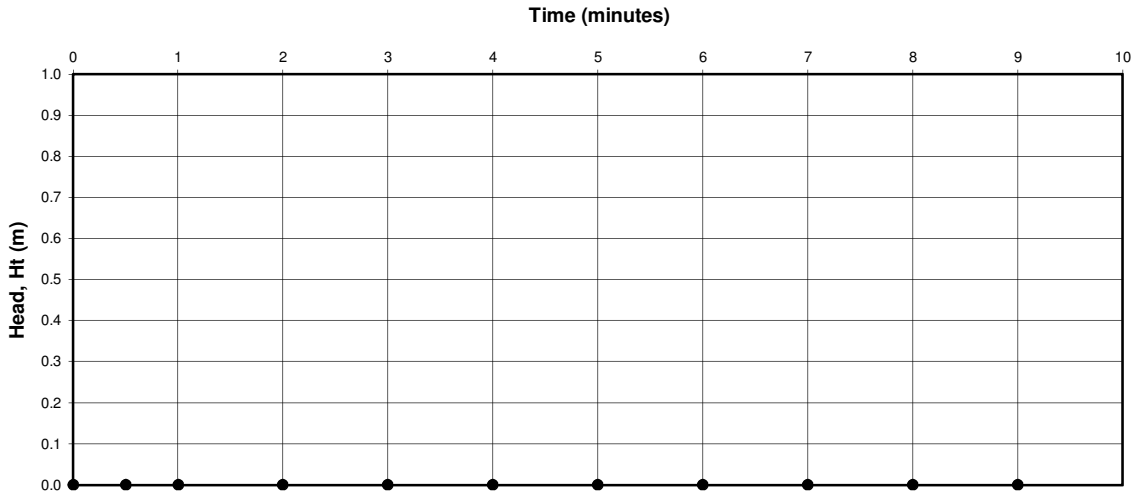
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71803
		Project No	PC197626
		Test No	3
Client	Highways England	Date	16/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-0.50		
0.5	0.38	-0.12		
1.0	3.30	2.80		
2.0	4.53	4.03		
3.0	5.17	4.67		
4.0	6.00	5.50		
5.0	6.70	6.20		
6.0	7.17	6.67		
7.0	7.62	7.12		
8.0	7.94	7.44		
9.0	8.24	7.74		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71807
		Project No	PC197626
		Test No	1
Client	Highways England	Date	29/08/2019

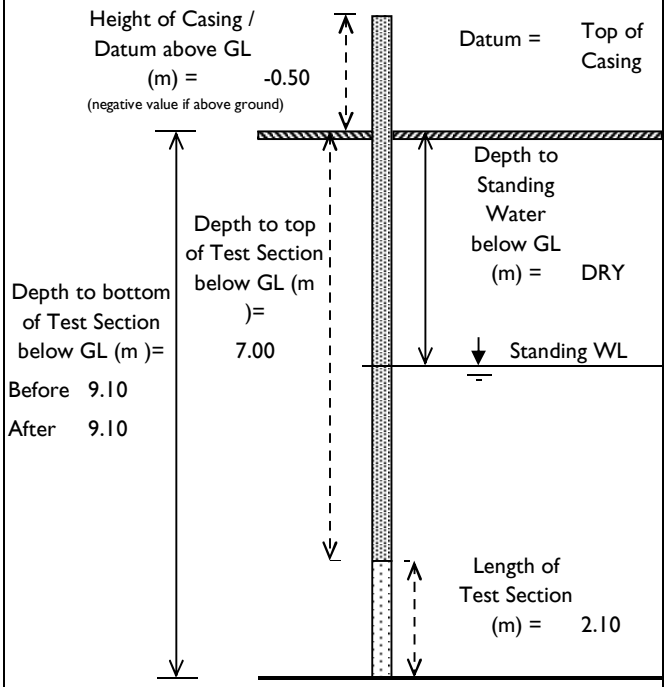
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410348.1
	N 141413.1
Level (m OD)	100.61

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	1.00		
0.3	1.87		
0.5	2.30		
0.8	2.67		
1.0	3.00		
1.5	3.59		
2.0	4.12		
2.5	4.57		
3.0	4.94		
3.5	5.30		
4.0	5.61		
4.5	5.89		
5.0	6.13		
6.0	6.54		
7.0	6.88		
8.0	7.15		
9.0	7.35		
10.0	7.52		
15.0	7.94		
16.0	8.01		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	1.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	16.0	mins

Weather during Test	Sunny
Test Carried Out By	M Kerr
Test Checked By	C. Lange
Description of Test Section	Chalk

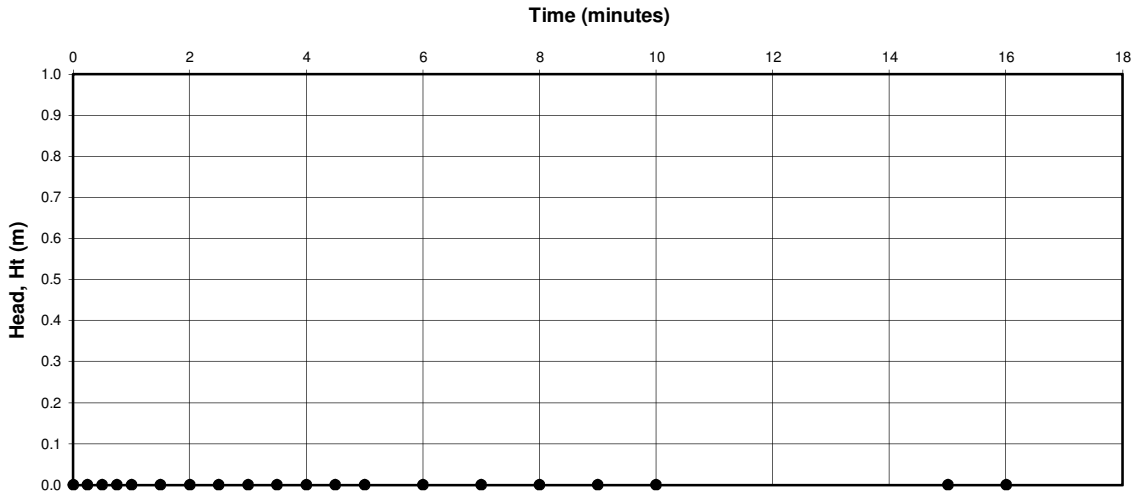
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71807
		Project No	PC197626
		Test No	1
Client	Highways England	Date	29/08/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	1.00	0.50		
0.3	1.87	1.37		
0.5	2.30	1.80		
0.8	2.67	2.17		
1.0	3.00	2.50		
1.5	3.59	3.09		
2.0	4.12	3.62		
2.5	4.57	4.07		
3.0	4.94	4.44		
3.5	5.30	4.80		
4.0	5.61	5.11		
4.5	5.89	5.39		
5.0	6.13	5.63		
6.0	6.54	6.04		
7.0	6.88	6.38		
8.0	7.15	6.65		
9.0	7.35	6.85		
10.0	7.52	7.02		
15.0	7.94	7.44		
16.0	8.01	7.51		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71807
		Project No	PC197626
		Test No	2
Client	Highways England	Date	29/08/2019

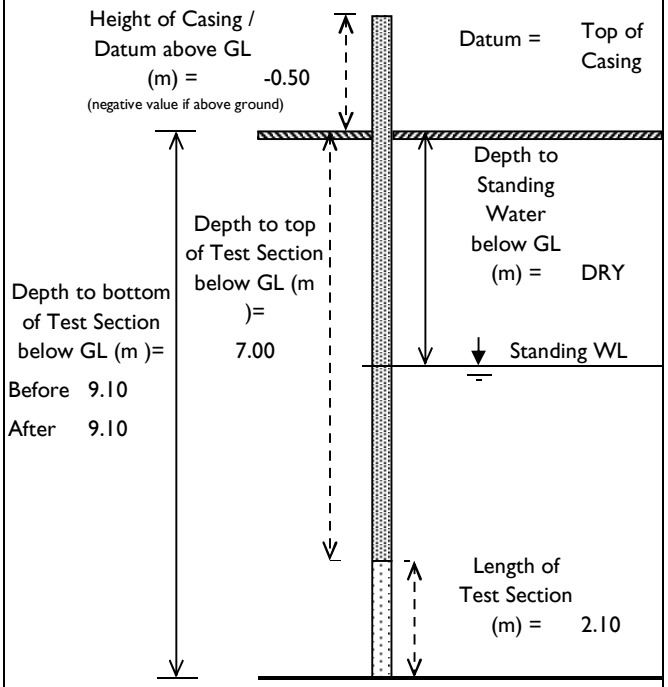
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410348.1
	N 141413.1
Level (m OD)	100.61

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	1.00		
0.3	1.45		
0.5	1.91		
0.8	2.29		
1.0	2.60		
1.5	3.16		
2.0	3.64		
2.5	4.11		
3.0	4.51		
3.5	4.75		
4.0	5.19		
4.5	5.50		
5.0	5.79		
6.0	6.28		
7.0	6.69		
8.0	7.02		
9.0	7.28		
10.0	7.48		
12.0	7.79		
14.0	7.98		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	1.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	14.0	mins

Weather during Test	Sunny
Test Carried Out By	M Kerr
Test Checked By	C. Lange
Description of Test Section	Chalk

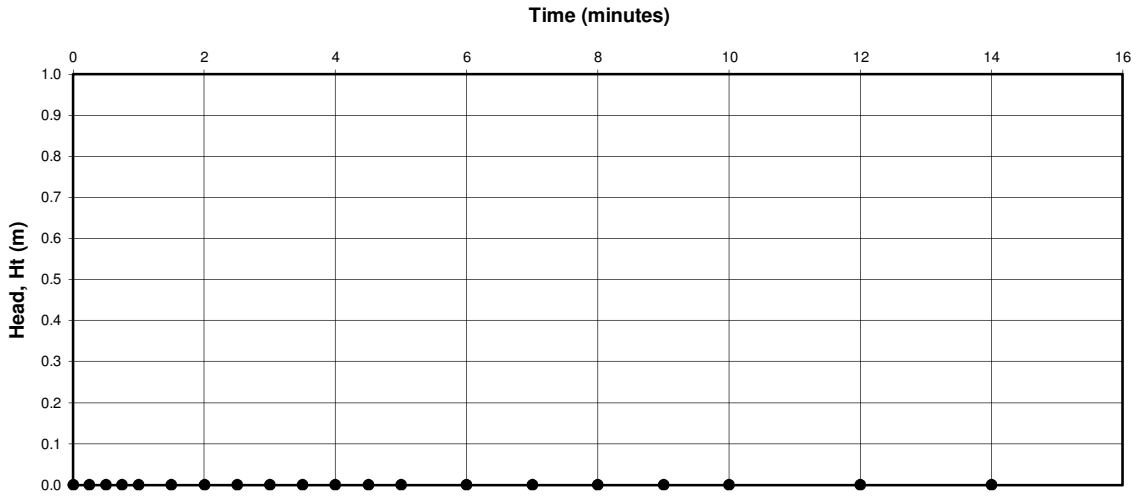
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71807
		Project No	PC197626
		Test No	2
Client	Highways England	Date	29/08/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	1.00	0.50		
0.3	1.45	0.95		
0.5	1.91	1.41		
0.8	2.29	1.79		
1.0	2.60	2.10		
1.5	3.16	2.66		
2.0	3.64	3.14		
2.5	4.11	3.61		
3.0	4.51	4.01		
3.5	4.75	4.25		
4.0	5.19	4.69		
4.5	5.50	5.00		
5.0	5.79	5.29		
6.0	6.28	5.78		
7.0	6.69	6.19		
8.0	7.02	6.52		
9.0	7.28	6.78		
10.0	7.48	6.98		
12.0	7.79	7.29		
14.0	7.98	7.48		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71807
		Project No	PC197626
		Test No	3
Client	Highways England	Date	29/08/2019

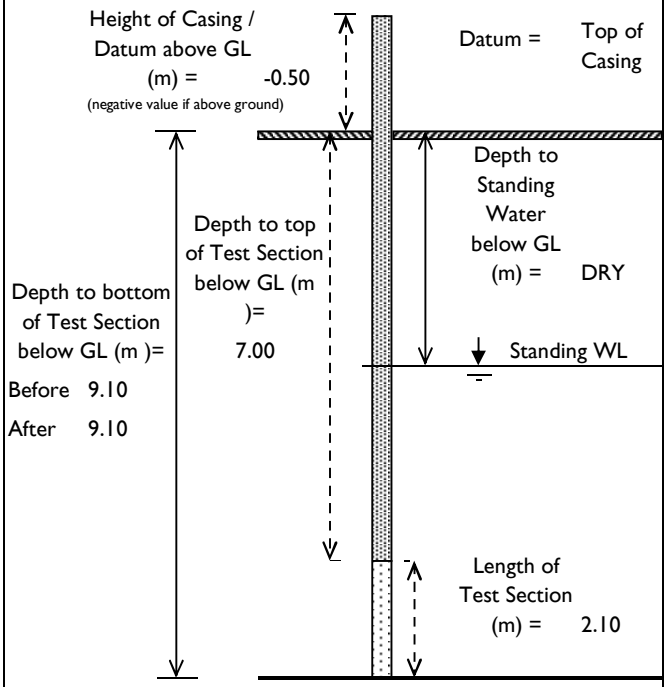
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410348.1
	N 141413.1
Level (m OD)	100.61

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.75		
0.3	1.36		
0.5	1.72		
0.8	2.05		
1.0	2.36		
1.5	2.62		
2.0	2.89		
2.5	3.13		
3.0	3.35		
3.5	3.80		
4.0	4.20		
4.5	4.58		
5.0	4.88		
6.0	5.49		
7.0	6.00		
8.0	6.41		
9.0	6.76		
10.0	7.04		
12.0	7.43		
14.0	7.70		
16.0	7.85		
18.0	7.92		
20.0	7.97		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.75	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	20.0	mins

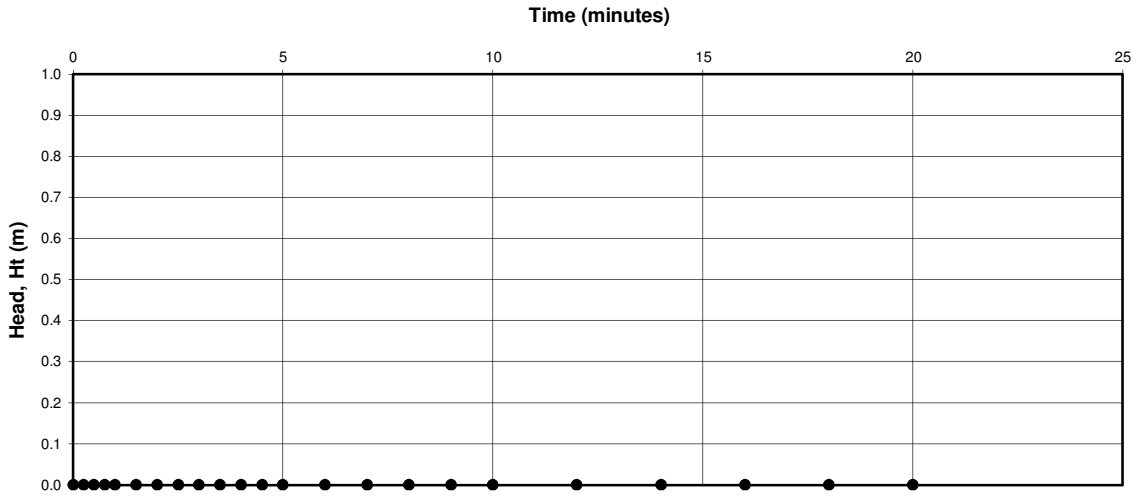
Weather during Test	Sunny
Test Carried Out By	M Kerr
Test Checked By	C. Lange
Description of Test Section	Chalk

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71807
		Project No	PC197626
		Test No	3
Client	Highways England	Date	29/08/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.75	0.25		
0.3	1.36	0.86		
0.5	1.72	1.22		
0.8	2.05	1.55		
1.0	2.36	1.86		
1.5	2.62	2.12		
2.0	2.89	2.39		
2.5	3.13	2.63		
3.0	3.35	2.85		
3.5	3.80	3.30		
4.0	4.20	3.70		
4.5	4.58	4.08		
5.0	4.88	4.38		
6.0	5.49	4.99		
7.0	6.00	5.50		
8.0	6.41	5.91		
9.0	6.76	6.26		
10.0	7.04	6.54		
12.0	7.43	6.93		
14.0	7.70	7.20		
16.0	7.85	7.35		
18.0	7.92	7.42		
20.0	7.97	7.47		



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71815
		Project No	PC197626
		Test No	1
Client	Highways England	Date	27/08/2019

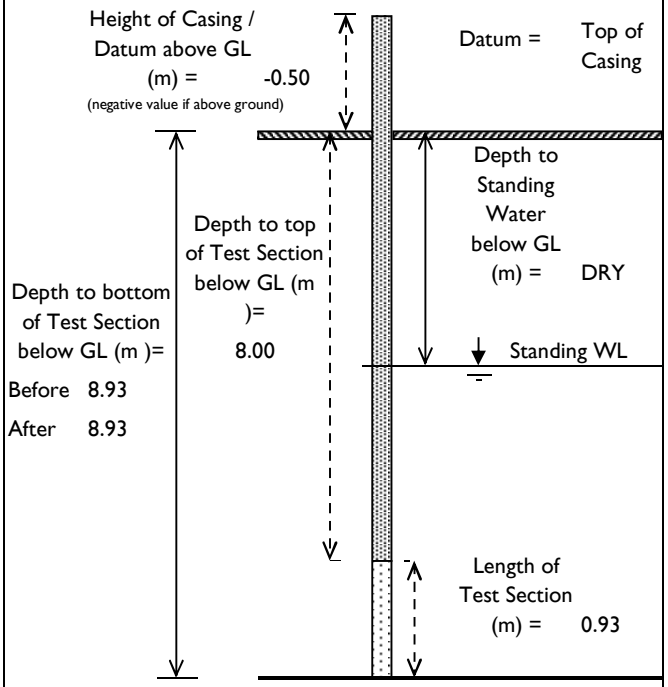
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410664.4
	N 141562.4
Level (m OD)	97.36

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.66		
0.3	3.74		
0.5	5.37		
0.8	6.35		
1.0	6.93		
1.5	7.54		
2.0	7.97		
2.5	8.19		
3.0	8.38		
3.5	8.50		
4.0	8.56		
4.5	8.58		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.66	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	4.5	mins

Weather during Test	Sunny
Test Carried Out By	M Kerr
Test Checked By	C. Lange
Description of Test Section	Chalk

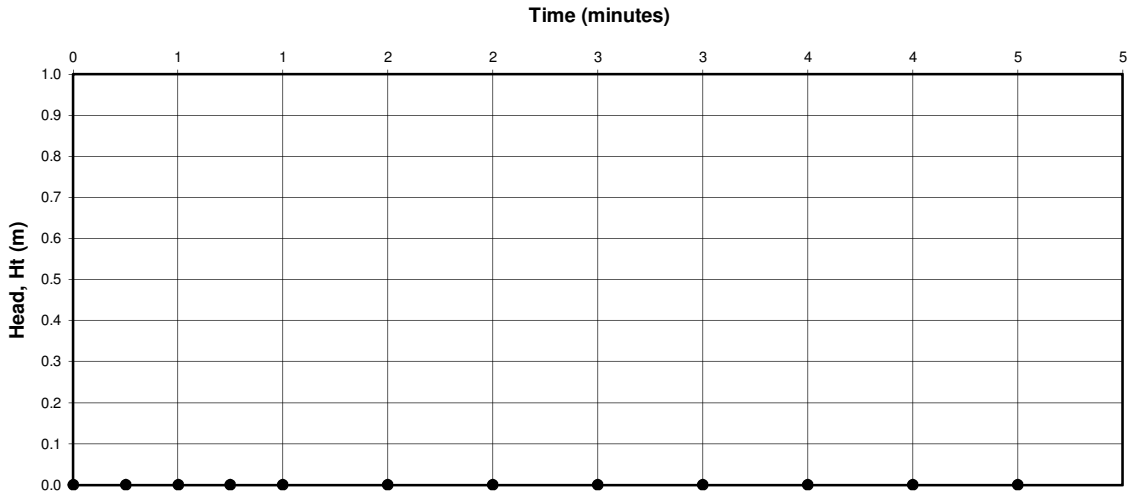
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71815
		Project No	PC197626
		Test No	1
Client	Highways England	Date	27/08/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.66	0.16		
0.3	3.74	3.24		
0.5	5.37	4.87		
0.8	6.35	5.85		
1.0	6.93	6.43		
1.5	7.54	7.04		
2.0	7.97	7.47		
2.5	8.19	7.69		
3.0	8.38	7.88		
3.5	8.50	8.00		
4.0	8.56	8.06		
4.5	8.58	8.08		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71815
		Project No	PC197626
		Test No	2
Client	Highways England	Date	27/08/2019

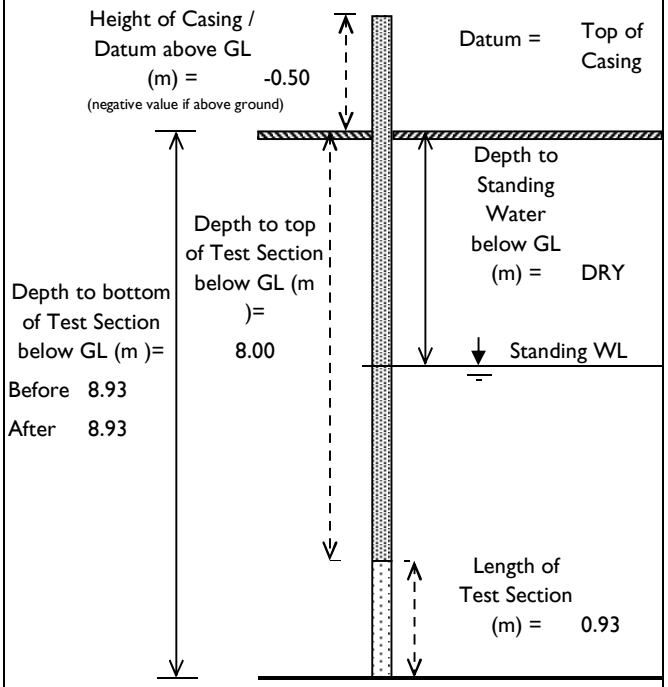
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410664.4
	N 141562.4
Level (m OD)	97.36

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.55		
0.3	3.11		
0.5	4.51		
0.8	5.38		
1.0	6.01		
1.5	6.92		
2.0	7.48		
2.5	7.94		
3.0	8.17		
3.5	8.34		
4.0	8.47		
4.5	8.55		
5.0	8.59		
6.0	8.62		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.55	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	6.0	mins

Weather during Test	Sunny
Test Carried Out By	M Kerr
Test Checked By	C. Lange
Description of Test Section	Chalk

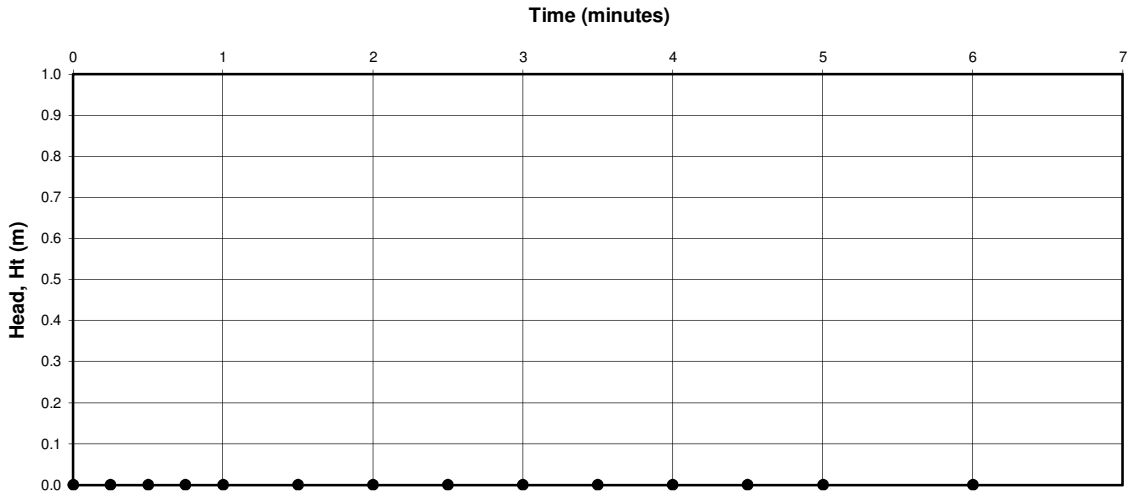
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71815
		Project No	PC197626
		Test No	2
Client	Highways England	Date	27/08/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.55	0.05		
0.3	3.11	2.61		
0.5	4.51	4.01		
0.8	5.38	4.88		
1.0	6.01	5.51		
1.5	6.92	6.42		
2.0	7.48	6.98		
2.5	7.94	7.44		
3.0	8.17	7.67		
3.5	8.34	7.84		
4.0	8.47	7.97		
4.5	8.55	8.05		
5.0	8.59	8.09		
6.0	8.62	8.12		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71815
		Project No	PC197626
		Test No	3
Client	Highways England	Date	27/08/2019

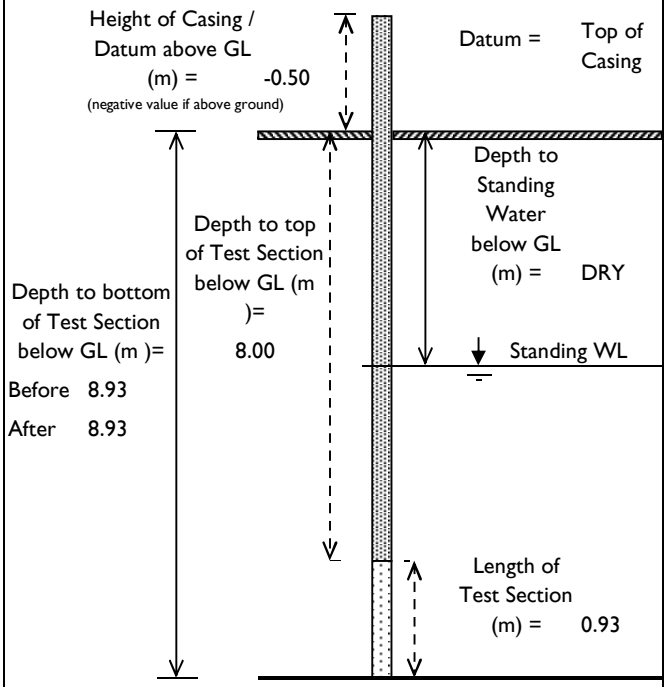
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410664.4
	N 141562.4
Level (m OD)	97.36

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.30		
0.3	3.88		
0.5	4.34		
0.8	5.24		
1.0	6.11		
1.5	7.06		
2.0	7.68		
2.5	8.06		
3.0	8.26		
3.5	8.41		
4.0	8.52		
4.5	8.58		
5.0	8.60		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.30	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	5.0	mins

Weather during Test	Sunny
Test Carried Out By	M Kerr
Test Checked By	C. Lange
Description of Test Section	Chalk

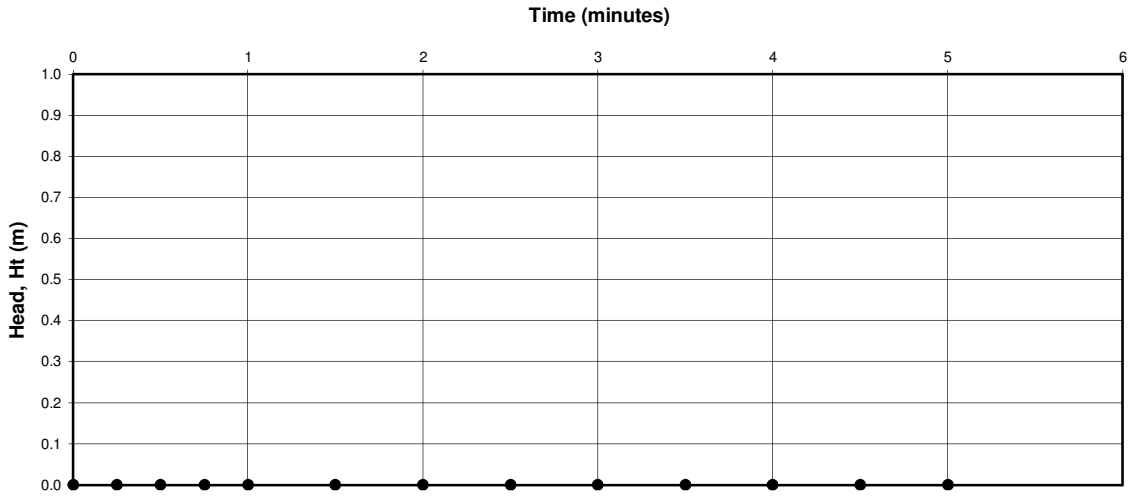
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71815
		Project No	PC197626
		Test No	3
Client	Highways England	Date	27/08/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.30	-0.20		
0.3	3.88	3.38		
0.5	4.34	3.84		
0.8	5.24	4.74		
1.0	6.11	5.61		
1.5	7.06	6.56		
2.0	7.68	7.18		
2.5	8.06	7.56		
3.0	8.26	7.76		
3.5	8.41	7.91		
4.0	8.52	8.02		
4.5	8.58	8.08		
5.0	8.60	8.10		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71819
		Project No	PC197626
		Test No	1
Client	AECOM	Date	22nd August 2019

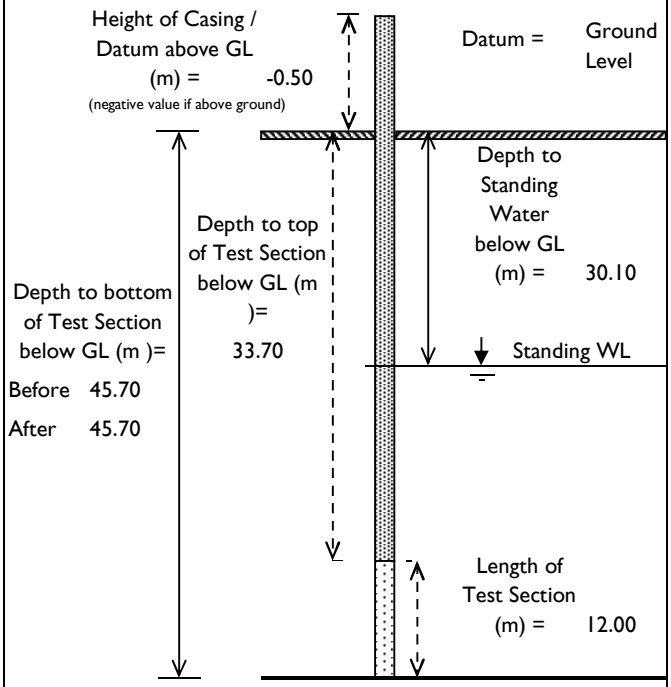
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 410884.3
	N 141605.9
Level (m OD)	97.81

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.14
Measuring Tube Dia. (m)	0.14

Test Measurements

Elapsed Time (minutes)	Depth of Water below Ground Level (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Ground Level (continued) (m)
0.0	4.86		
0.3	7.08		
0.5	8.57		
0.8	9.96		
1.0	11.16		
1.5	13.27		
2.0	15.12		
2.5	16.77		
3.0	18.19		
3.5	19.40		
4.0	20.43		
4.5	21.31		
5.0	22.01		
6.0	22.96		
7.0	23.49		
8.0	23.80		
9.0	24.11		
10.0	24.39		
15.0	25.60		
16.0	25.79		



Depth to Standing Water Level below Datum	30.10 m
Depth to Induced Water Level below Datum	4.86 m
Differential head at start of Test ($H_{o)}$	25.24 m
Differential Head at end of Test (H_f)	4.31 m
Time Elapsed at end of test (t_f)	16.0 mins

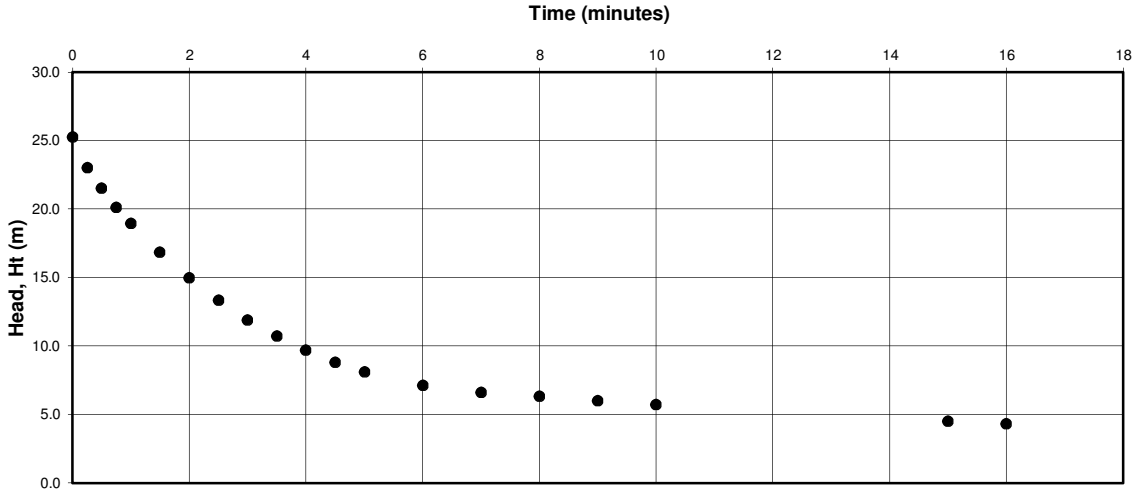
Weather during Test	Dry and overcast
Test Carried Out By	J Rix
Test Checked By	C. Lange
Description of Test Section	Chalk

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	R71819
		Project No	PC197626
		Test No	1
Client	AECOM	Date	22nd August 2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)	Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	4.86	4.86	25.24	0.00					
0.3	7.08	7.08	23.02	2.22					
0.5	8.57	8.57	21.53	1.49					
0.8	9.96	9.96	20.14	1.39					
1.0	11.16	11.16	18.94	1.20					
1.5	13.27	13.27	16.83	2.11					
2.0	15.12	15.12	14.98	1.85					
2.5	16.77	16.77	13.33	1.65					
3.0	18.19	18.19	11.91	1.42					
3.5	19.40	19.40	10.70	1.21					
4.0	20.43	20.43	9.67	1.03					
4.5	21.31	21.31	8.79	0.88					
5.0	22.01	22.01	8.09	0.70					
6.0	22.96	22.96	7.14	0.95					
7.0	23.49	23.49	6.61	0.53					
8.0	23.80	23.80	6.30	0.31					
9.0	24.11	24.11	5.99	0.31					
10.0	24.39	24.39	5.71	0.28					
15.0	25.60	25.60	4.50	1.21					
16.0	25.79	25.79	4.31	0.19					



Remarks and Additional Information

INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	WS71503
		Project No	PC197626
		Test No	1
Client	Highways England	Date	17/09/2019

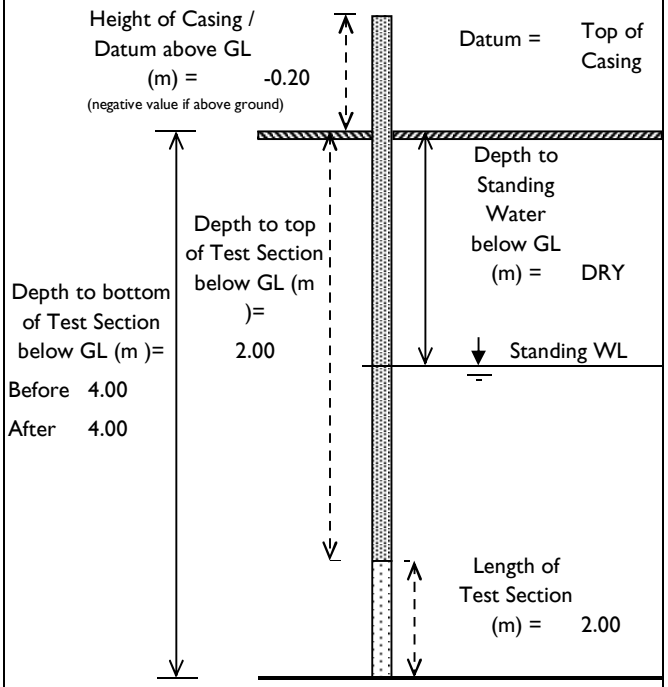
Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details	
Inclination	Vertical
Method of Drilling	Rotary Coring
Co-ordinates (m)	E 409214.9
	N 141321.4
Level (m OD)	107.40

Test Details	
Test Type	Variable Head - Falling
Hydrogeological Conditions	Test Section Un-Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.07
Measuring Tube Dia. (m)	0.07

Test Measurements

Elapsed Time (minutes)	Depth of Water below Top of Casing (m)	Elapsed Time (Continued) (minutes)	Depth of Water below Top of Casing (continued) (m)
0.0	0.00	90.000	1.92
0.5	0.16	95.0	1.97
1.0	0.20	100.0	2.04
1.5	0.28	105.0	2.08
2.0	0.36	110.0	2.13
2.5	0.44	115.0	2.16
3.0	0.51	120.0	2.20
4.0	0.67	125.0	2.23
5.0	0.75	130.0	2.25
10.0	1.02	135.0	2.28
15.0	1.10	140.0	2.30
20.0	1.18	145.0	2.33
25.0	1.26	150.0	2.34
30.0	1.34	155.0	2.36
35.0	1.40	160.0	2.38
40.0	1.45		
45.0	1.50		
50.0	1.56		
55.0	1.61		
60.0	1.66		
65.0	1.71		
70.0	1.76		
75.0	1.78		
80.0	1.82		
85.0	1.86		



Depth to Standing Water Level below Datum		m
Depth to Induced Water Level below Datum	0.00	m
Differential head at start of Test (H_o)		m
Differential Head at end of Test (H_f)		m
Time Elapsed at end of test (t_f)	160.0	mins

Weather during Test	Dry
Test Carried Out By	J.Lovell
Test Checked By	C. Lange
Description of Test Section	Chalk

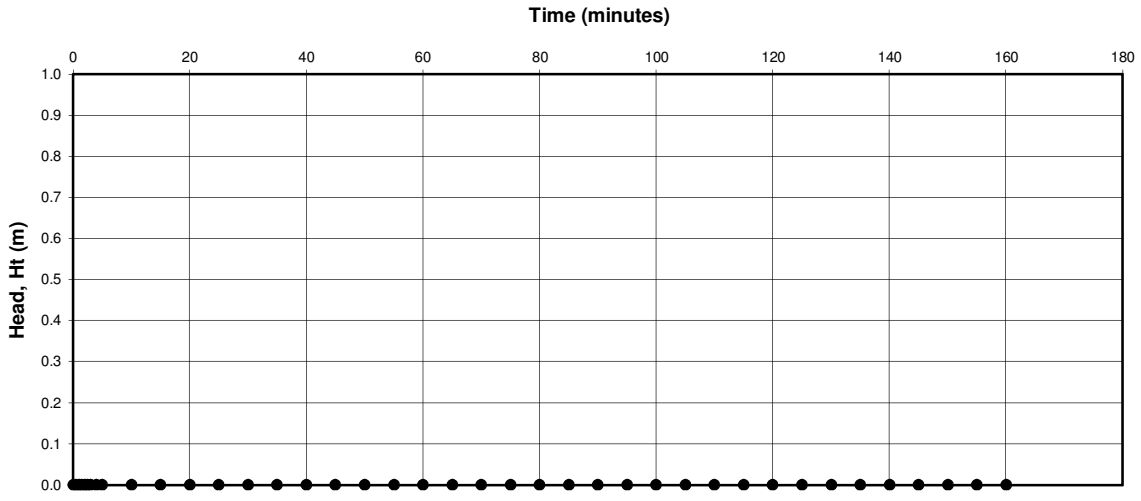
INSITU TESTING - *Permeability (Borehole)*

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Borehole	WS71503
		Project No	PC197626
		Test No	1
Client	Highways England	Date	17/09/2019

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	0.00	-0.20		
0.5	0.16	-0.04		
1.0	0.20	0.00		
1.5	0.28	0.08		
2.0	0.36	0.16		
2.5	0.44	0.24		
3.0	0.51	0.31		
4.0	0.67	0.47		
5.0	0.75	0.55		
10.0	1.02	0.82		
15.0	1.10	0.90		
20.0	1.18	0.98		
25.0	1.26	1.06		
30.0	1.34	1.14		
35.0	1.40	1.20		
40.0	1.45	1.25		
45.0	1.50	1.30		
50.0	1.56	1.36		
55.0	1.61	1.41		
60.0	1.66	1.46		

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
65.0	1.71	1.51		
70.0	1.76	1.56		
75.0	1.78	1.58		
80.0	1.82	1.62		
85.0	1.86	1.66		
90.0	1.92	1.72		
95.0	1.97	1.77		
100.0	2.04	1.84		
105.0	2.08	1.88		
110.0	2.13	1.93		
115.0	2.16	1.96		
120.0	2.20	2.00		
125.0	2.23	2.03		
130.0	2.25	2.05		
135.0	2.28	2.08		
140.0	2.30	2.10		
145.0	2.33	2.13		
150.0	2.34	2.14		
155.0	2.36	2.16		
160.0	2.38	2.18		



Remarks and Additional Information

APPENDIX 8

European Geophysical Services Ltd Logs

The European Geophysical Services Ltd report on the geophysical logging includes details for testing on two boreholes (R71901 and R71903) undertaken during a previous phase of investigation (see Geotechnics report A303 Amesbury to Berwick Down - Phase 7a (i), PC197510, September 2019).

EUROPEAN GEOPHYSICAL SERVICES

REPORT ON THE

GEOPHYSICAL LOGGING

OF

THREE BOREHOLES

AT

A303 STONEHENGE BYPASS

Prepared For:

GEOTECHNICS
geotechnical and geoenvironmental specialists

5 Orchard Court
Heron Road
Exeter
EX2 7LL

OCT2019/GNICS1906_ A303_rpt/SU14

	Name	Date
Logged by:	M. Kynaston M. Hand	27.6.19 12.7.19 16.9.19
Report by:	M. Hand	23.10.19
Checked by:	M. Kynaston	25.10.19

EUROPEAN GEOPHYSICAL SERVICES LTD
22 The Stables, Sansaw Business Park, Hadnall, Shrewsbury, Shropshire. SY4 4AS
T: 01939210710 / office@europeangeophysical.com
[redacted]
Registered in England & Wales No. 2962962 VAT No. GB648 4148 18

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4. PROCESSING AND PRESENTATION OF IMAGER RESULTS 7

5. BOREHOLE LOGGING CONSTRAINTS 8

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Figure 3.1	Location map showing approximate area of investigation highlighted by a red circle.
Figure 3.2	Aerial image showing approximate area of investigation highlighted by a red circle.
Figure 4	Geophysical Logs
Appendix 1	Defect Classification
Appendix 2	Geophysical Logs

1.0 INTRODUCTION

At the request of Geotechnics Ltd, optical geophysical logging including imaging was carried out in 3 boreholes located at the A303 Stonehenge bypass site.

The work was carried out by European Geophysical Services between the 27th of June 2019 and the 16th of September 2019.

The following logs were run:-

BH	Date	Optical Imager	Acoustic Imager	Natural Gamma	Caliper	Sonic	P&S
R71901	27.6.19	1.5m - 39	Insufficient water	1.6m – 39.1m	1.1m – 38.9m	Insufficient water	Insufficient water
R71903	12.7.19	1.5m – 38.1m	38.1m – 46.7	0.2m – 46.1m	0.7m – 46.3m	38m – 48m	38m – 48m
R71202	16.9.19	1.1m – 15.6m	BH DRY		1.01m – 15.6m	BH DRY	BH DRY

2.0 THE GEOPHYSICAL LOGGING METHODS

The Equipment and Field Procedure

A fully digital logging system with a 600m capacity motorised winch mounted in a 4x4 van was used.

All logging data was recorded digitally for reprocessing and archiving purposes.

With the exception of the fluid logs, all logs were run from the bottom of the boreholes upward.

The optical imager survey was carried out first to avoid the disturbance of the fluid by the geophysical logs which may affect water clarity.

Natural Gamma (Gam)

The tool measures the naturally occurring gamma radiation found in rocks and sediments. It is mainly used to detect the clays that contain potassium K^{40}, though the U^{238} series of elements and the Th^{232} series of elements also emit gamma radiation.

The higher the concentration of these clay minerals the greater the responses on the natural gamma log.

Caliper (Cal)

This tool measures the mean diameter of the borehole. It is used to check the integrity of the borehole lining, and where the borehole is unlined to identify zones of washout, breakout or fissures.

Optical Borehole Imager (Optical)

A precision-machined prism and CCD camera assembly permits a high definition video image of the borehole wall to be captured in a variety of horizontal and vertical resolutions. The resulting image is digitised in the sonde for transmission to the surface acquisition system.

The image is then orientated to Magnetic North and displayed as an unwrapped image log. This enables a detailed structural interpretation to be made if required.

For the best results the optical imager should be run above the water level or in clean, clear fluid. The logging tool is centralised during data acquisition by two sets of bow springs. The bow springs are adjusted to a variety of borehole diameters prior to acquisition. The image is recorded on the way down the borehole to limit disturbance to the clarity of the water in the borehole by the logging tool.

Images and associated data are viewed in real time during the data acquisition.

2.0 THE GEOPHYSICAL LOGGING METHODS

The orientation system employs a flux gate magnetometer and therefore the recorded data within approximately one metre of magnetic steel casing is un-orientated. This is corrected manually during the post-processing stage

Acoustic Borehole Imager (Amplitude and Travel Time)

This tool scans the borehole wall through 360 degrees and records the acoustic reflection of the resulting signal in terms of amplitude and transit time (the travel time from the tool to the borehole wall). This technique requires a fluid filled borehole with a minimum of suspended solids, polymers or muds within the fluid column.

This sensitive technique responds to small diameter changes, rugosity and the acoustic nature of the borehole wall. It is primarily used for detecting fractures and other discontinuities. The resultant images are orientated (to magnetic North) 0° through 90°, 180° and 270° back to 0°.

The logging tool is centralised during data acquisition by two sets of bow springs. The bow springs are adjusted to a variety of borehole diameters prior to acquisition. The image is viewed on the way down the borehole to allow fine tuning of the acquisition parameters. The settings are then adjusted and the image recorded on the way up the borehole which ensures a constant line speed during acquisition.

Images and associated data are viewed in real time during the data acquisition.

The orientation system employs a flux gate magnetometer and therefore the recorded data within approximately one metre of magnetic steel casing is un-orientated. This is corrected manually during the post-processing stage

P & S Wave (Vp & Vs)

This tool is suspended stationary in the borehole at depth positions of interest and allows simultaneous measurement of P wave (Vp) and S wave (Vs) velocities.

There two sets of receivers at a spacing of 2m and 3m from a transmitter. Each receiver contains two transducers, a piezo-electric device for the detection P waves, and a geophone for the detection of S waves. The time of the P and S wave first arrivals to the receivers are recorded. The distance between the receivers is 1m and the time taken is the difference between the arrival times to the two sets of receivers. As the distance travelled and the time taken is known the speed of the P and S waves can be calculated. By using the difference in arrival times between the two receivers any borehole effects are greatly reduced.

The transmitter operates as a dipole source producing energy in two directions, 180° out of phase. The transmitter pulses are directed perpendicular to the borehole wall. This type of source generates strong shear waves within the formation.

2.0 THE GEOPHYSICAL LOGGING METHODS

Results can be affected by the competency of the rock material, fractured zones, low velocity zones and irregular borehole diameters.

The P and S Suspension tool is 4.5m long. Readings cannot be taken closer than 3m to the water level and no deeper than 3m from the base

This tool can only be used in fluid filled unlined boreholes.

3.0 SITE DETAILS

Site: A303 Stonehenge bypass

OS Grid reference: SU14
Post code: SP3 4DX

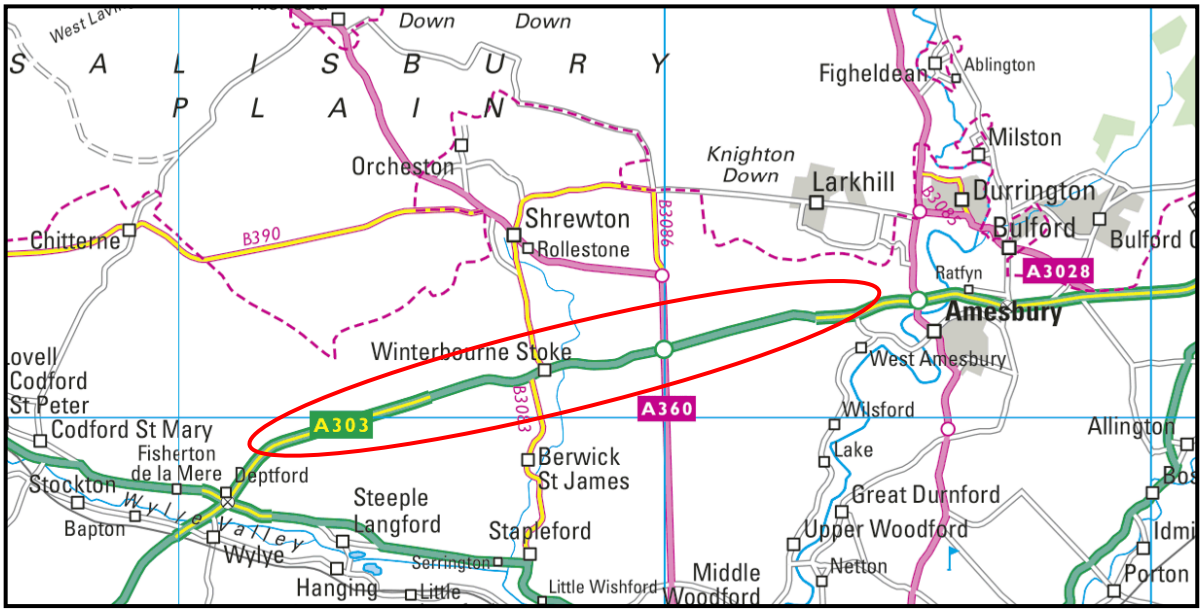


Figure 3.1 Location map showing approximate area of investigation highlighted by a red circle © Crown copyright 2005 OS100057099

Figure 3.2 Aerial image showing approximate area of investigation (highlighted by a red circle) with a pin showing the location of Stonehenge for reference. © Google 2019.

4.0 PROCESSING AND PRESENTATION OF IMAGER RESULTS

Detailed logs of the imager data have been produced at a vertical scale of 1:10.

Constructional details and information on each borehole are given in the headers of each log.

All images have been referenced to Magnetic North.

The borehole's azimuth and tilt are plotted alongside the images.

The image of the borehole wall is presented in an unwrapped form with a horizontal scale marked 0° - North, through 90° - East, 180° - South, 270° - West, back to North.

Structural features and discontinuities have been picked from the images in the form of colour coded sinusoidal projections - see Appendix 1 for details. This 'Discontinuities' log is also presented with a horizontal scale marked 0° - North, through 90° - East, 180° - South, 270° - West, back to North.

Structure picking is not a definitive analysis of all the features within a borehole. Only the discontinuities that have a linear dip and direction are 'picked' and used in the analysis of the discontinuities. Features that do not have a regular sinusoidal shape do not have a linear dip and direction, 'best fit' picking of these features is done if approximately 80% coverage of the sinusoid can be achieved. Below this percentage the inaccuracy of the picking is too great and if included in any structural analysis may adversely skew the results. Vughs, solution holes, and angular break outs are examples of features not picked.

The apparent azimuth and apparent dip (i.e. relative to the borehole's azimuth and tilt) of the discontinuities are calculated using the diameter of the borehole and the geometric parameters of the sinusoids overlaid on the discontinuities. The final processing stage is to correct these apparent values to true azimuth (in relation to Magnetic North) and true dip (from horizontal) by correcting for the borehole's azimuth and tilt.

The final results are presented as a 'tadpole' plot (Discontinuities - True°). The horizontal position of the tadpole's head gives the defect's true dip angle and its tail points in the direction of the defect's azimuth. These logs are presented with a horizontal scale in degrees. By convention the top of the page is North (Magnetic) and the right hand edge of the paper is East.

The true structural data has been presented in digital format as an excel file (xls).

5.0 BOREHOLE LOGGING CONSTRAINTS

- **Vehicle access restrictions**
  None

- **Tool access restrictions**
  None

- **Borehole conditions / risk to equipment**
  Good stable boreholes, casing to rock head.

- **Lack of fluid filled column / cloudy fluid**

  Due to cloudy borehole fluid, the Acoustic imager was used below the water level in R71903.

  In R71901 and R71202, the rest water levels were insufficient (<5m interval) to run the P&S tool.

- **Time constraint**
  None

- **Borehole construction / casing**
  None

Appendix 1

Discontinuity Classification.

Discontinuity	Colour	Classification Parameters
Major Fracture or Fissure	Blue	An open break in the formation, that is **continuous** across the entire image.
Minor Fracture or Fissure	Turquoise	A thin or closed break in the formation, that is **continuous or discontinuous** across the image.
Vein	Green	That may be **continuous or discontinuous** across the entire image.
Fabric	Red	Defines a feature generally metamorphic, igneous or sedimentary in origin that may be **continuous or discontinuous** across the image, such as bedding and cross-bedding, schistosity or gneissosity.
Intrusions	Purple	Intrusive features such as dykes and sills, generally **continuous** across the image
Unknown	Black	Faint features which **can not** be classified.

Appendix 2

Geophysical Logs

EUROPEAN GEOPHYSICAL SERVICES LTD

Client: **Geotechnics**

Borehole: **R71202**

Log Type: ***Composite***

Location: **A303 Stonehenge** Area: **Wiltshire** Grid Ref: **409175.4E 141270.9N** Elevation: **104.35m**

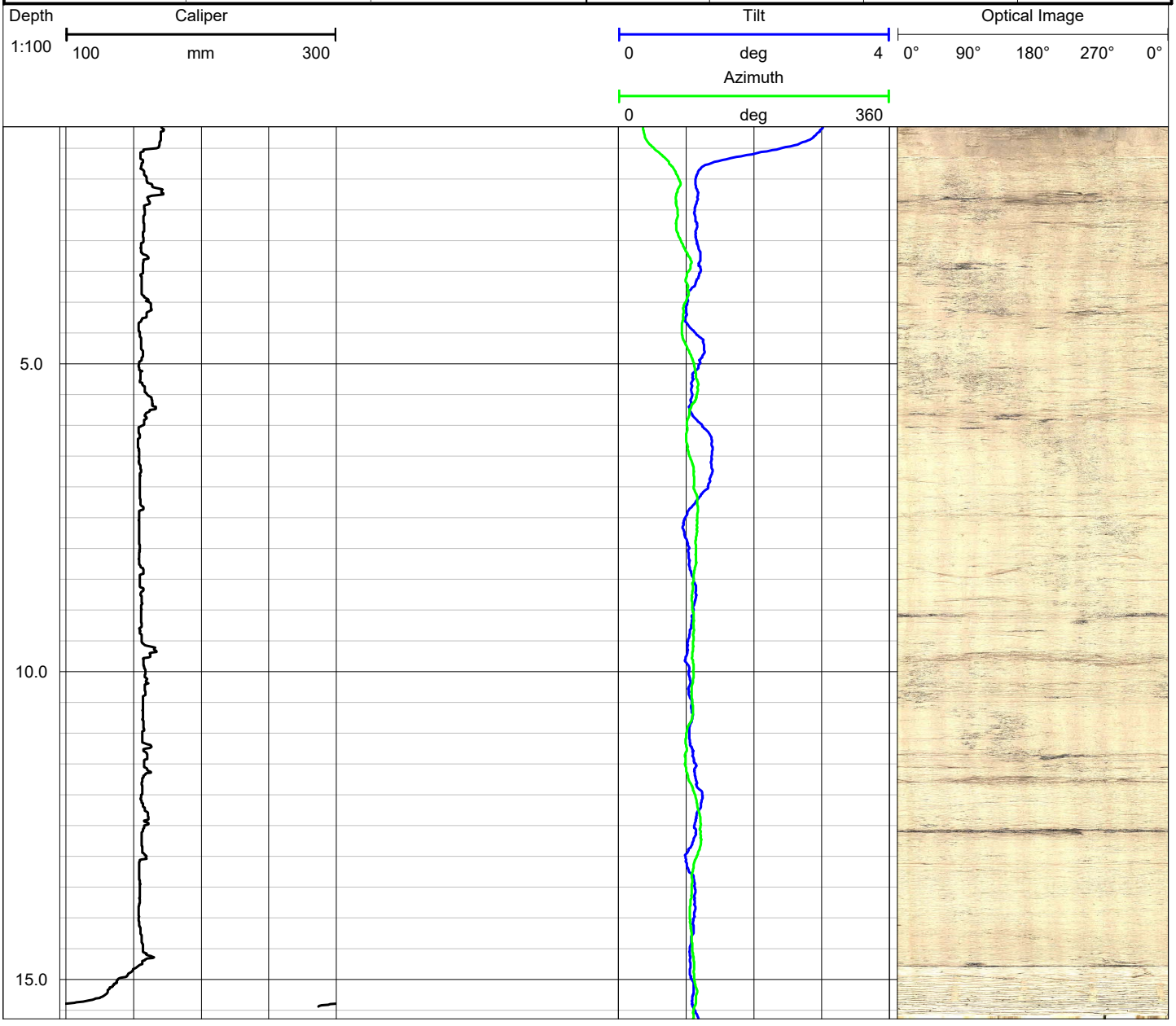
Drilled Depth: (m)	**15.6**	Date:	**16.09.2019**
Logged Depth: (m)	**15.6**	Recorded By:	**M. Hand**
Logging Datum:	**Ground level**	Remarks:	Insufficient fluid for the P&S tool to be run.
Logged Interval: (m)	**1.5 - 15.6**		
Fluid Level: (m)	**DRY**		

BOREHOLE RECORD

Bit: (mm)	From: (m)	To: (m)
170	**0.0**	**1.6**
154	**1.6**	**15.6**

CASING RECORD

Type	Size: (mm)	From: (m)	To: (m)
None			



EUROPEAN GEOPHYSICAL SERVICES LTD

Client: **Geotechnics**

Borehole: **R71202**

Log Type: ***Image***

Location: **A303 Phase 7A** Area: **Amesbury** Grid Ref: **409175.4E 141270.9N** Elevation: **104.35m**

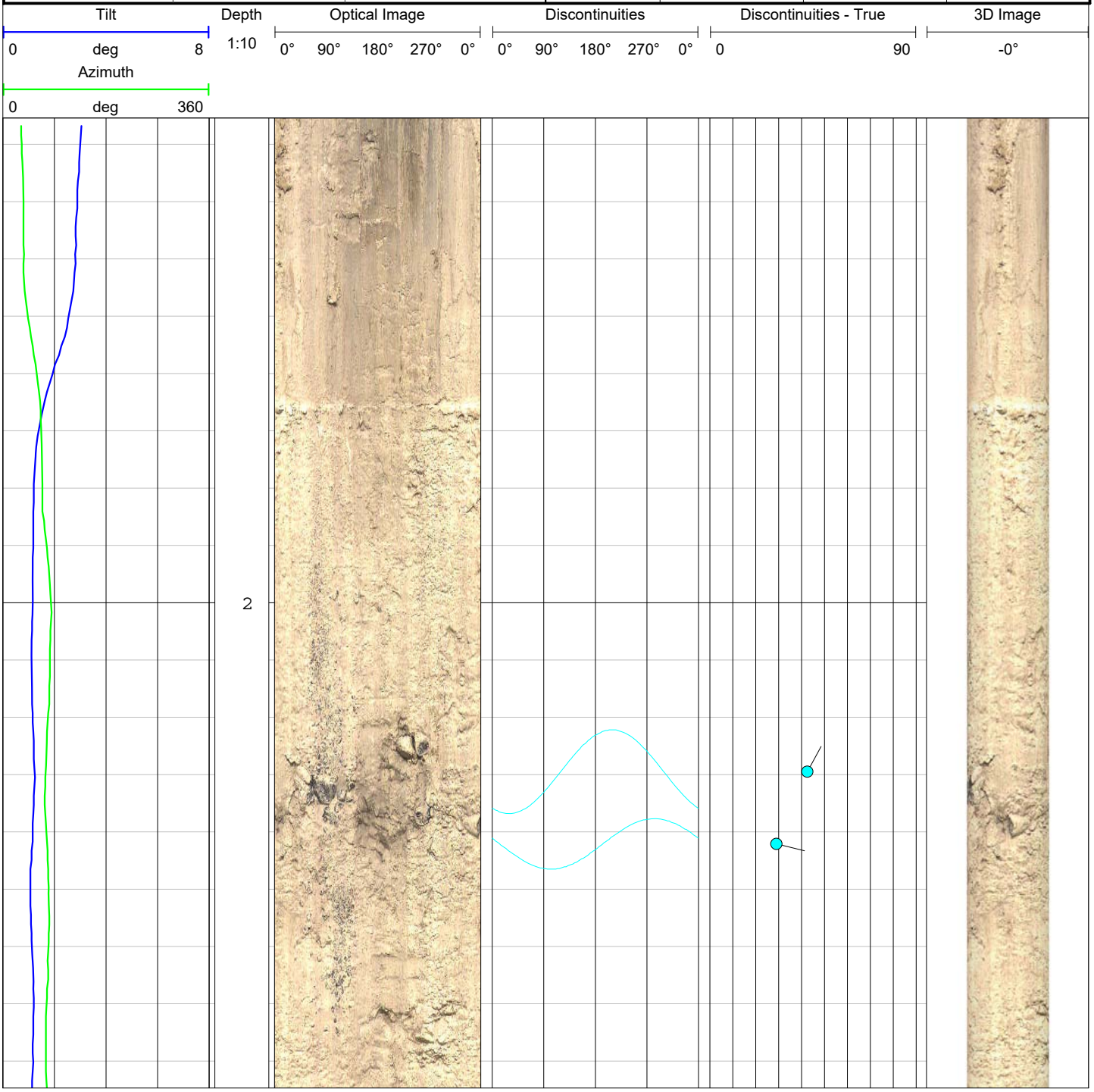
Drilled Depth: (m)	**15.6**	Date:	**16.09.2019**
Logged Depth: (m)	**15.6**	Recorded By:	**M. Hand**
Logging Datum:	**Ground level**	Remarks:	Insufficient fluid for the acoustic tool to be run.
Logged Interval: (m)	**1.5 - 15.6**		
Fluid Level: (m)	**DRY**		

BOREHOLE RECORD

Bit: (mm)	From: (m)	To: (m)
170	**0.0**	**1.6**
154	**1.6**	**15.6**

CASING RECORD

Type	Size: (mm)	From: (m)	To: (m)
None			



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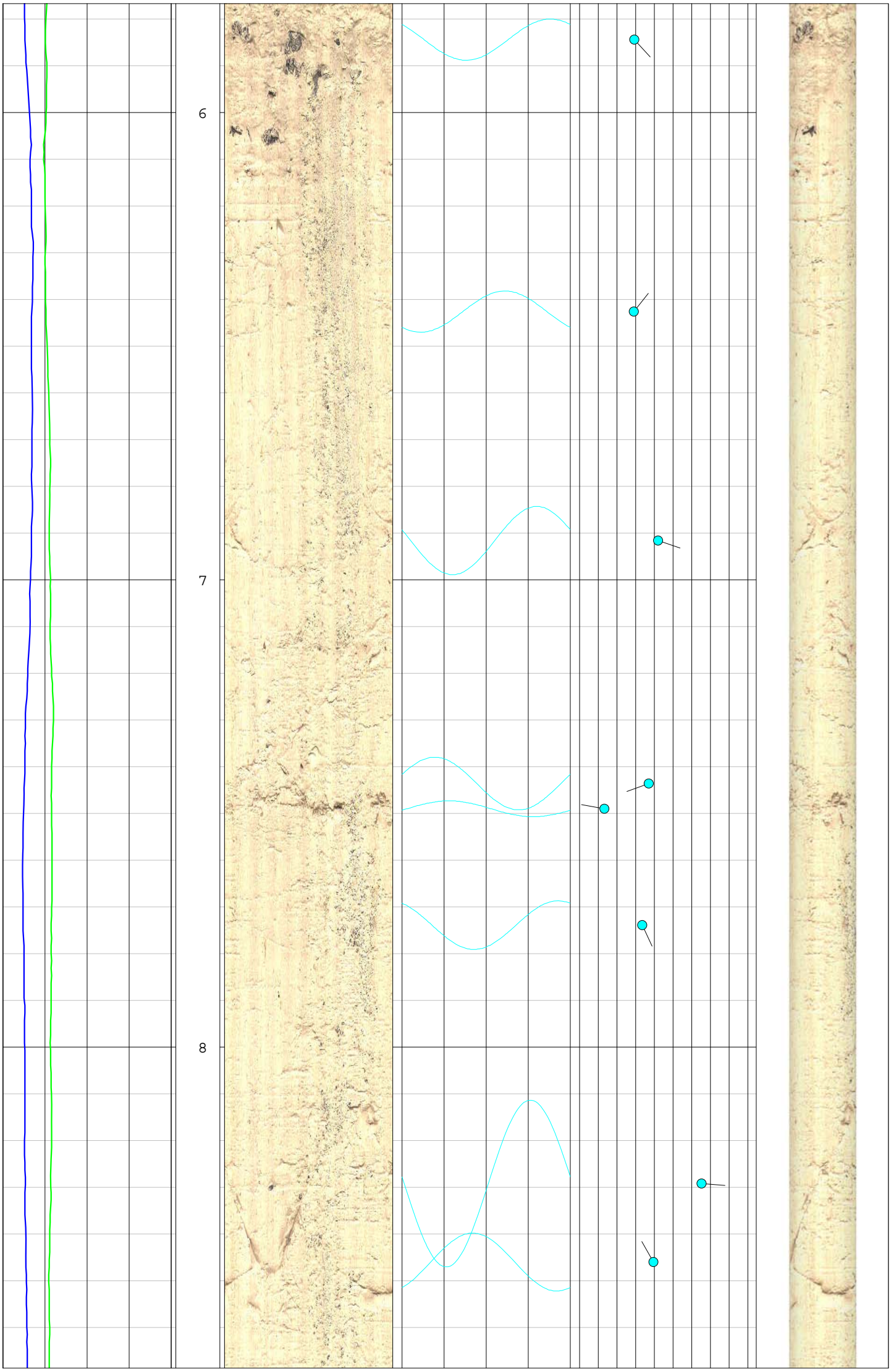
4
5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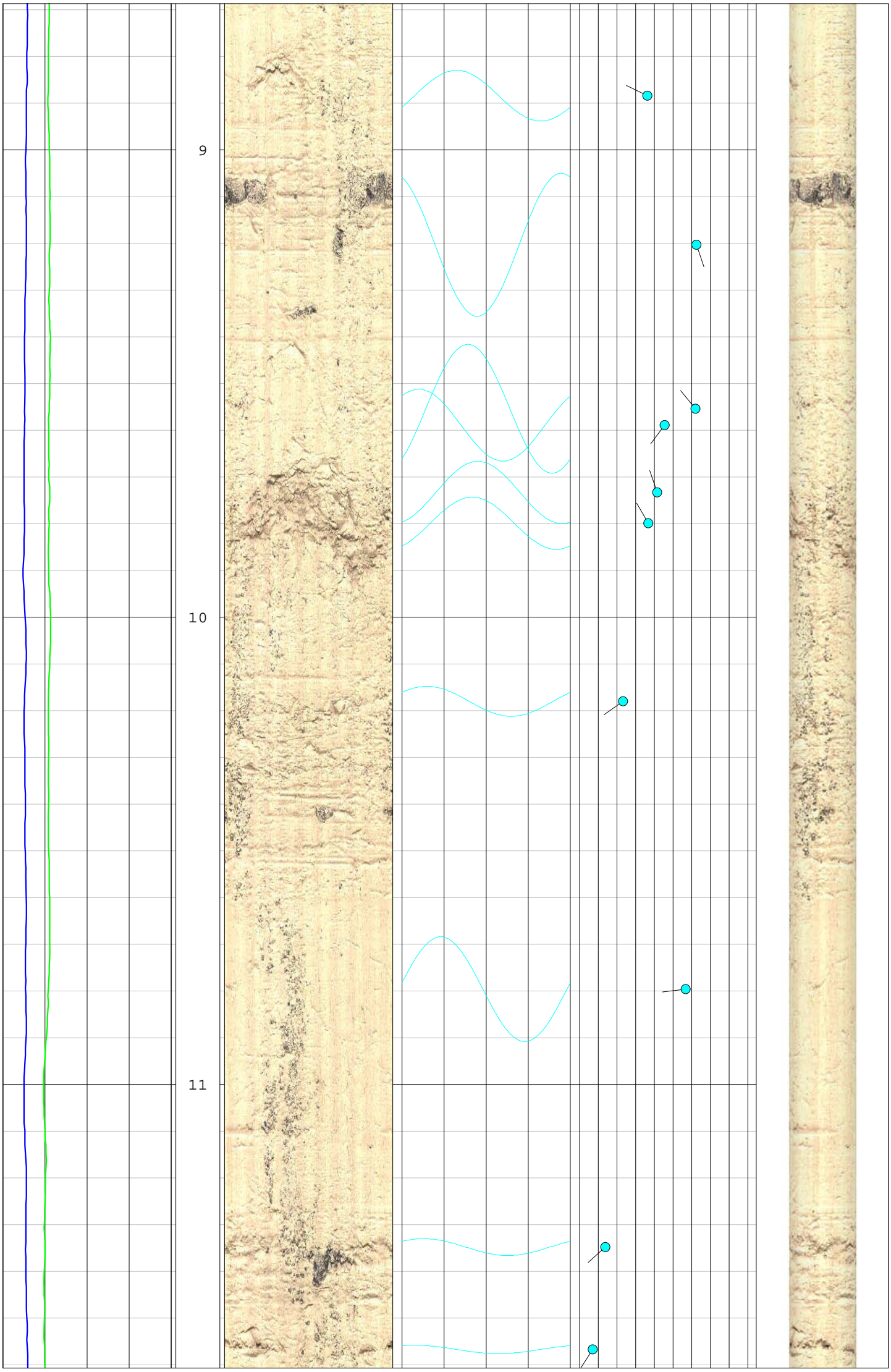
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10
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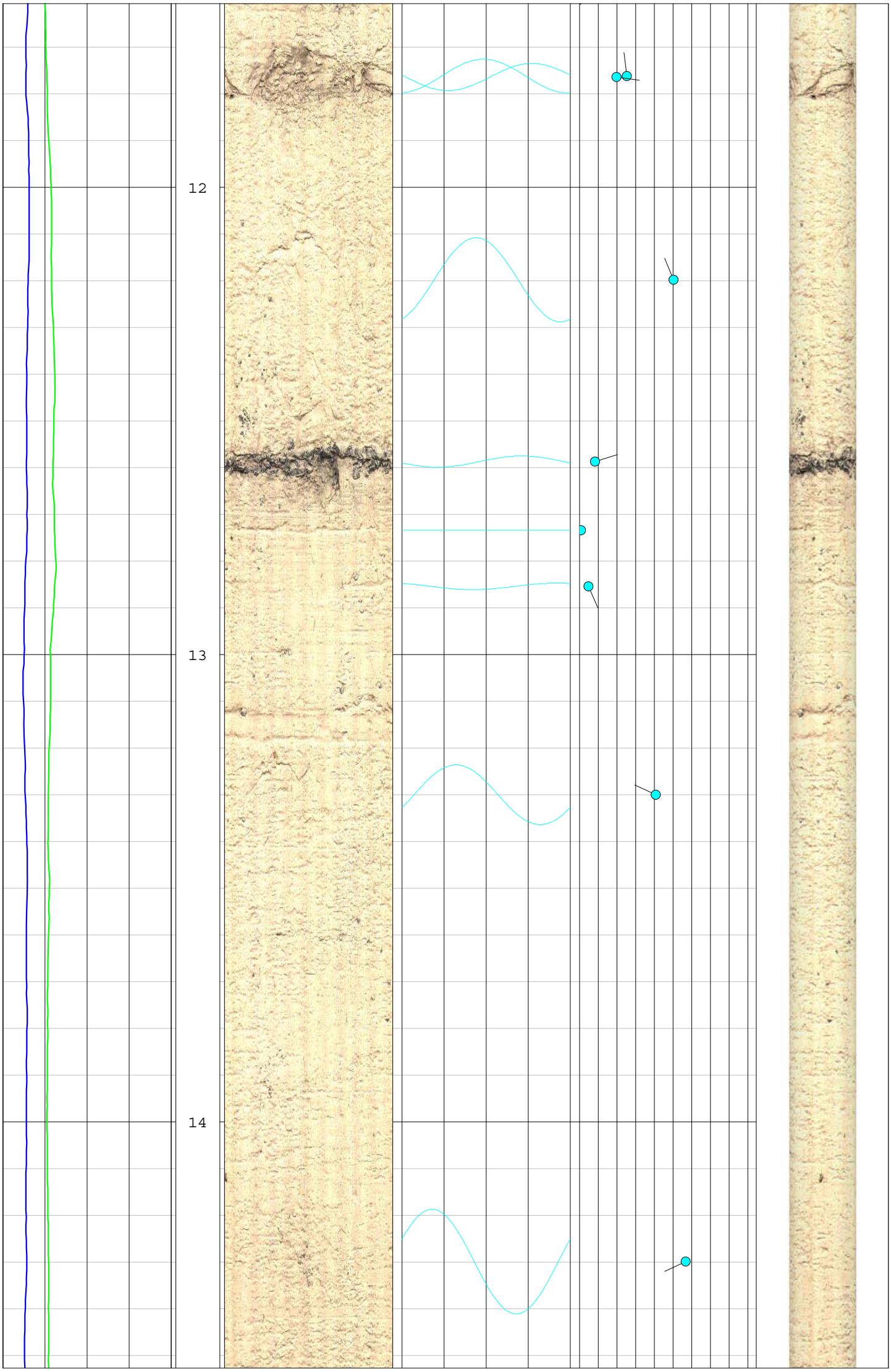
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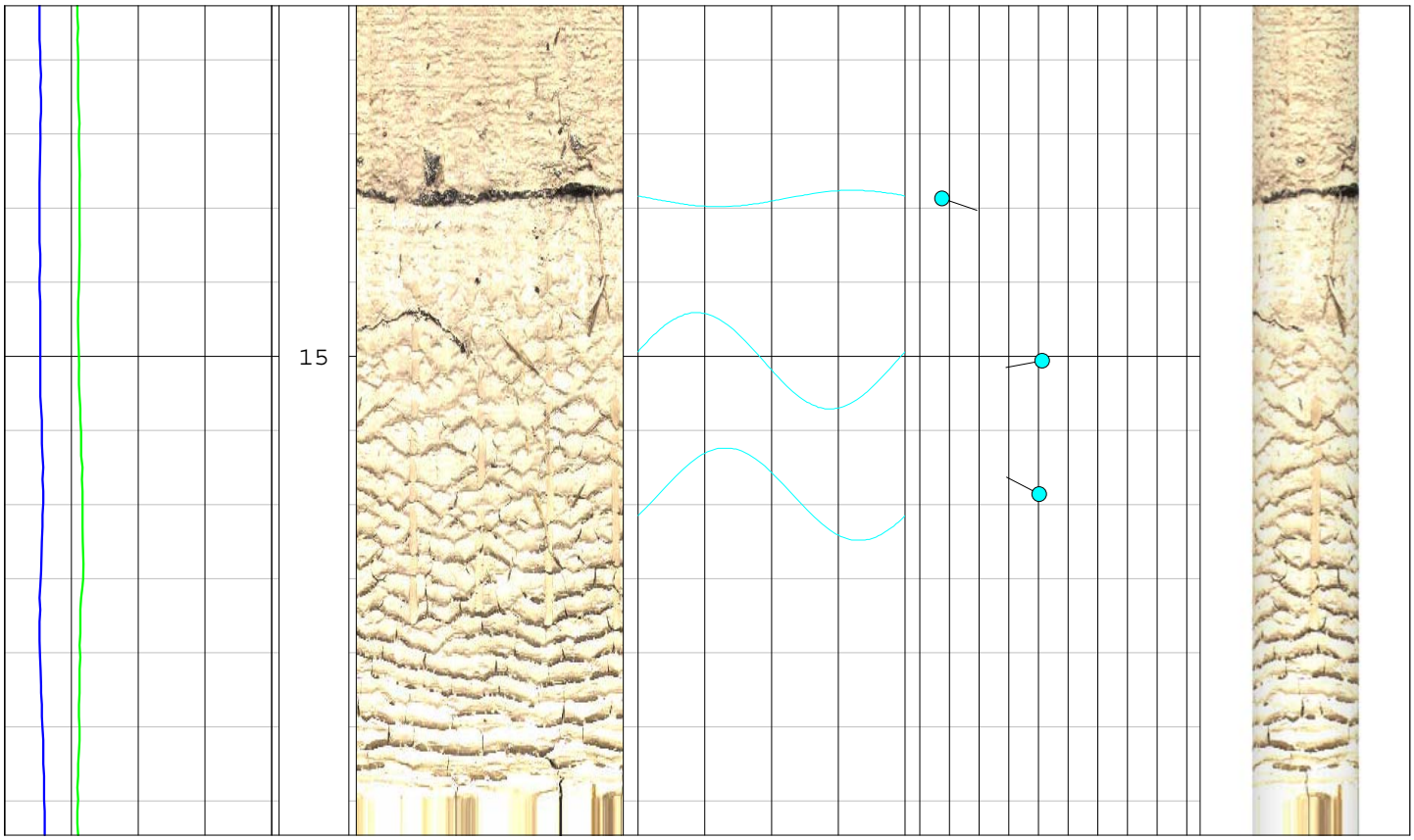
13
14


15

EUROPEAN GEOPHYSICAL SERVICES LTD

Client: **Geotechnics**

Borehole: **R71901**

Log Type: ***Composite***

Location: **A303 Stonehenge** Area: **Amesbury** Grid Ref: **411276.2E; 141648.2N** Elevation: **101.37m**

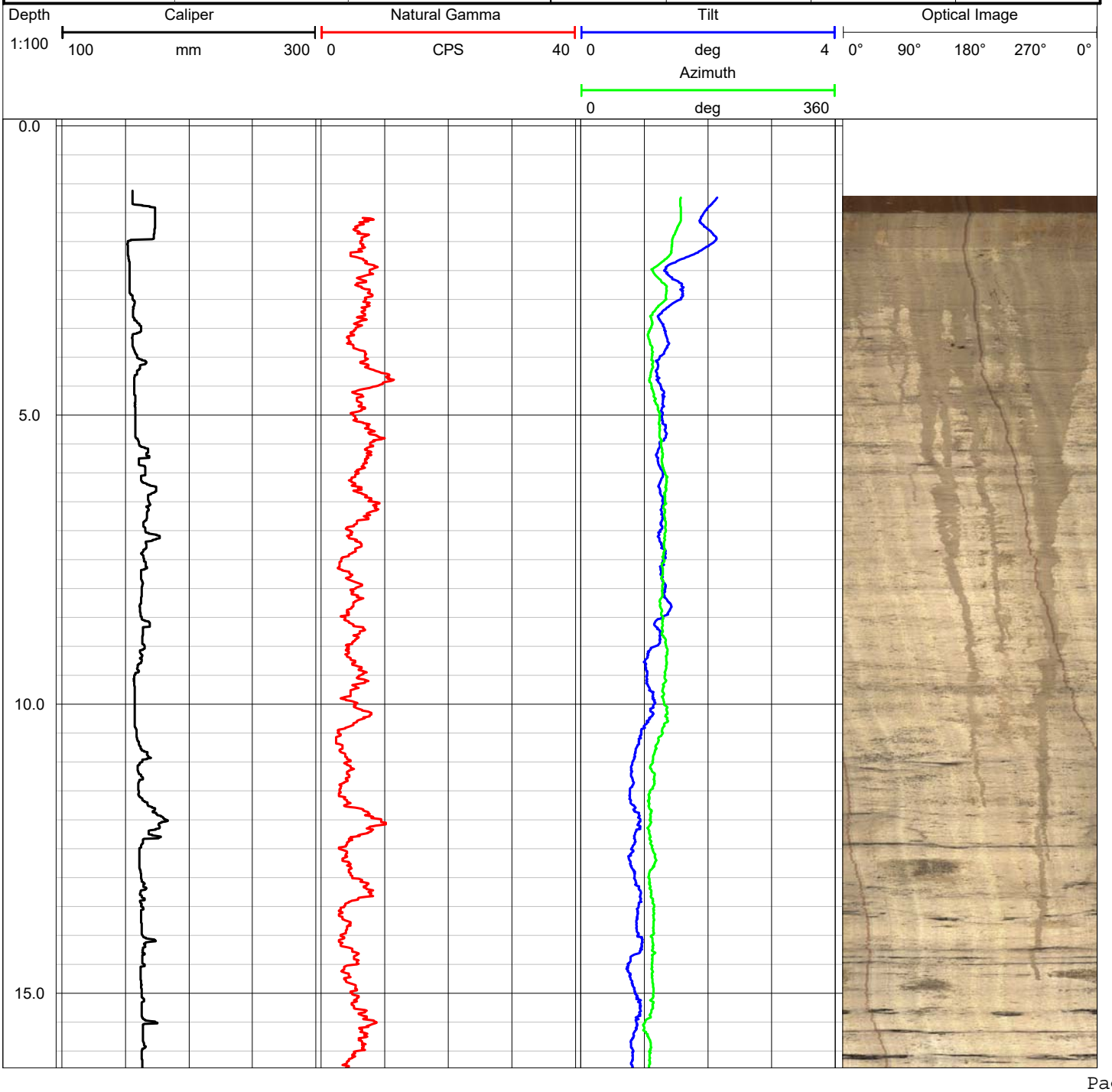
Drilled Depth: (m)	**40.0**	Date:	**27.06.2019**
Logged Depth: (m)	**39.2**	Recorded By:	**M. Kynaston**
Logging Datum:	**Ground Level**	Remarks:	Insufficuient fluid filled interval to run P&S Logger.
Logged Interval: (m)	**1.5 - 39.2**		
Fluid Level: (m)	**35.5**		

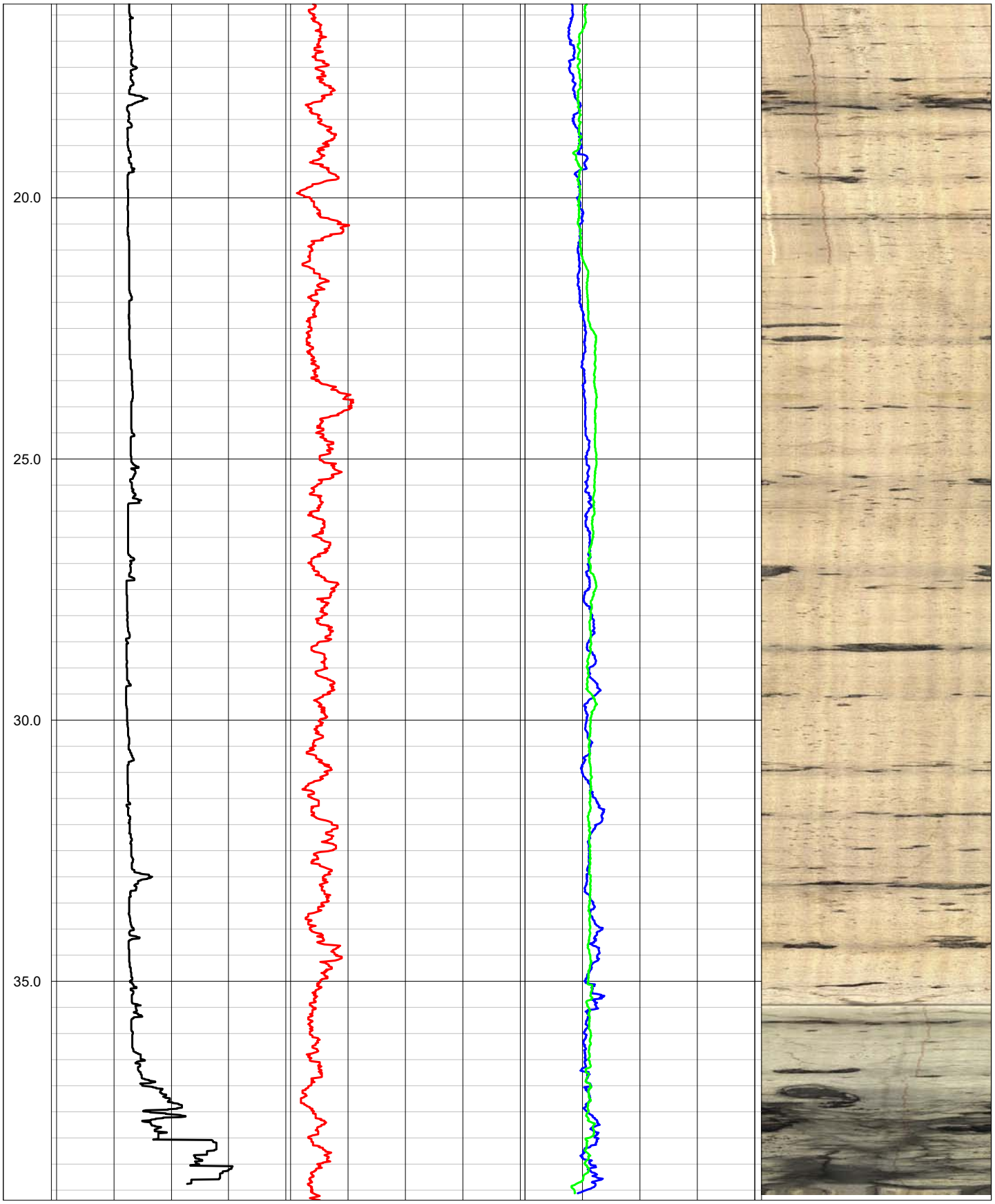
BOREHOLE RECORD

Bit: (mm)	From: (m)	To: (m)
150	**1.5**	**40.0**

CASING RECORD

Type	Size: (mm)	From: (m)	To: (m)
PVC	**150**	**0.0**	**1.5**




20.0
25.0
30.0
35.0

EUROPEAN GEOPHYSICAL SERVICES LTD

Client: **Geotechnics**

Borehole: **R71901**

Log Type: ***Image***

Location: **Stonehenge** Area: **Amesbury** Grid Ref: **411276.2E; 141648.2N** Elevation: **101.37m**

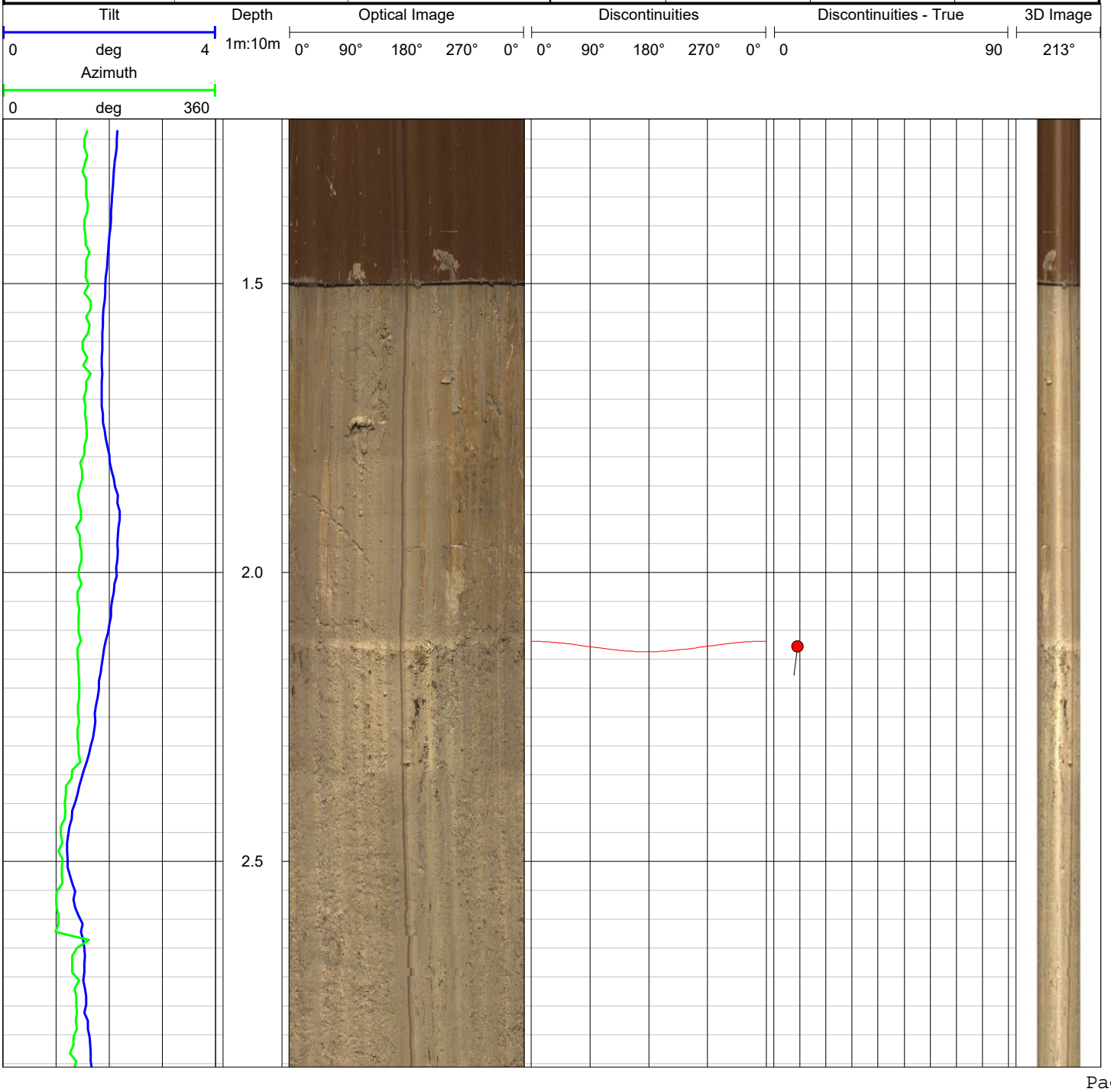
Drilled Depth: (m)	**40.0**	Date:	**27.06.2019**
Logged Depth: (m)	**39.2**	Recorded By:	**M. Kynaston**
Logging Datum:	**Ground Level**	Remarks:	
Logged Interval: (m)	**1.5 - 39.2**		
Fluid Level: (m)	**35.5**		

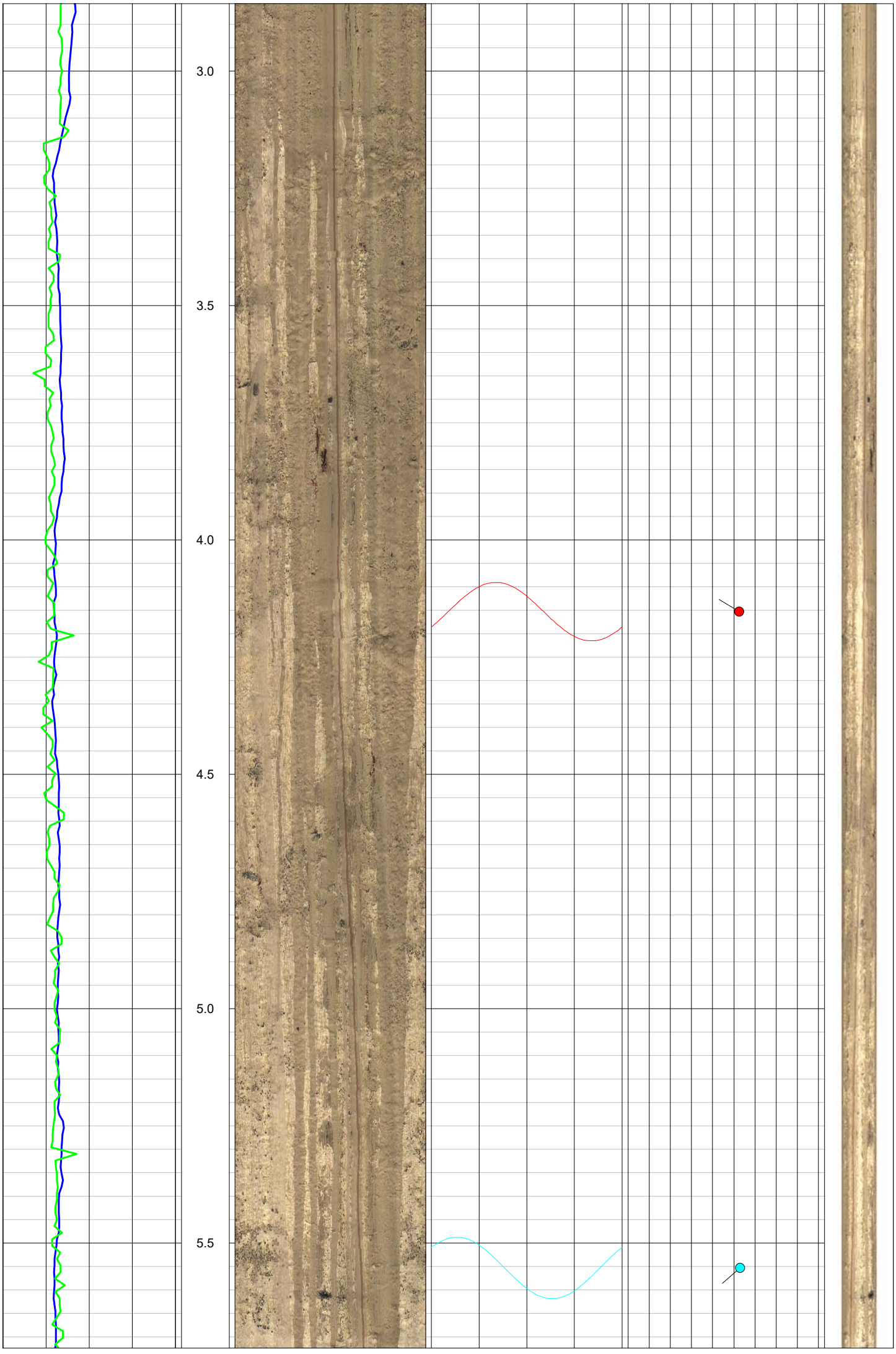
BOREHOLE RECORD

Bit: (mm)	From: (m)	To: (m)
150	**1.5**	**40.0**

CASING RECORD

Type	Size: (mm)	From: (m)	To: (m)
PVC	**150**	**0.0**	**1.5**

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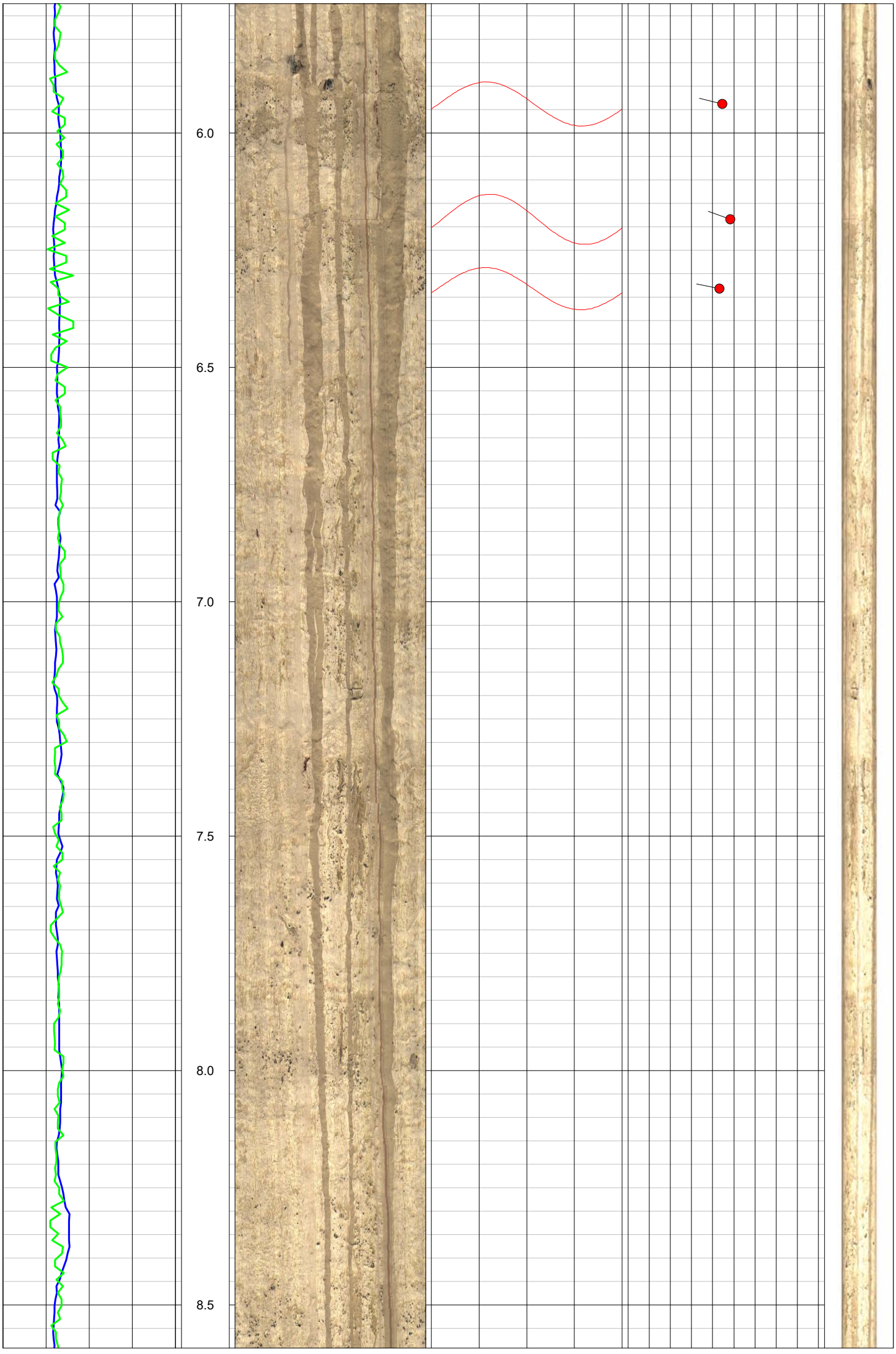
4.5
5.0
5.5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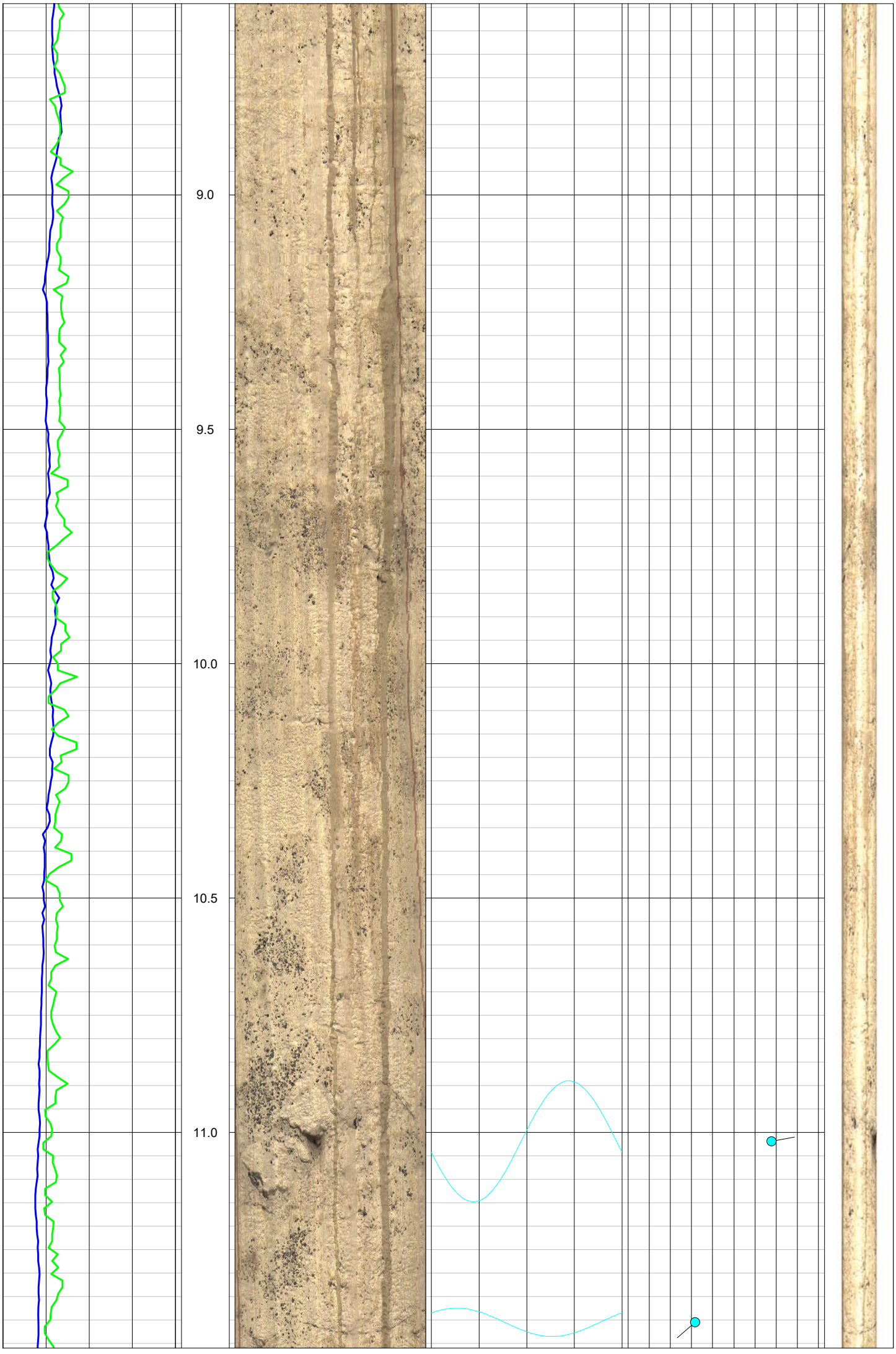
7.5
8.0
8.5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9.5
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10.5
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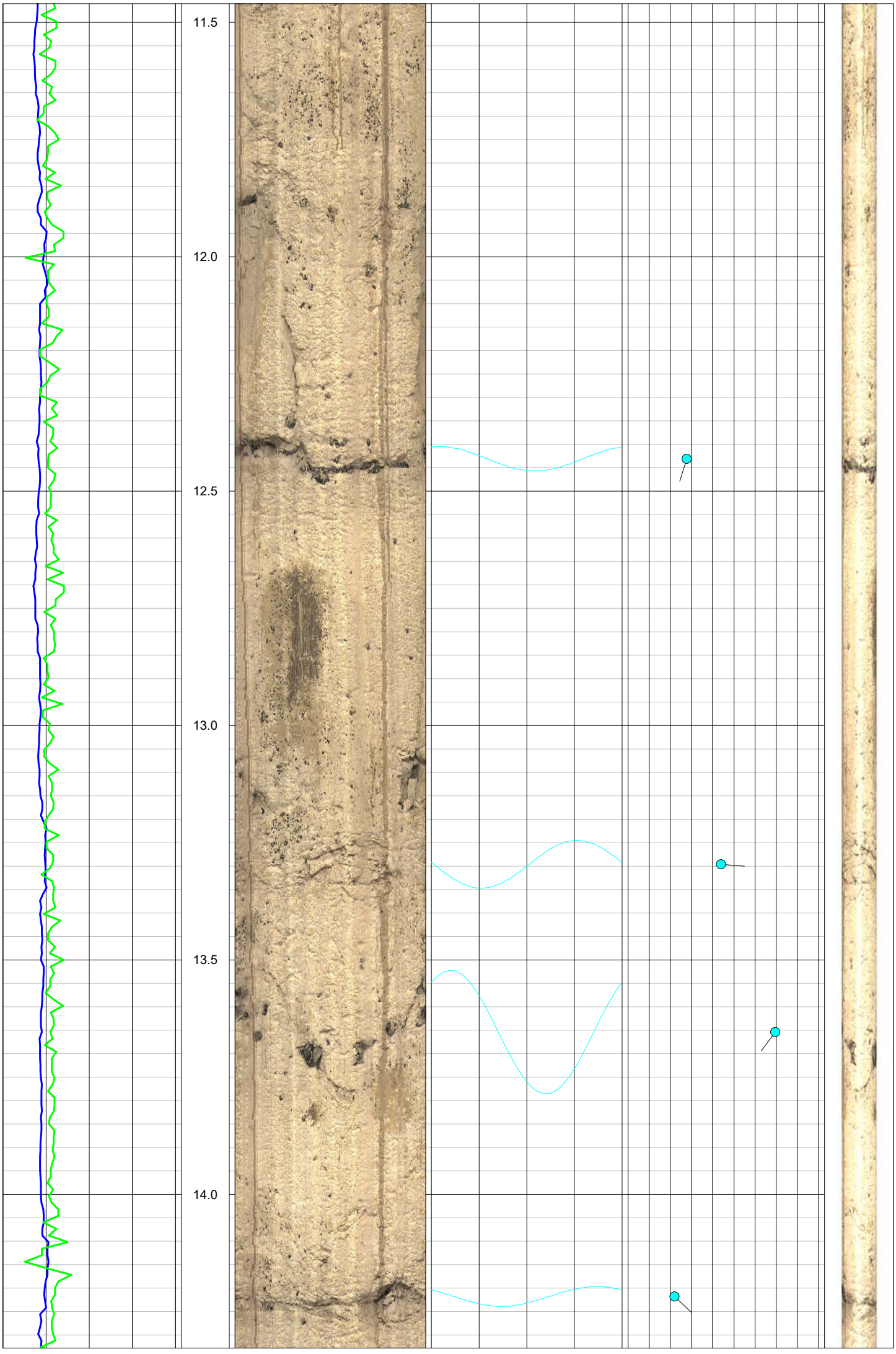
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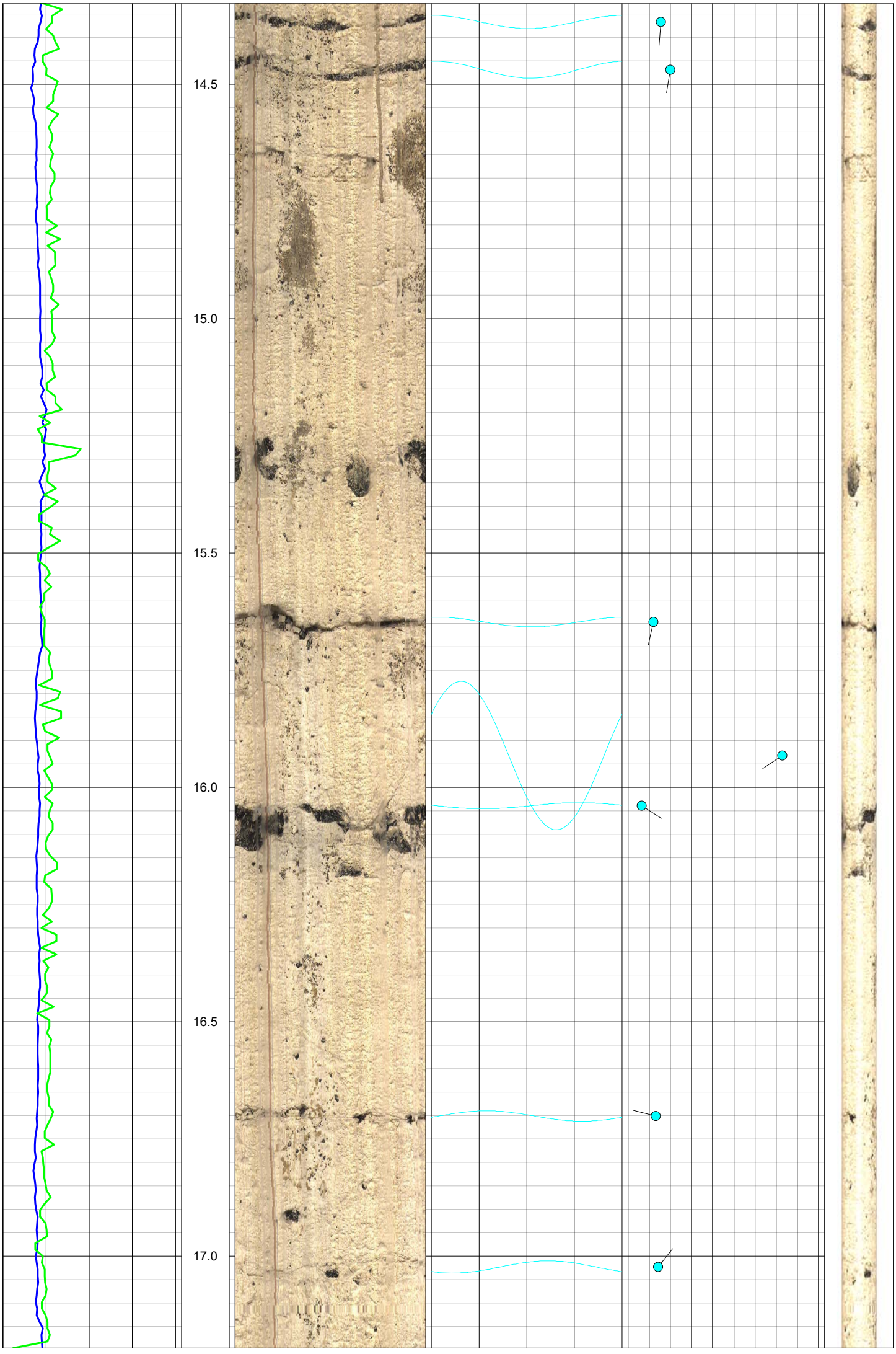
14.0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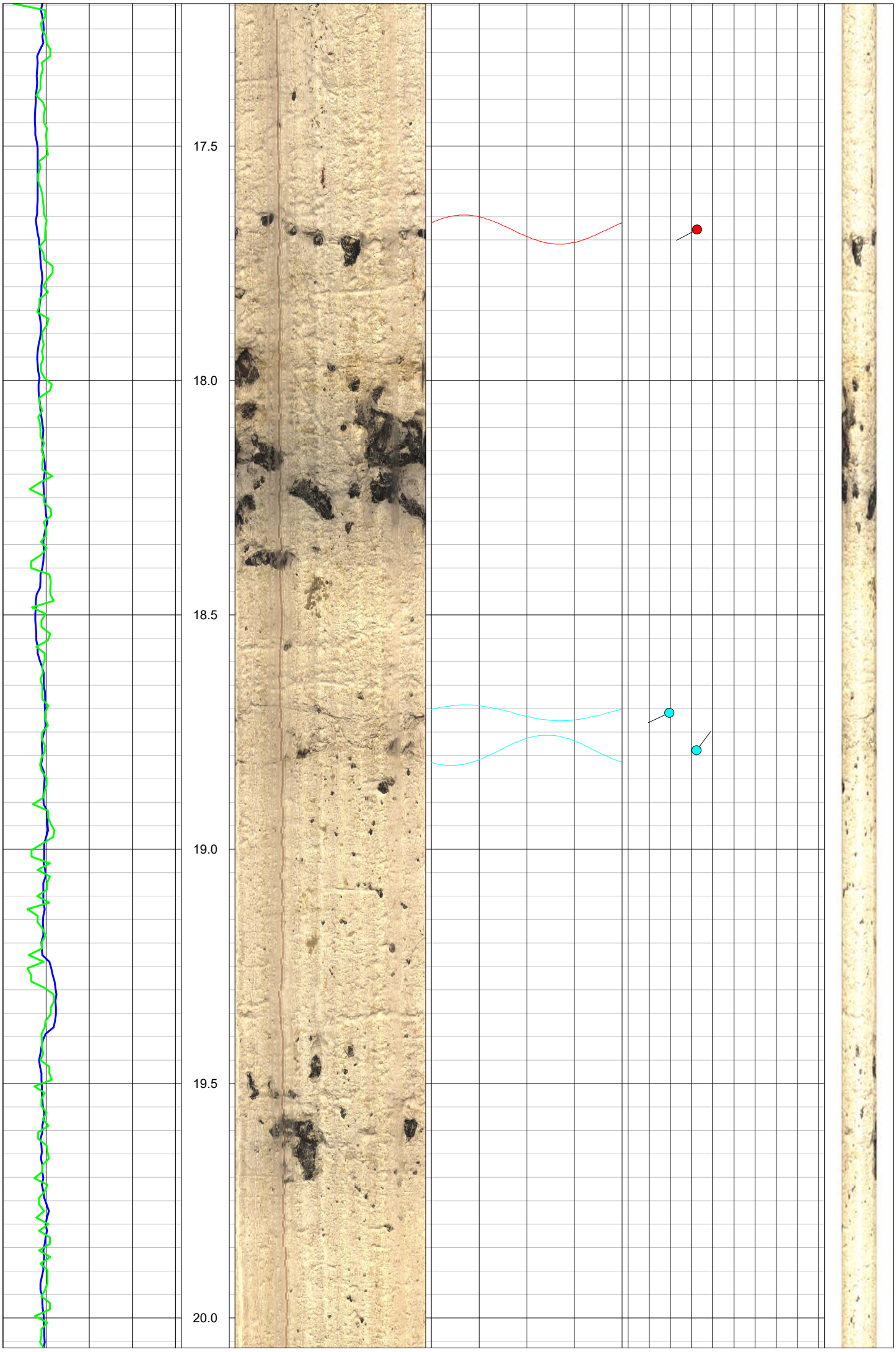
16.0
16.5
17.0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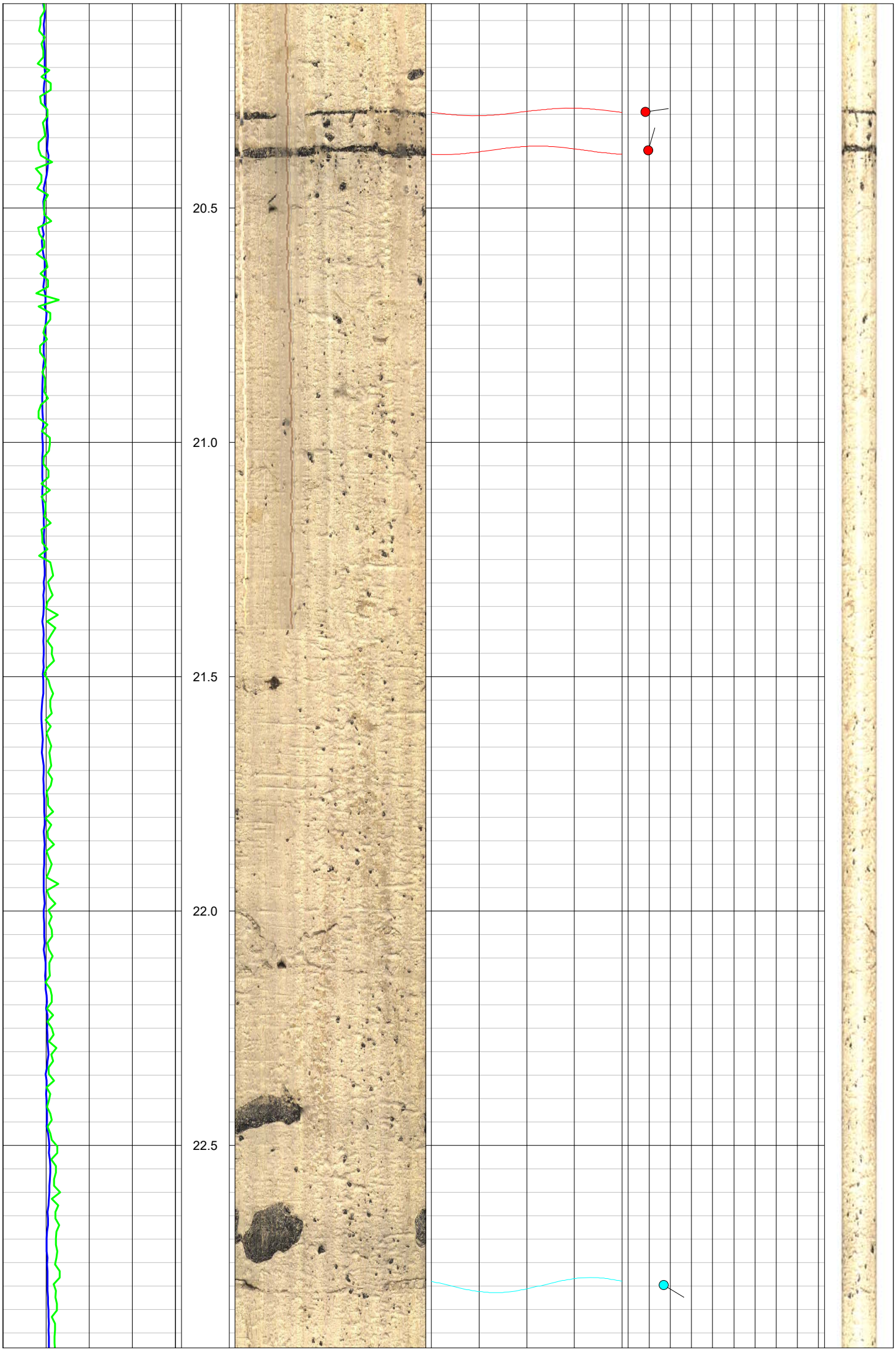
18.5
19.0
19.5
20.0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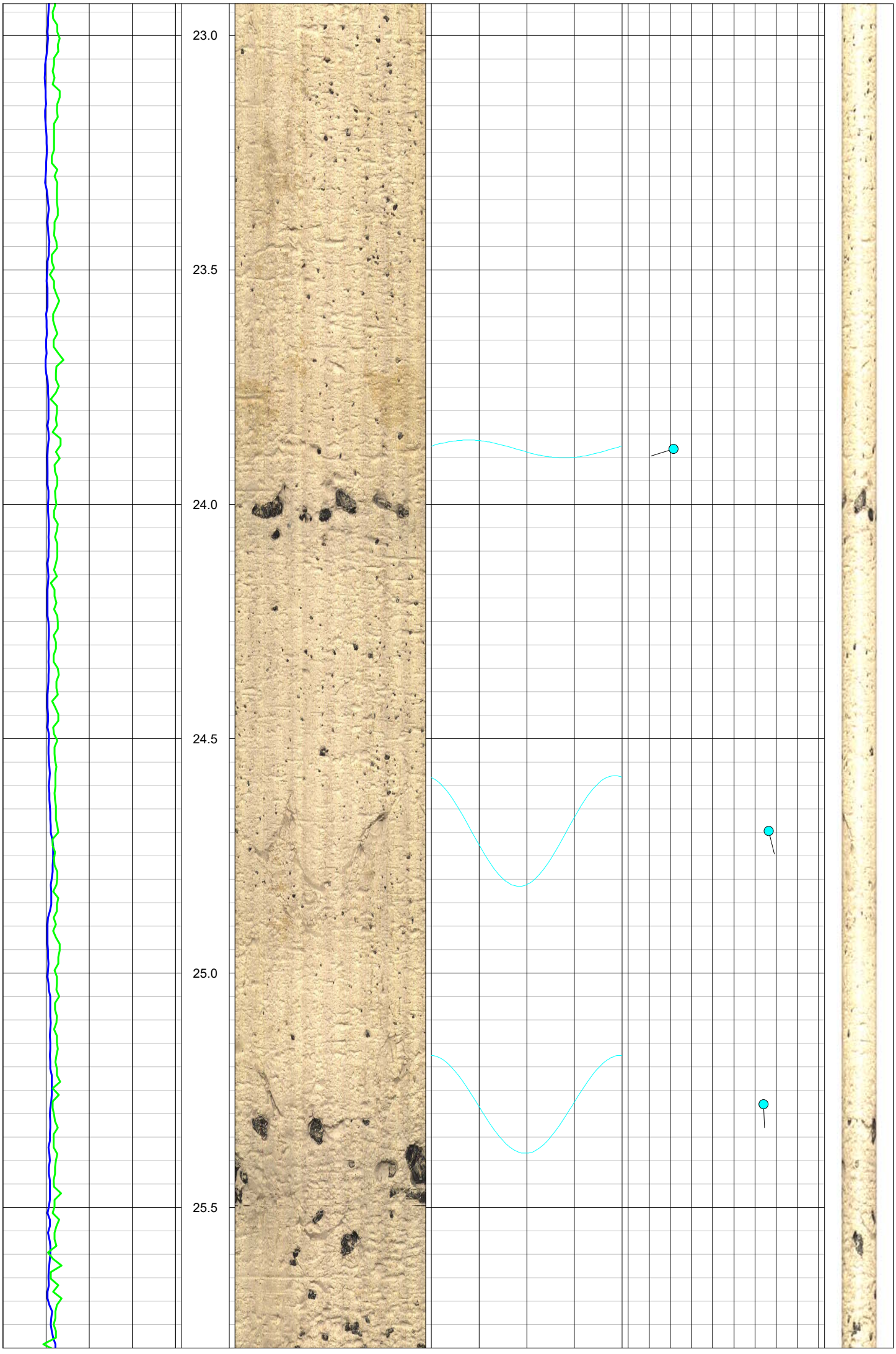
22.0
22.5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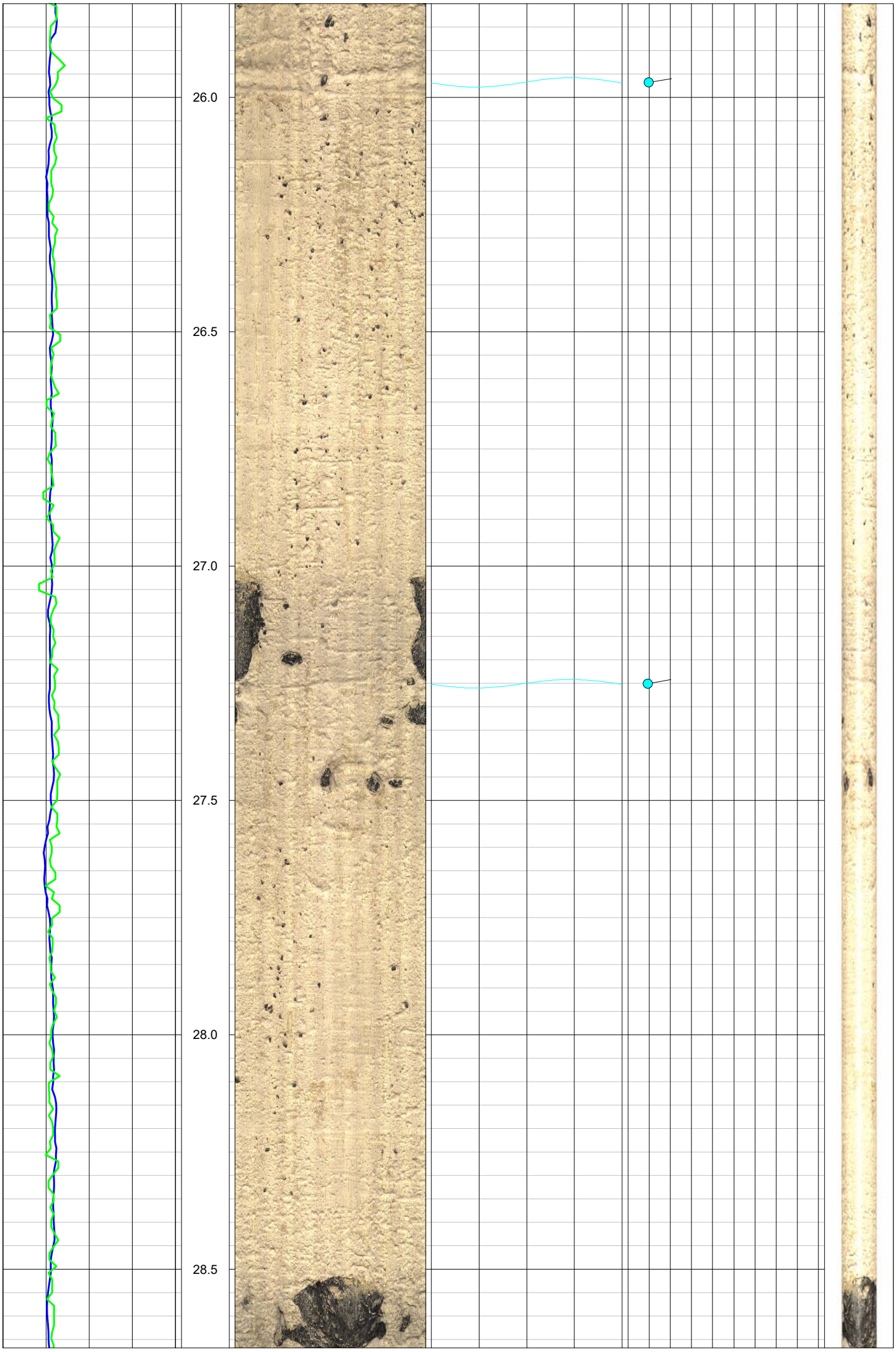
24.5
25.0
25.5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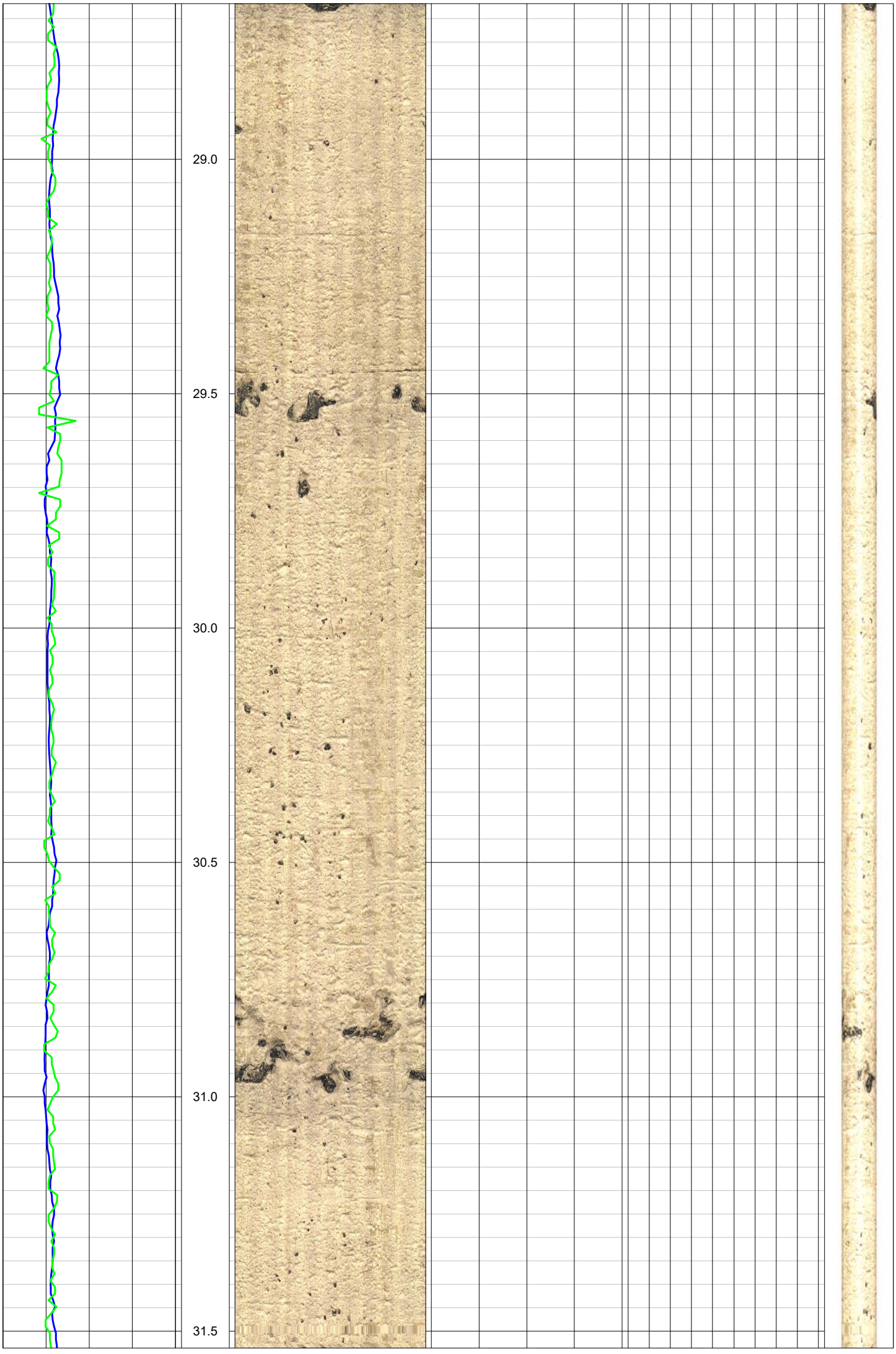
26.5
27.0
27.5
28.0
28.5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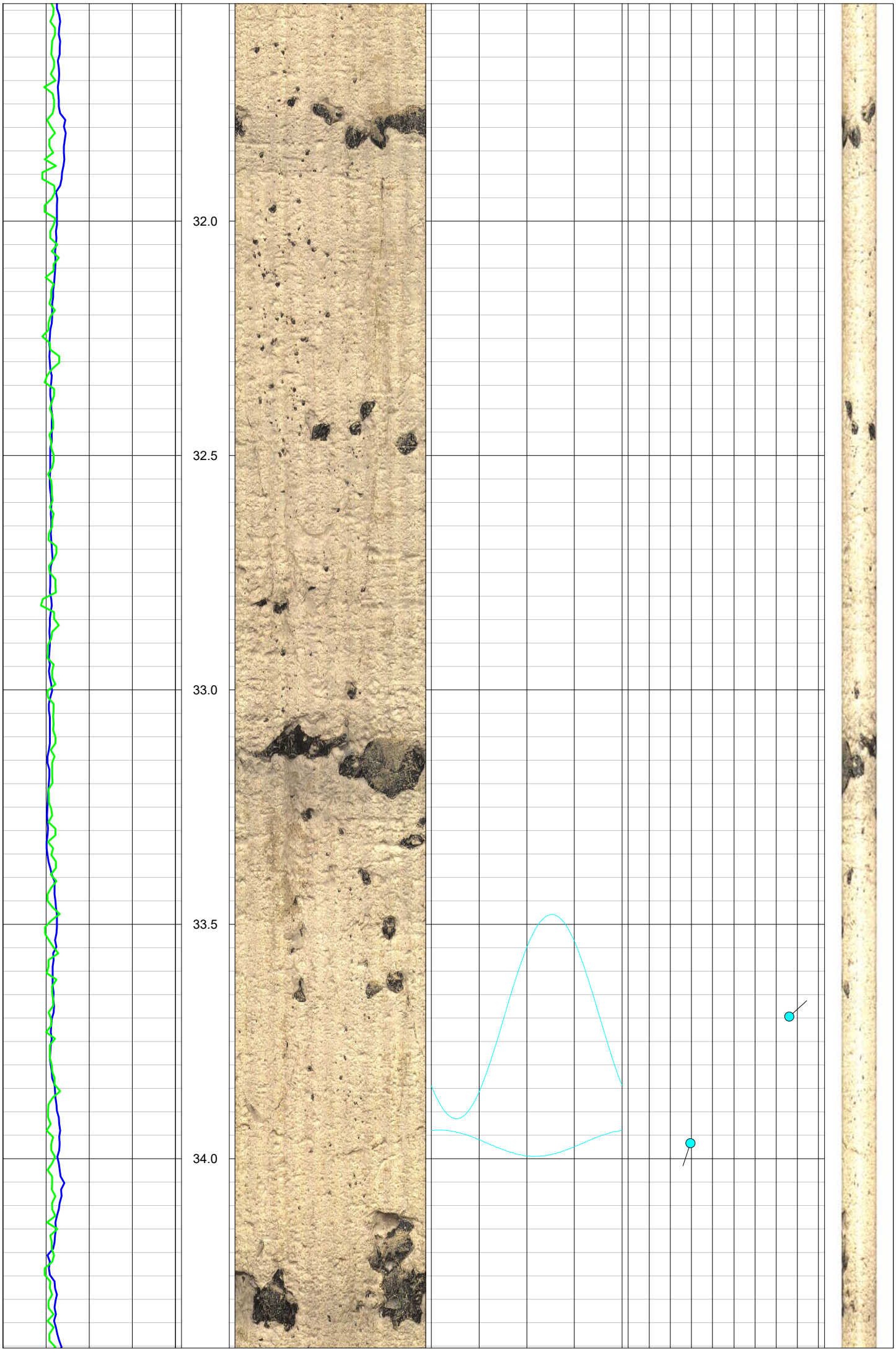
30.5
31.0
31.5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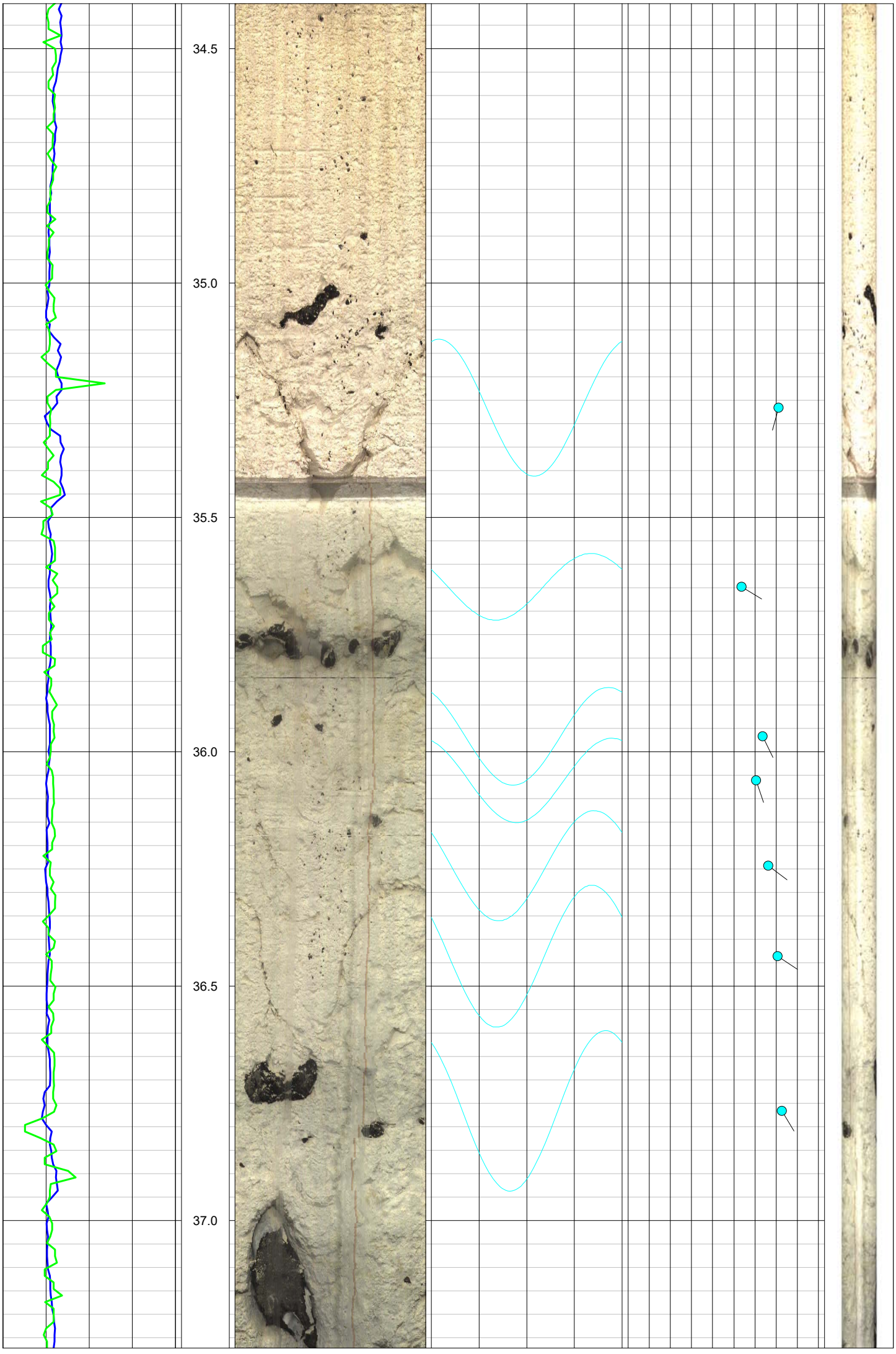
33.0
33.5
34.0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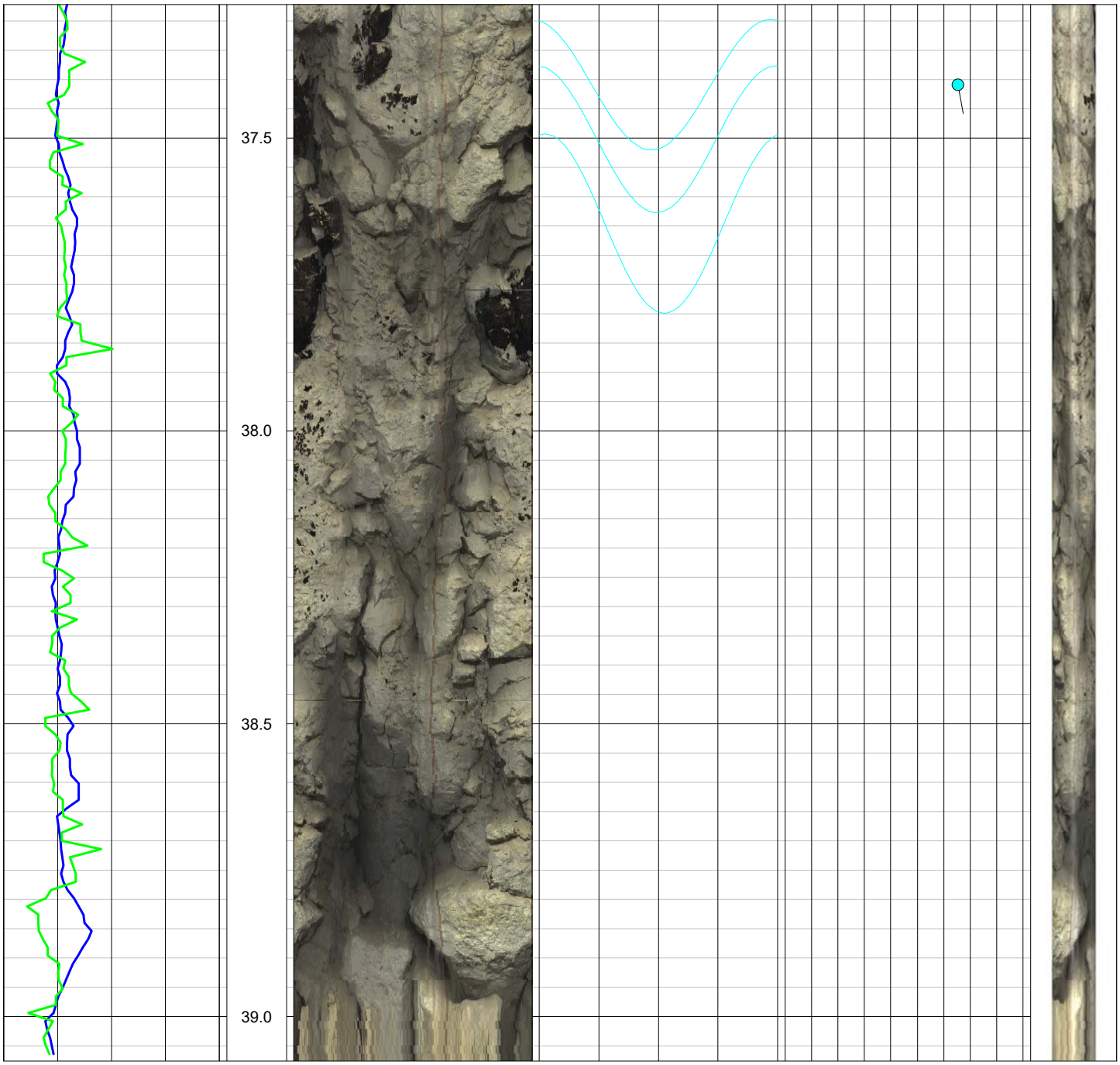
37.0


37.5
38.0
38.5
39.0

EUROPEAN GEOPHYSICAL SERVICES LTD

Client: **Geotechnics**

Borehole: **R71903**

Log Type: ***Composite***

Location: **A303 Stonehenge** Area: **Amesbury** Grid Ref: **411650.6E; 141725.5N** Elevation: **105.18m**

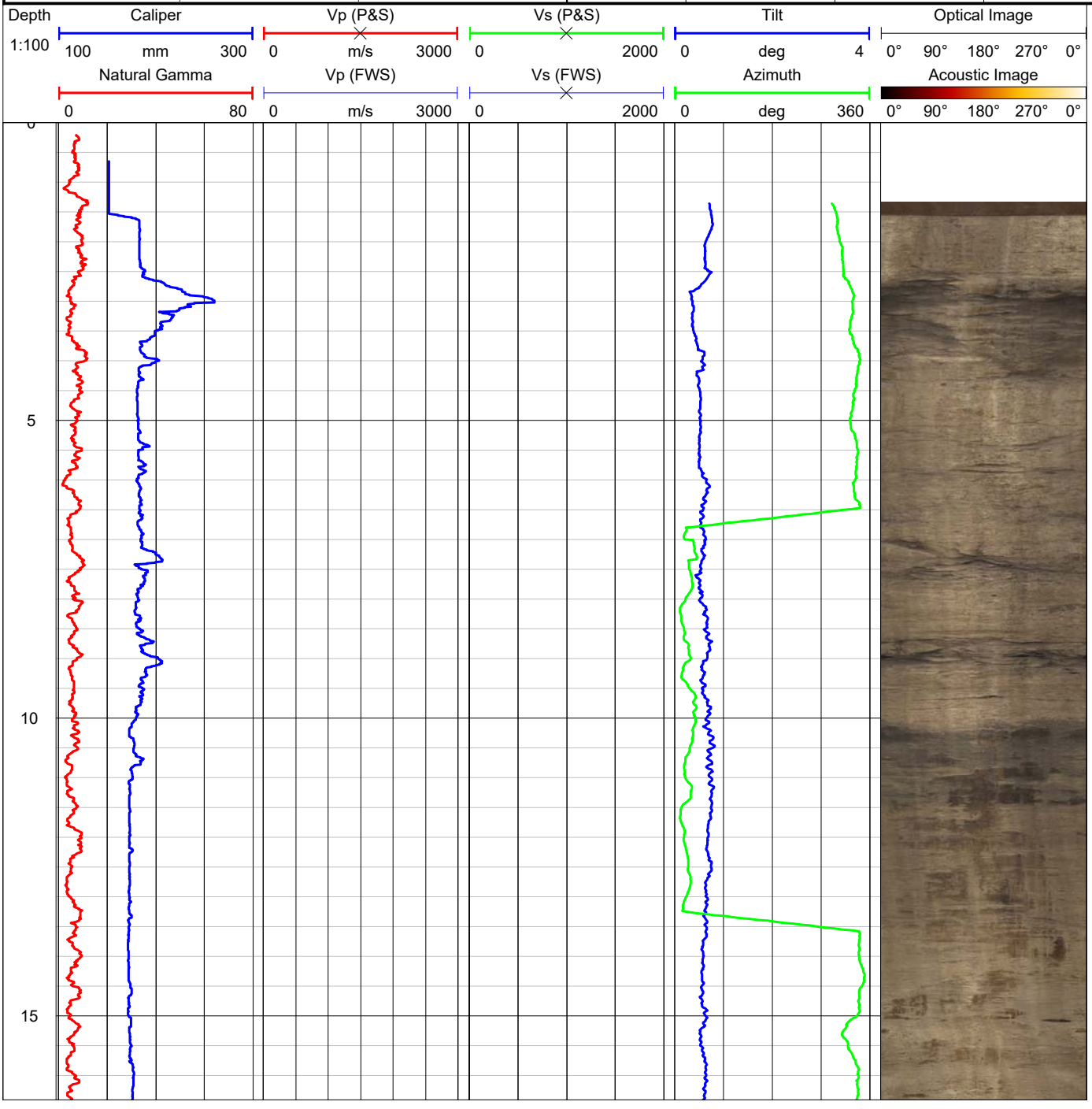
Drilled Depth: (m)	**50.0**	Date:	**12.07.2019**
Logged Depth: (m)	**47.2**	Recorded By:	**M. Kynaston**
Logging Datum:	**Ground Level**	Remarks:	
Logged Interval: (m)	**0 - 47.2**		
Fluid Level: (m)	**38.1**		

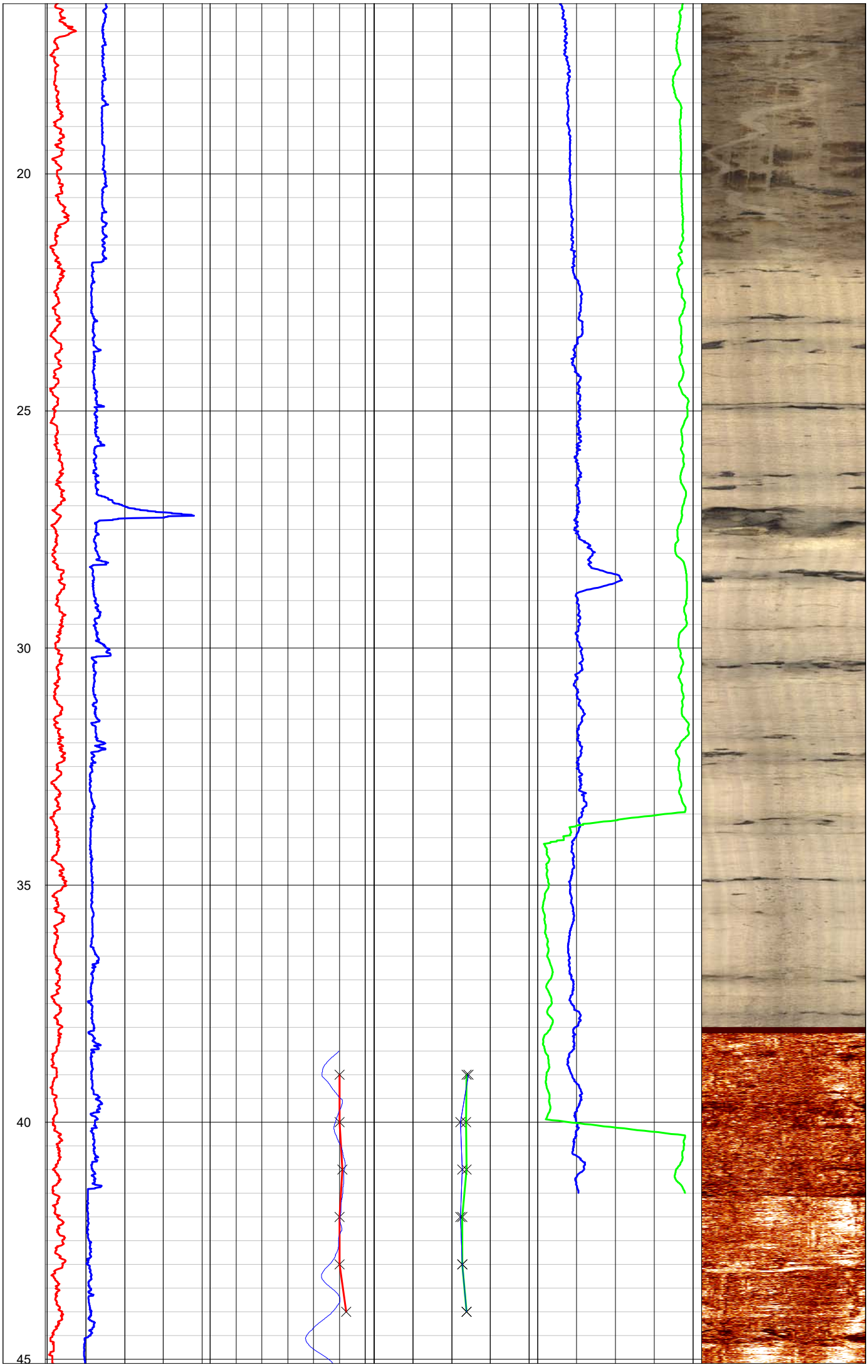
BOREHOLE RECORD

Bit: (mm)	From: (m)	To: (m)
150	**1.5**	**50.0**

CASING RECORD

Type	Size: (mm)	From: (m)	To: (m)
PVC	**150**	**0.0**	**1.5**

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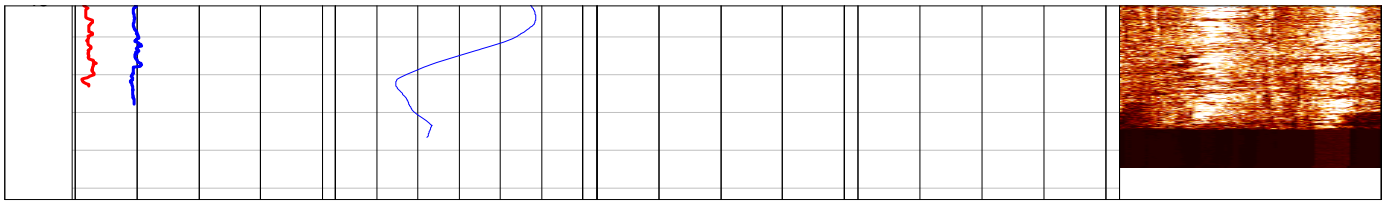


EUROPEAN GEOPHYSICAL SERVICES LTD

Client: **Geotechnics**

Borehole: **R71903**

Log Type: ***Image***

Location: **A303 Stonehenge** Area: **Amesbury** Grid Ref: **411650.6E; 141725.5N** Elevation: **105.18m**

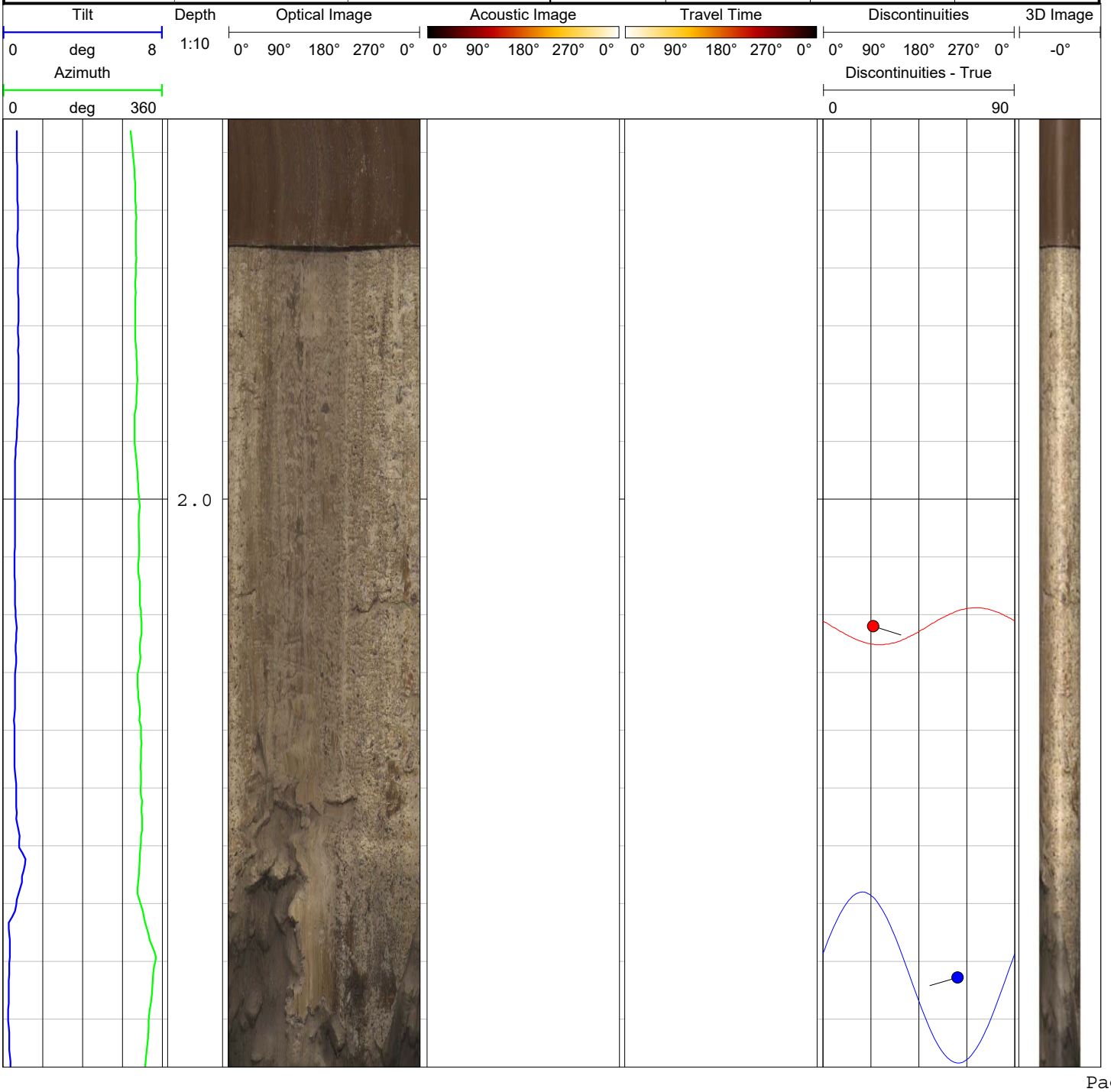
Drilled Depth: (m)	**50.0**	Date:	**12.07.2019**
Logged Depth: (m)	**47.2**	Recorded By:	**M. Kynaston**
Logging Datum:	**Ground Level**	Remarks:	
Logged Interval: (m)	**1.5 - 47.2**		
Fluid Level: (m)	**38.1**		

BOREHOLE RECORD

Bit: (mm)	From: (m)	To: (m)
150	**1.5**	**50.0**

CASING RECORD

Type	Size: (mm)	From: (m)	To: (m)
PVC	**150**	**0.0**	**1.5**



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4.0
5.0

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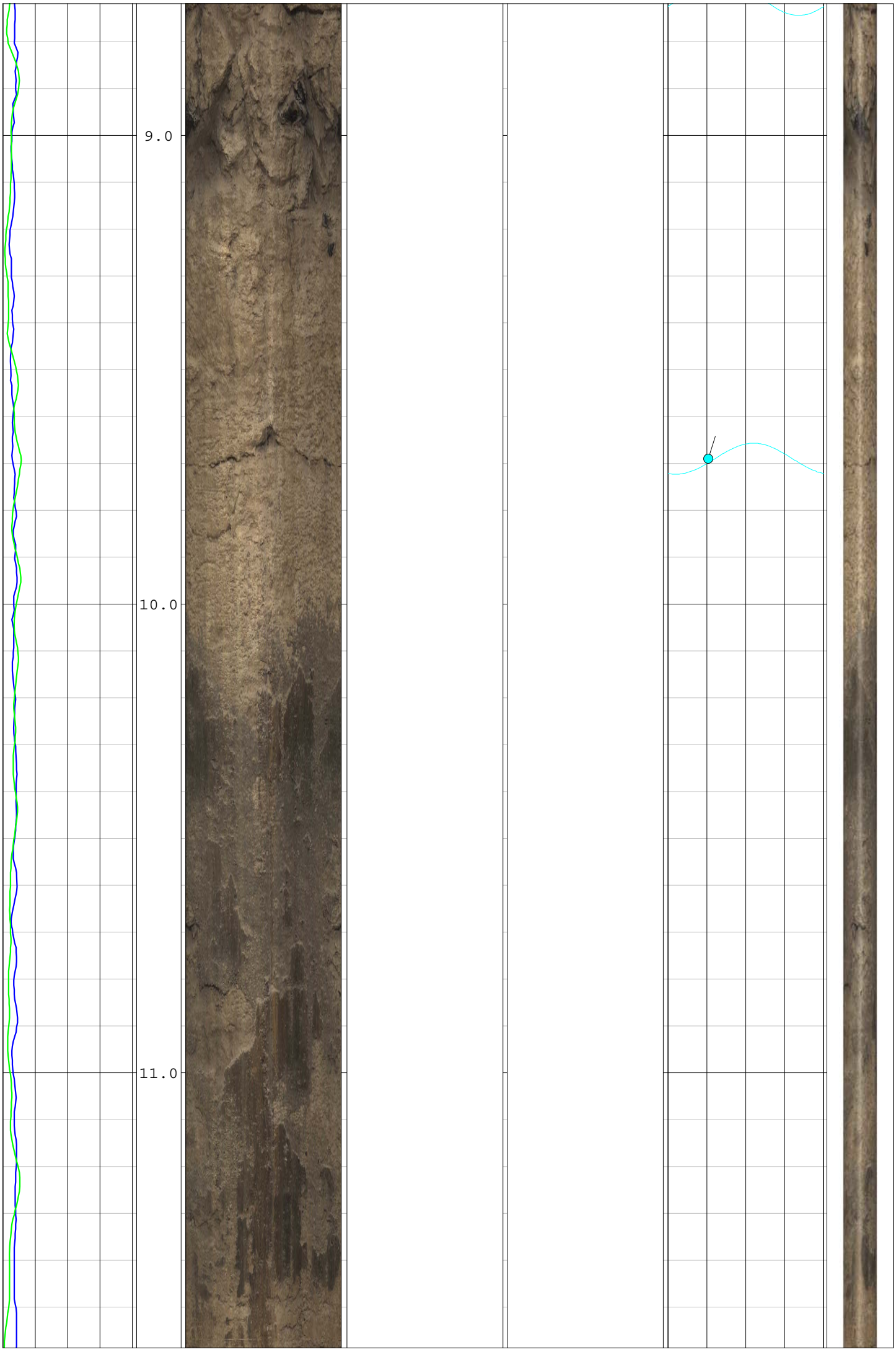
7.0
8.0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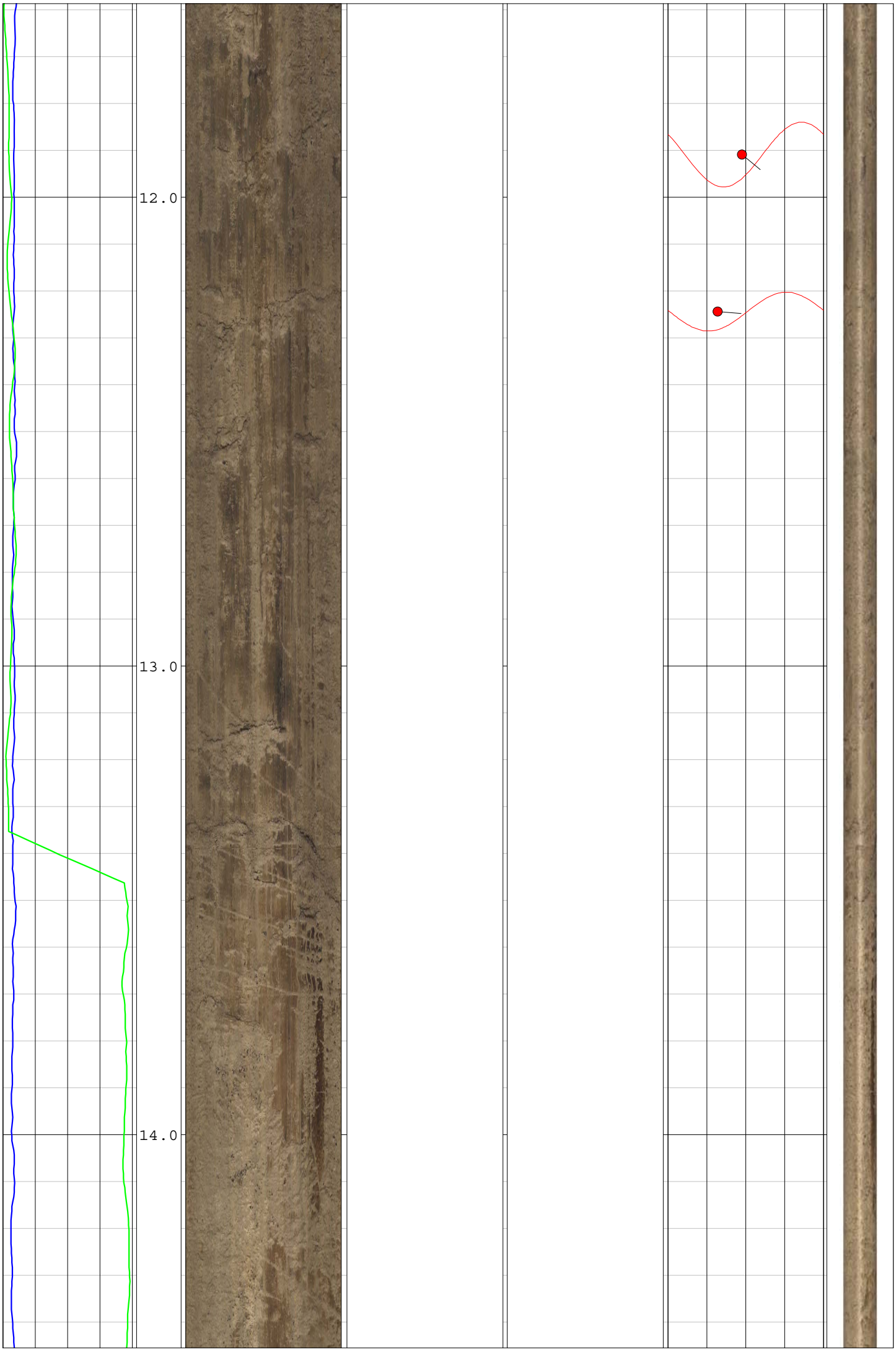
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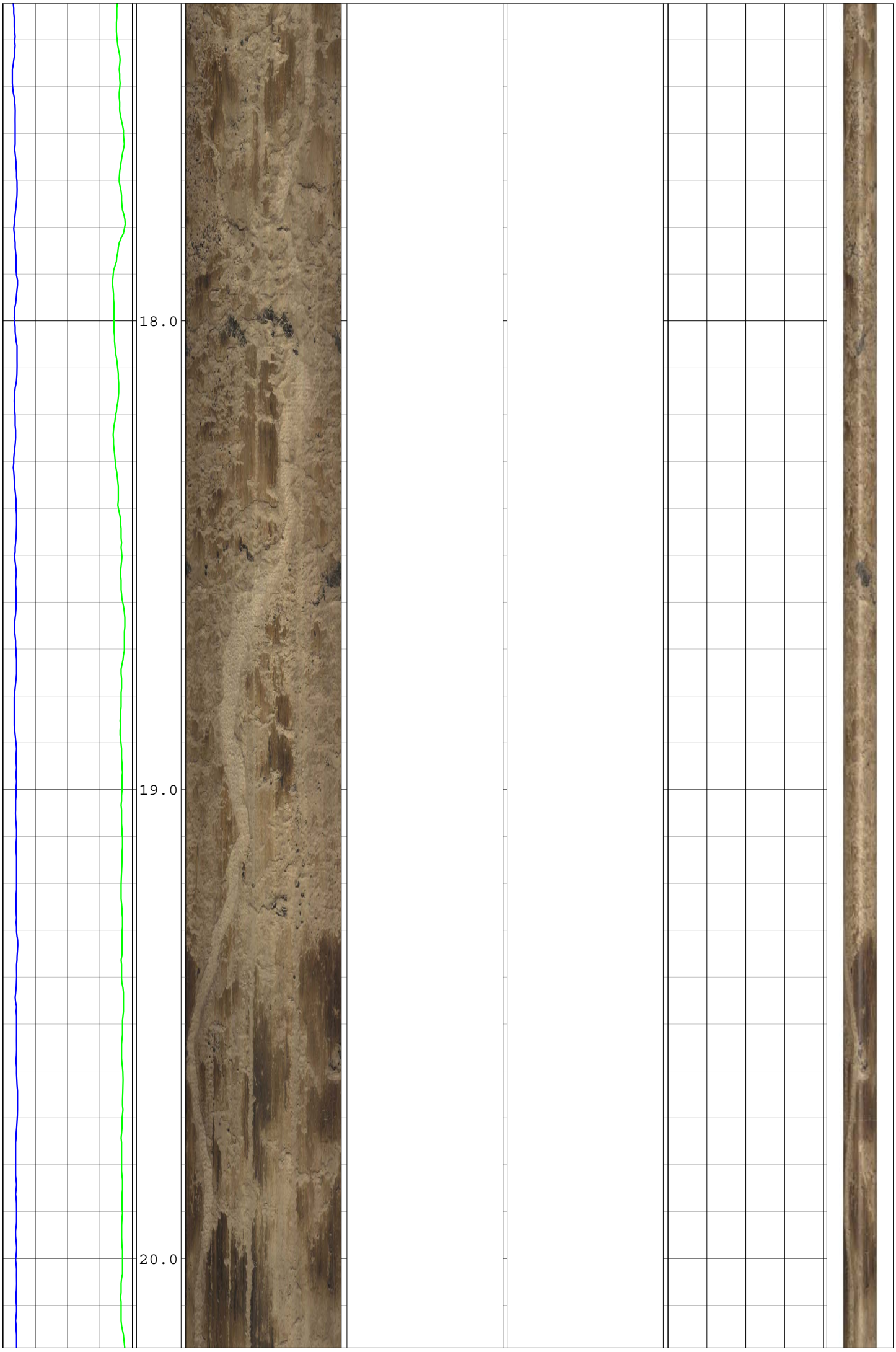
15.0
16.0
17.0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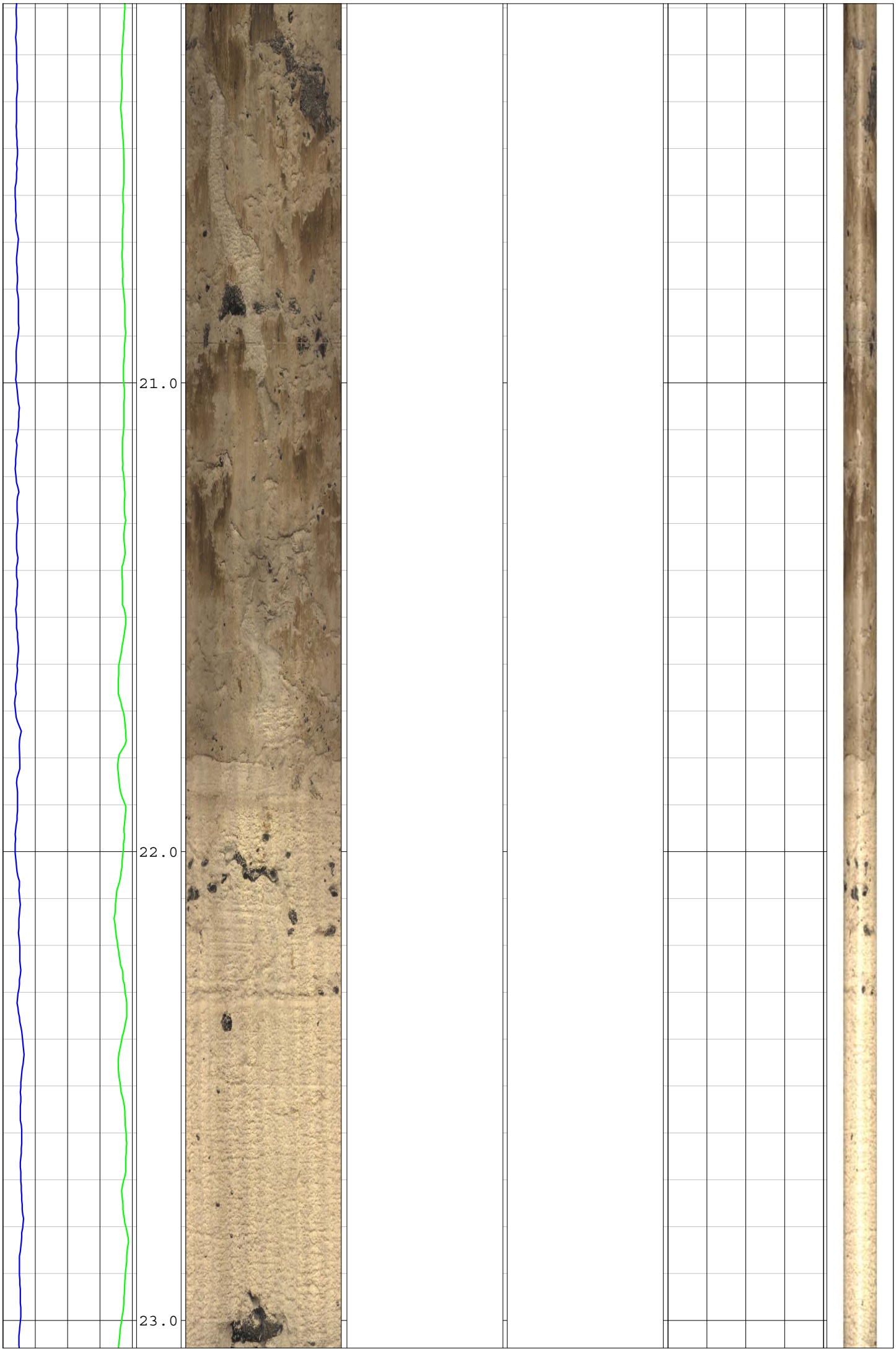
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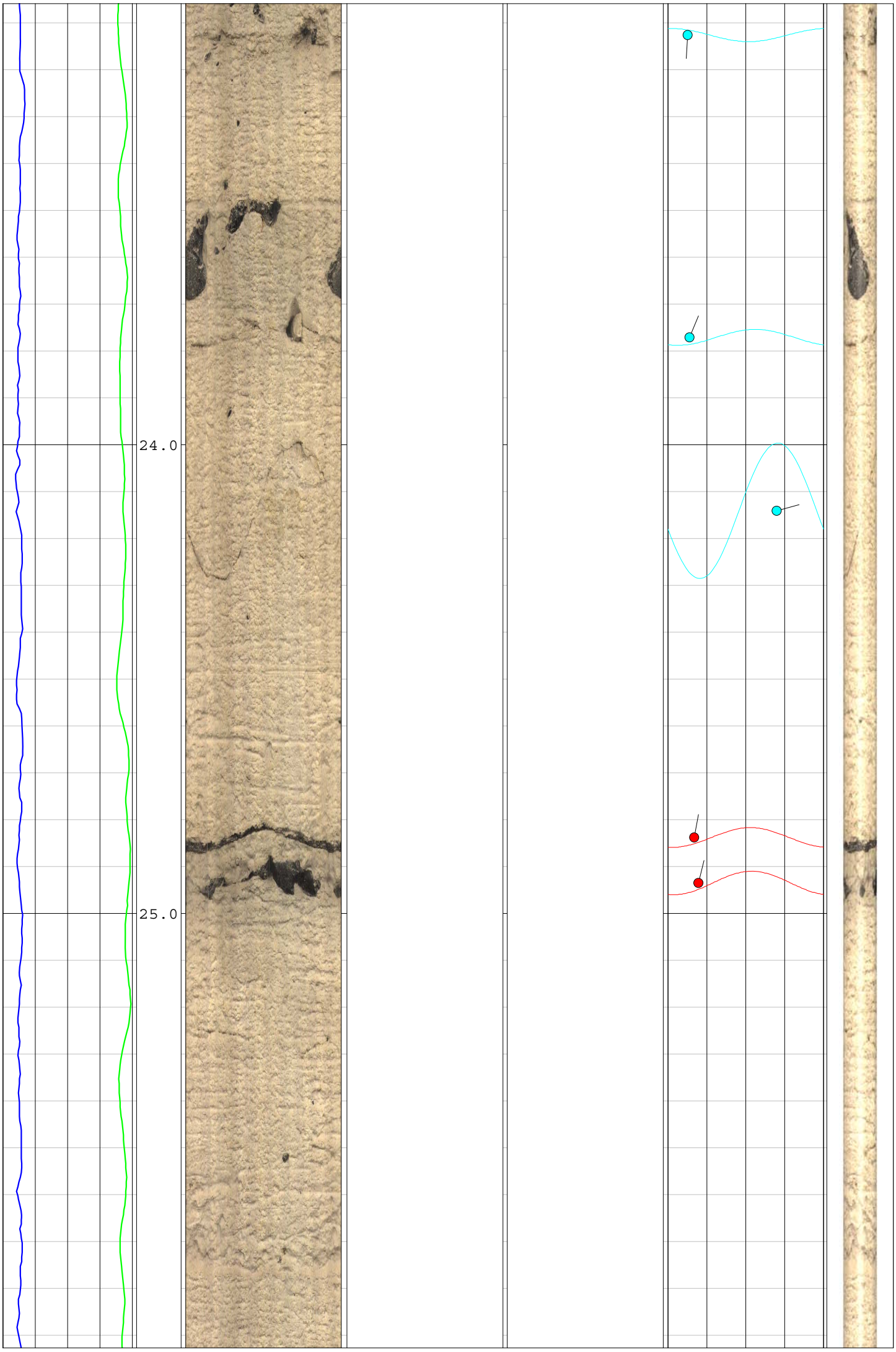
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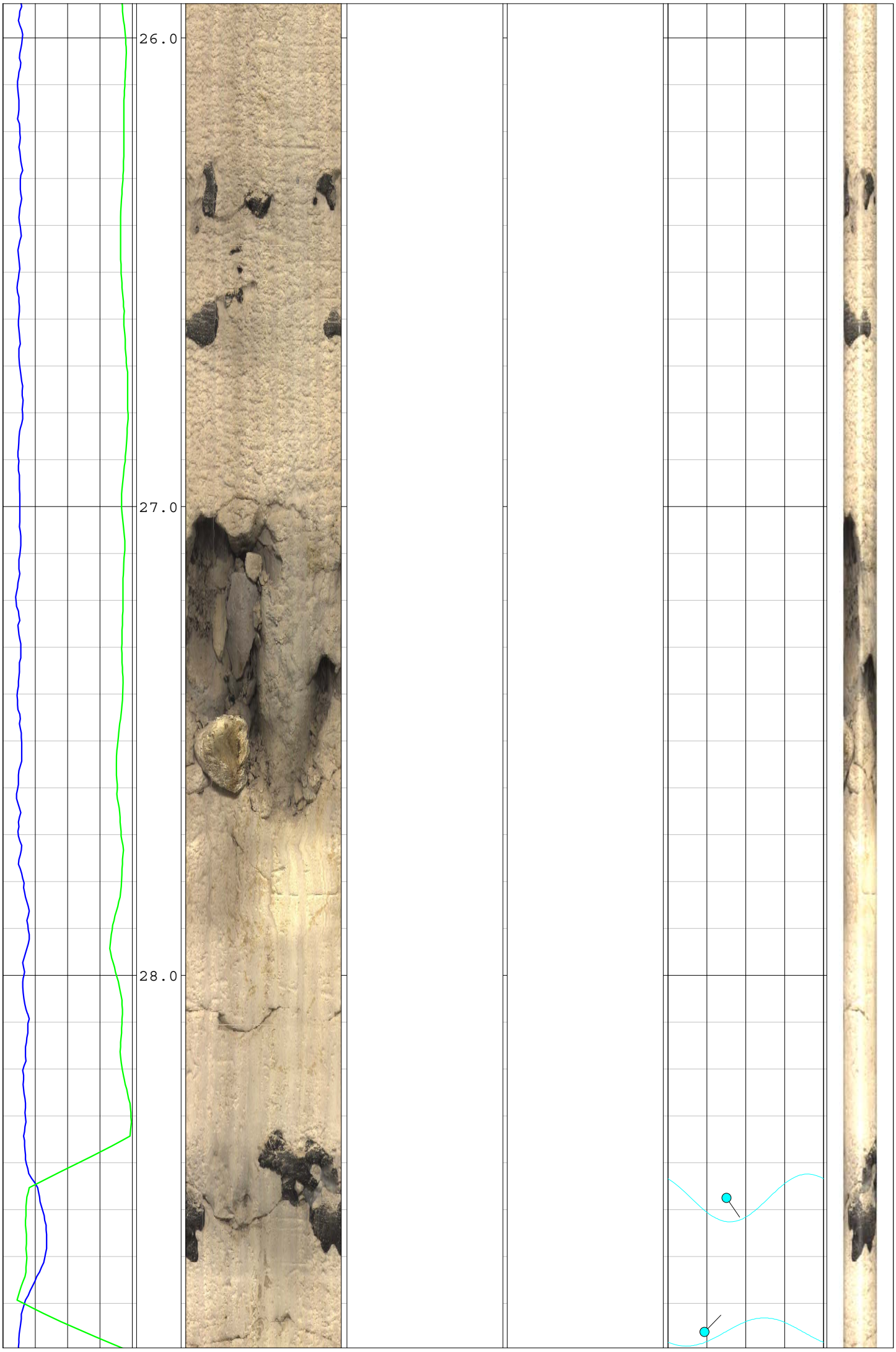
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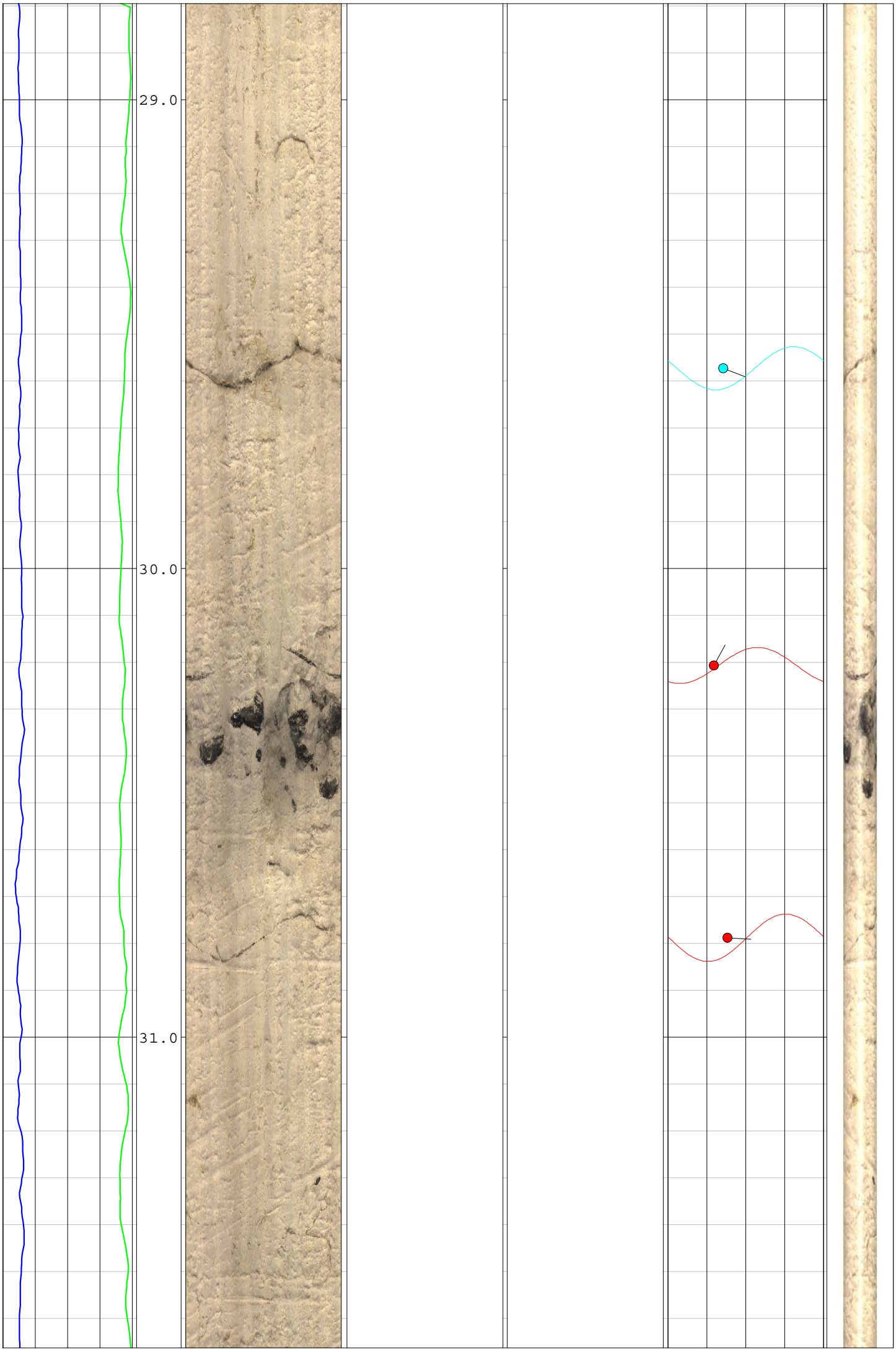
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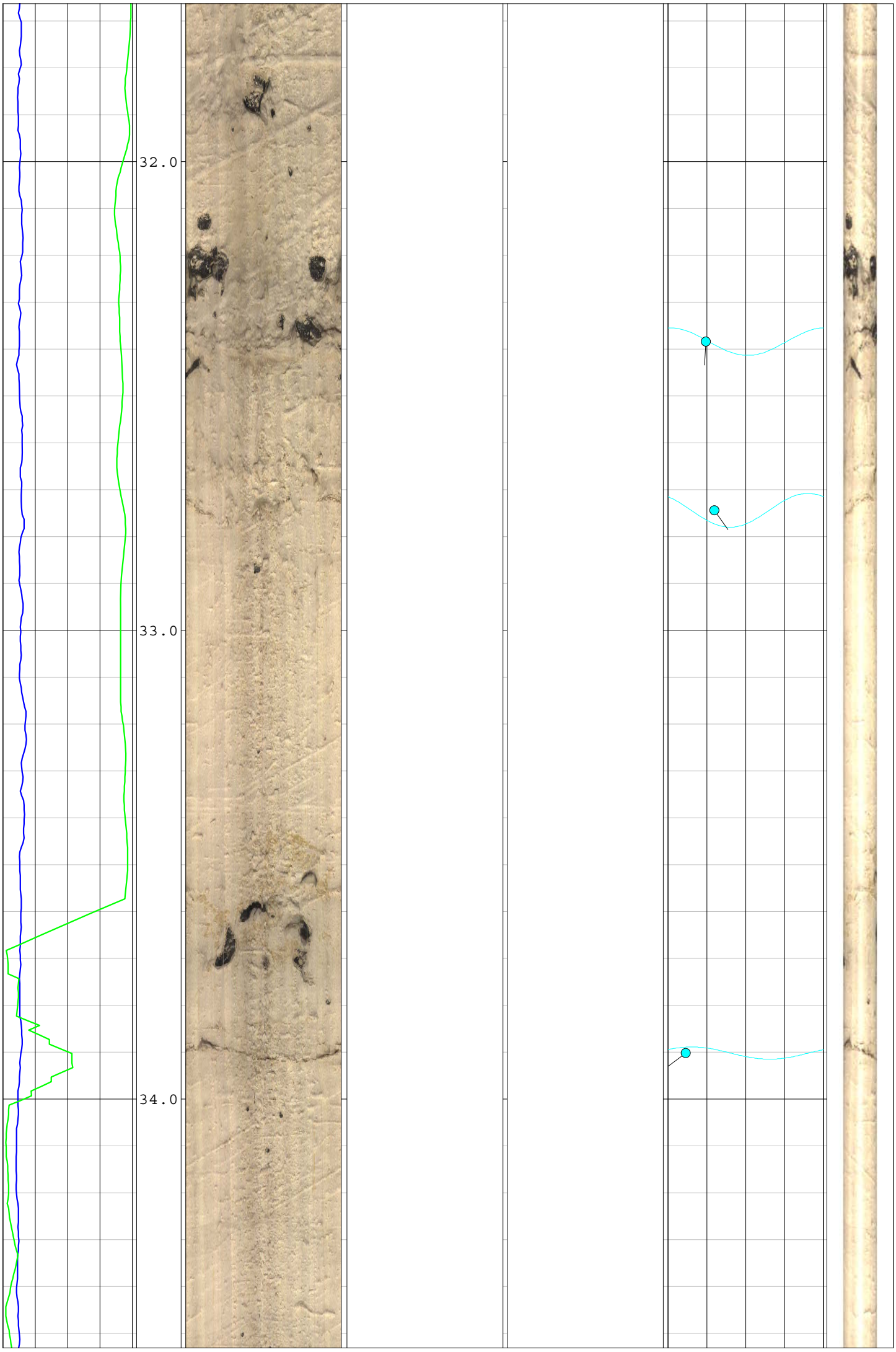
32.0
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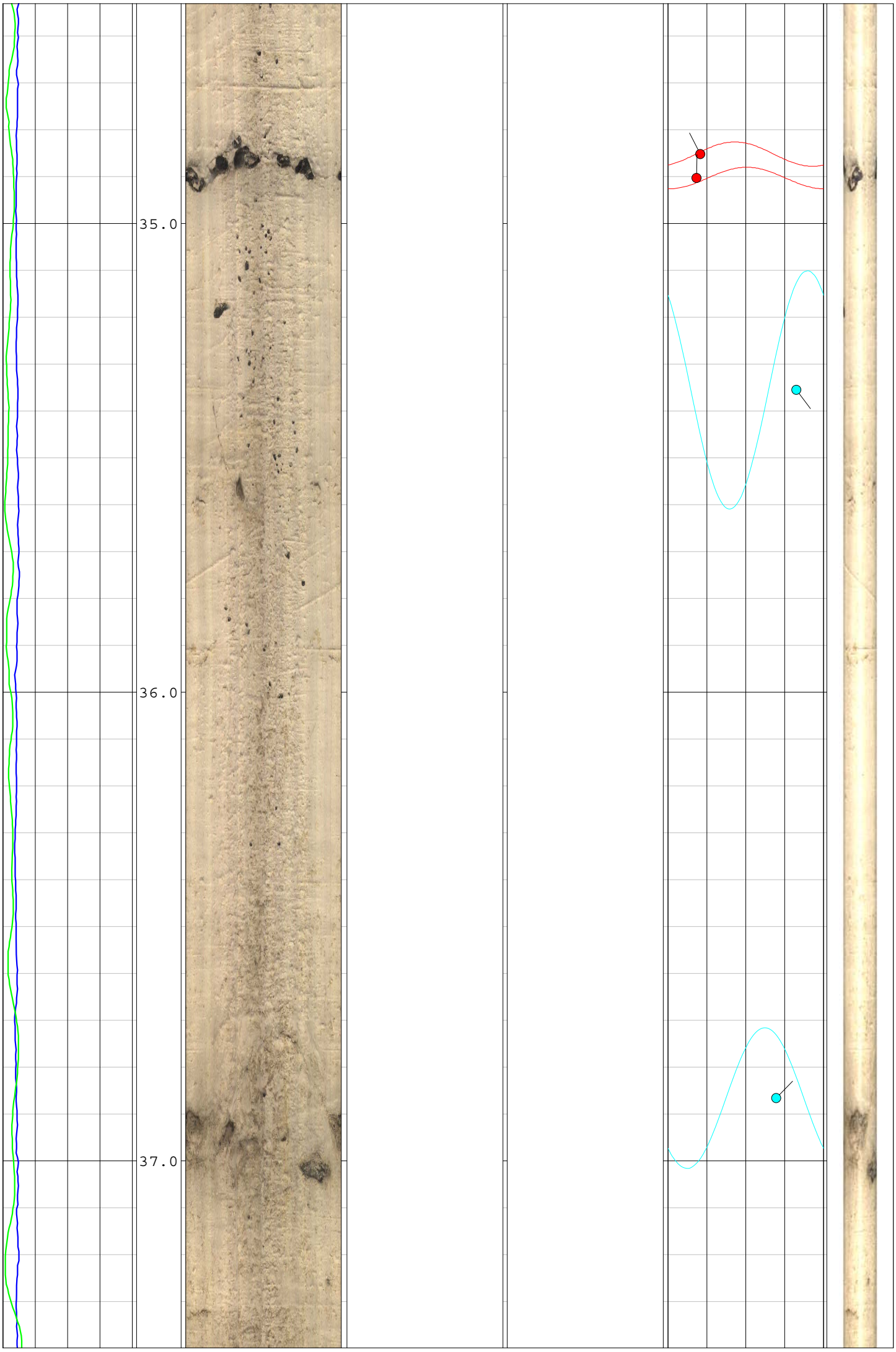
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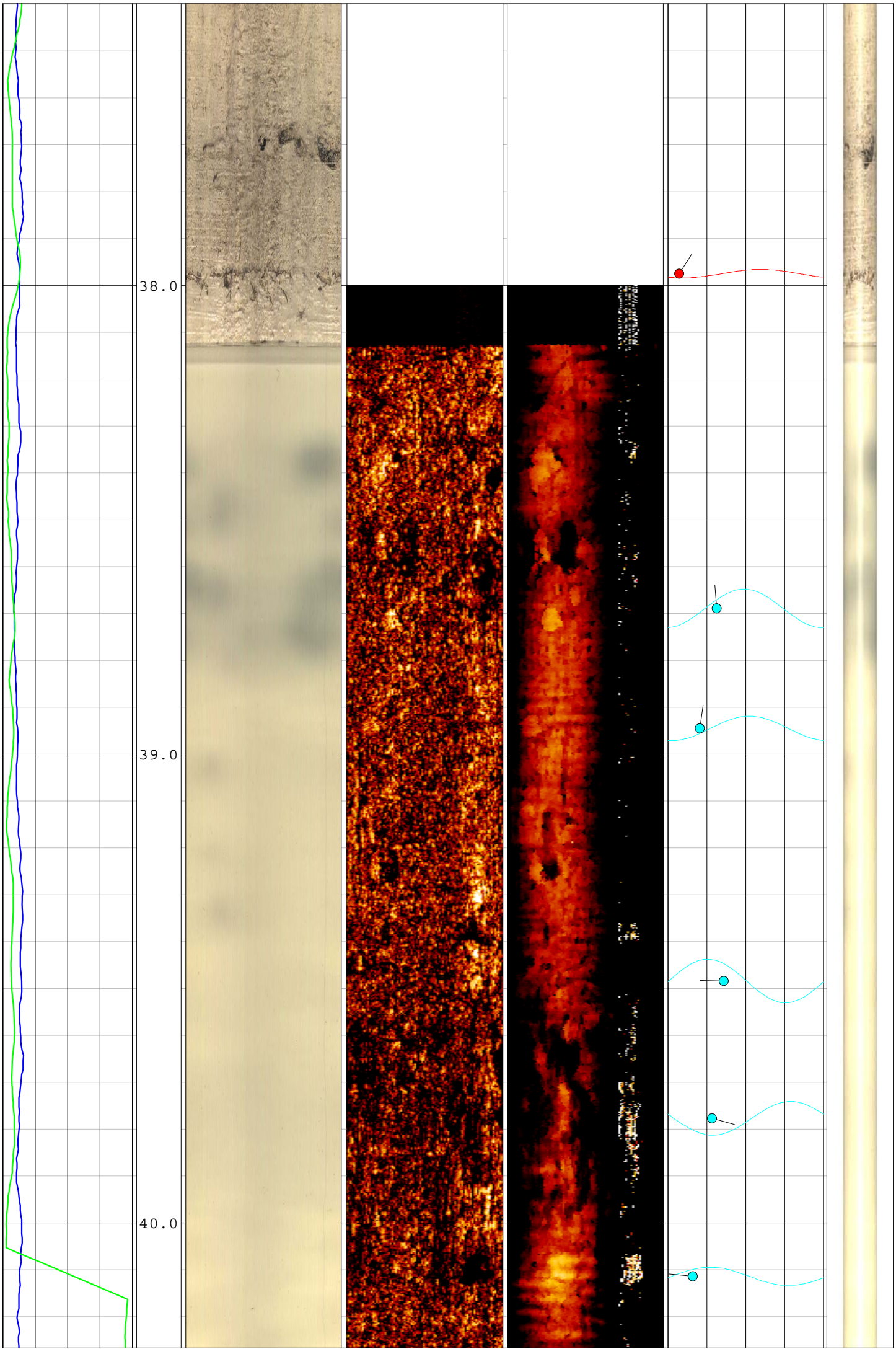
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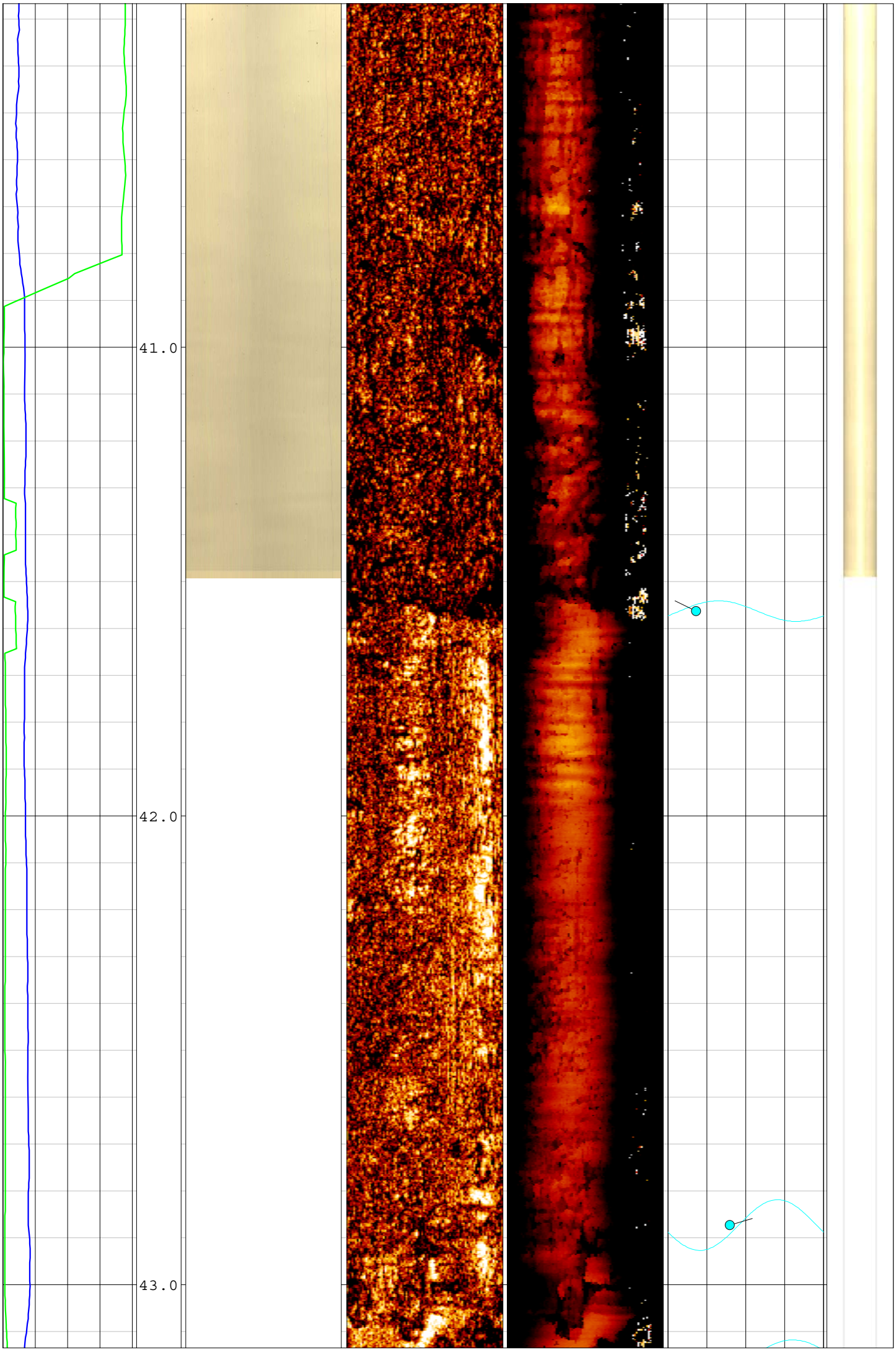
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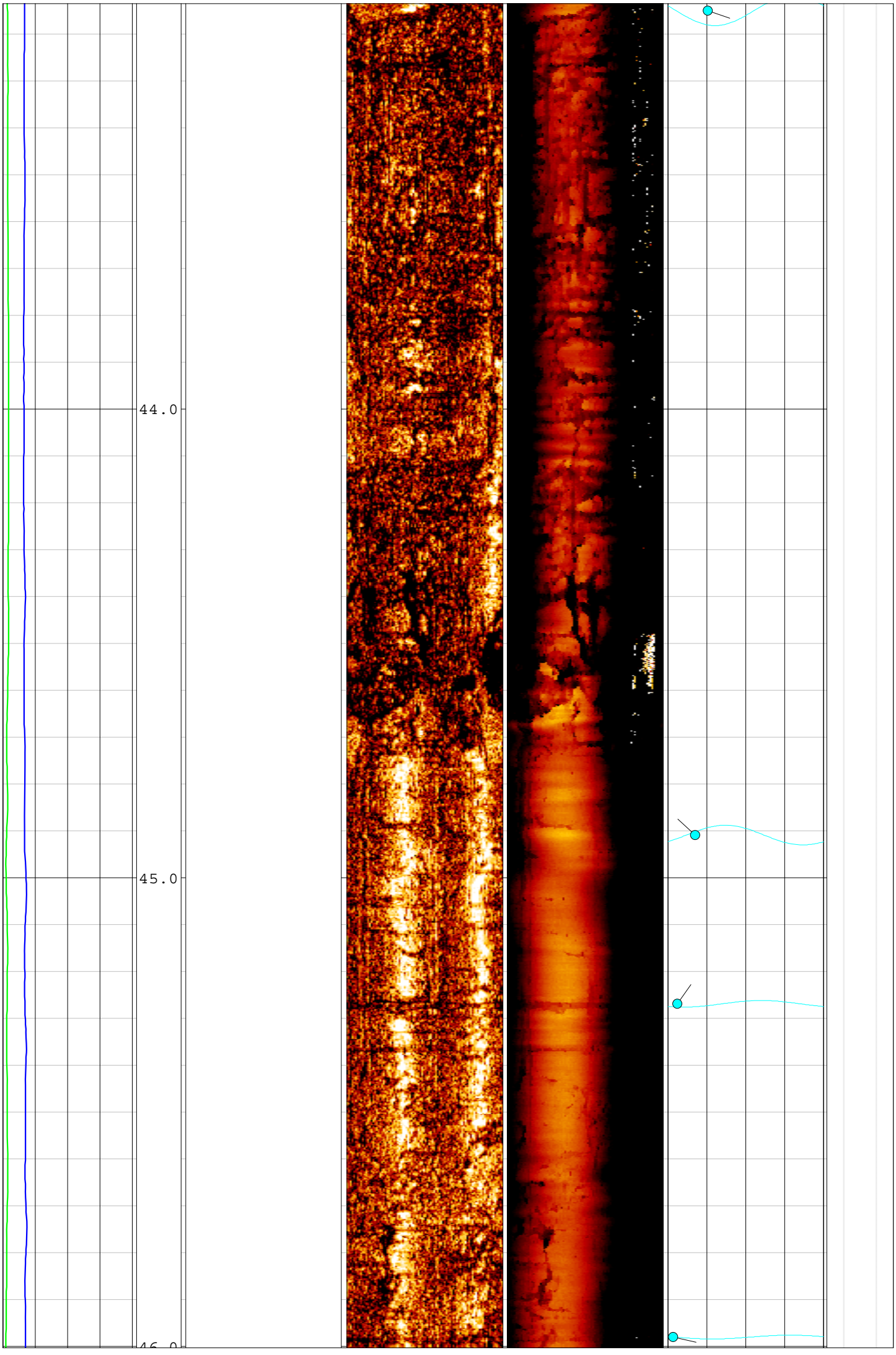
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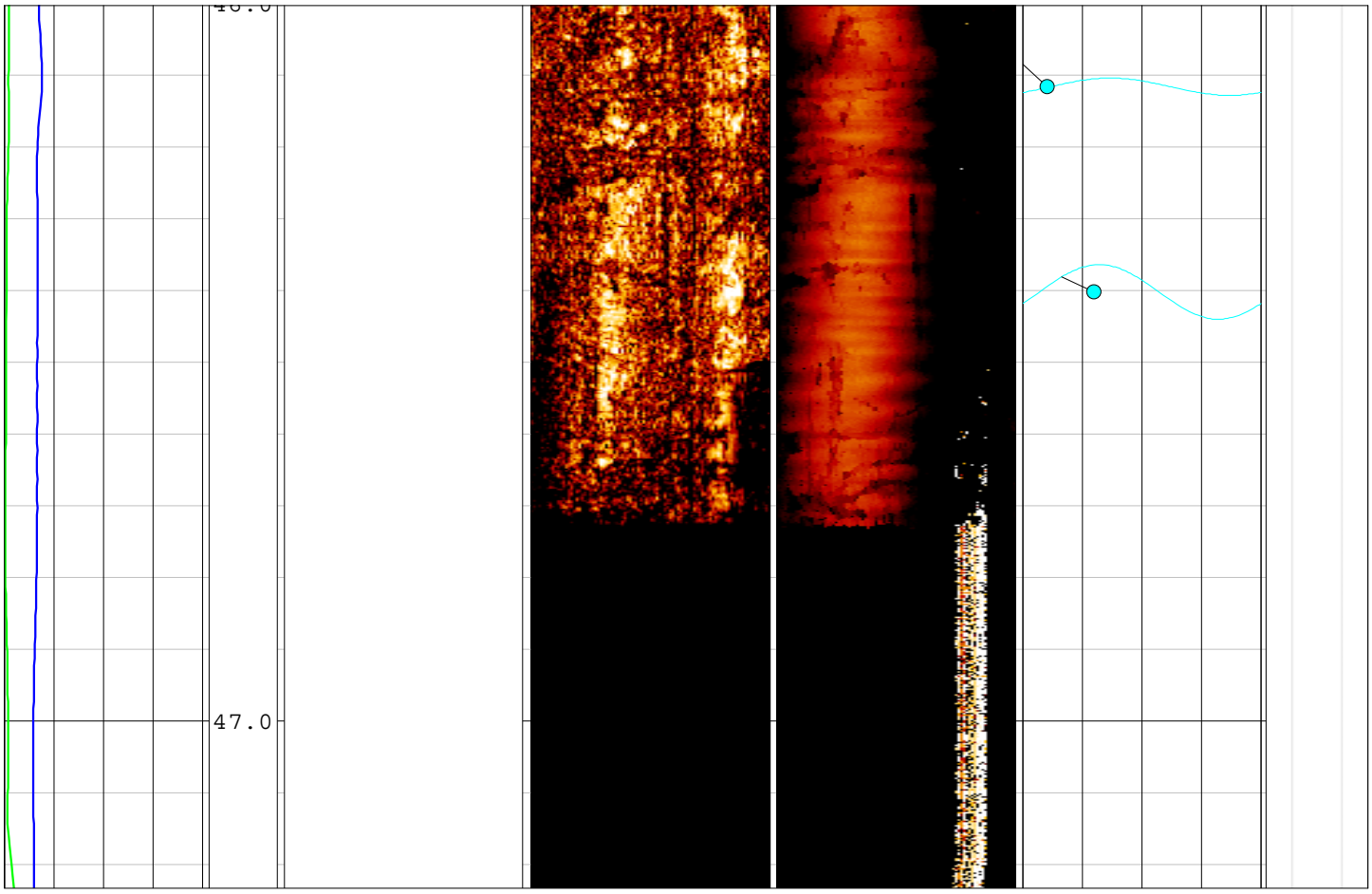
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APPENDIX 9

Plate Loads Tests Results

Hixtra Ltd
Milton Keynes
MK4 4GQ
[redacted]
01908 505 833

Certificate for the Determination of the Equivalent CBR Value of Soil by the Incremental Plate Loading Test to BS 1377 Part 9: 1990

Report No: HS3266-1
Client: Geotechnics Ltd
Address: Unit 1 Borders Industrail Park,
River Lane, Saltney,
Chester,
CH4 8RJ
Site: A303 Stonehenge, SP4 7HW

Report Date: 04/09/2019

Test Details

Test Location: STP71101
Description: Brown Clay With Some Stones
Material Class: Formation
Layer: 0.5M BGL

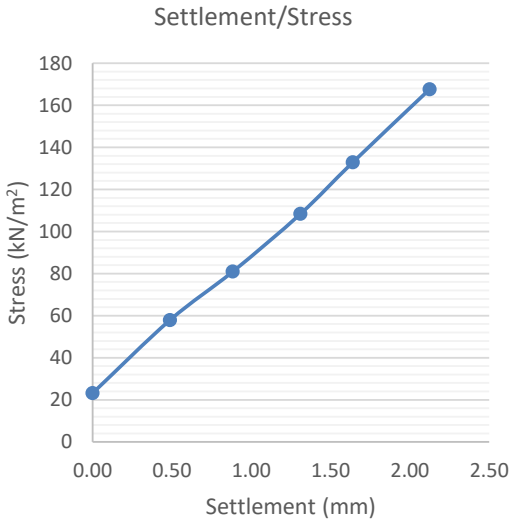
Date of Test: 03/09/2019
Reaction Load: 13 Tonne 360
Weather & Ambient Temp. (°C): Dry
Plate Diameter (mm): 297

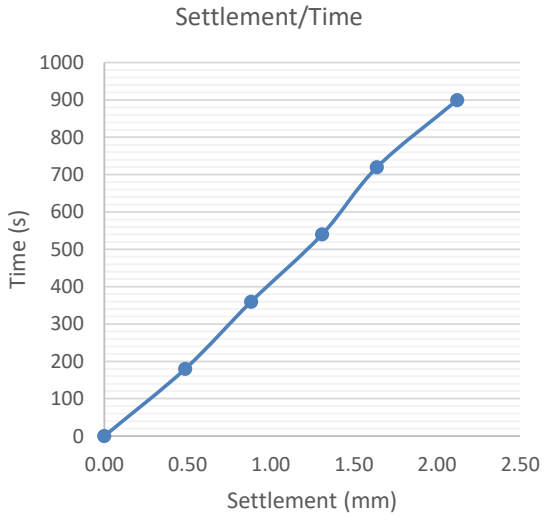
Test Results

Time (s)	Settlement (mm)	Plate Stress (kN/m^2)
0	0.00	23
180	0.49	58
360	0.88	81
540	1.31	108
720	1.64	133
900	2.12	168

Maximum Applied Stress (kN/m^2):	168
Maximum Settlement (mm):	2.12
Equivalent CBR Value (%):	5
Modulus of Subgrade Reaction, k_{762} (MN/m2/m):	37

Note: Supplemental test method and calculation of Equivalent CBR Value and Modulus of Subgrade Reaction: Interim Advice Note 73/06 (2009) Design Guidance for Road Pavement Foundations (Draft H25)





For and on Behalf of Hixtra Ltd

[redacted]

Kevin Shorthouse
Project Manager

Issued subject to Hixtra Terms and Conditions available [redacted]

Hixtra Ltd
Milton Keynes
MK4 4GQ
[redacted]
01908 505 833

Certificate for the Determination of the Equivalent CBR Value of Soil by the Incremental Plate Loading Test to BS 1377 Part 9: 1990

Report No: HS3266-2
Client: Geotechnics Ltd
Address: Unit 1 Borders Industrail Park,
River Lane, Saltney,
Chester,
CH4 8RJ
Site: A303 Stonehenge, SP4 7HW

Report Date: 04/09/2019

Test Details

Test Location: STP71102
Description: Brown Clay With Some Stones
Material Class: Formation
Layer: 0.5M BGL

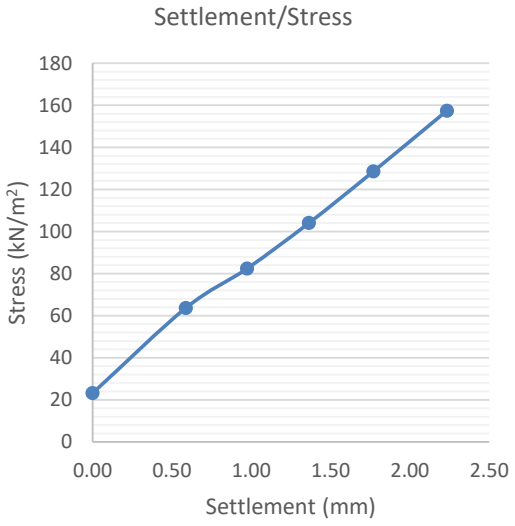
Date of Test: 03/09/2019
Reaction Load: 13 Tonne 360
Weather & Ambient Temp. (°C): Dry
Plate Diameter (mm): 297

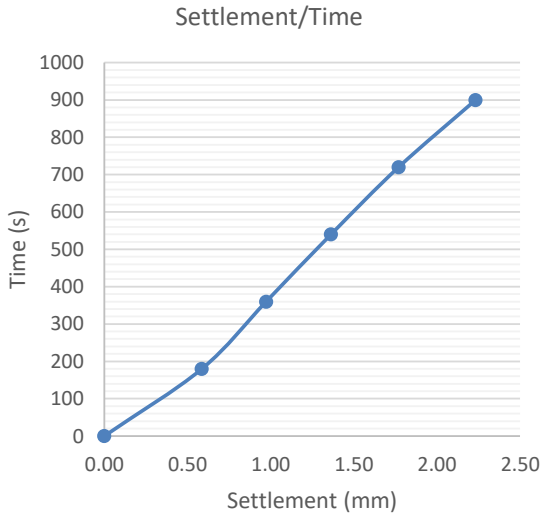
Test Results

Time (s)	Settlement (mm)	Plate Stress (kN/m^2)
0	0.00	23
180	0.59	64
360	0.97	82
540	1.36	104
720	1.77	129
900	2.23	157

Maximum Applied Stress (kN/m^2):	157
Maximum Settlement (mm):	2.23
Equivalent CBR Value (%):	4
Modulus of Subgrade Reaction, k_{762} (MN/m2/m):	34

Note: Supplemental test method and calculation of Equivalent CBR Value and Modulus of Subgrade Reaction: Interim Advice Note 73/06 (2009) Design Guidance for Road Pavement Foundations (Draft H25)





For and on Behalf of Hixtra Ltd

[redacted]

Kevin Shorthouse
Project Manager

Issued subject to Hixtra Terms and Conditions available at [redacted]

Hixtra Ltd
Milton Keynes
MK4 4GQ
[redacted]
01908 505 833

Certificate for the Determination of the Equivalent CBR Value of Soil by the Incremental Plate Loading Test to BS 1377 Part 9: 1990

Report No: HS3282-1
Client: Geotechnics Ltd
Address: Unit 1 Borders Industrail Park,
River Lane, Saltney,
Chester,
CH4 8RJ
Site: A303 Stonehenge, SP4 7HW

Report Date: 09/09/2019

Test Details

Test Location: STP70801
Description: Brown Clay With Some Stones
Material Class: Formation
Layer: 0.5M BGL

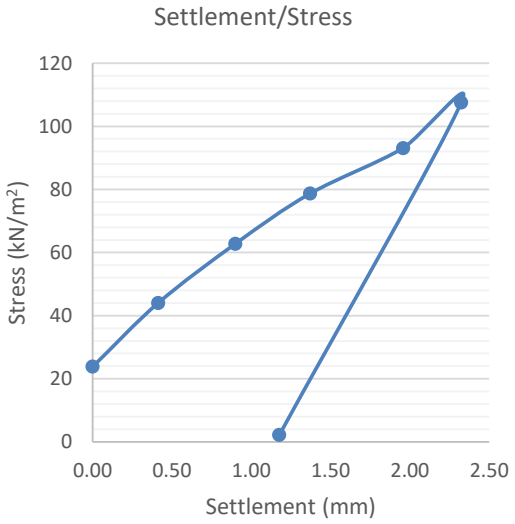
Date of Test: 09/09/2019
Reaction Load: 15 Tonne 360
Weather & Ambient Temp. (°C): Overcast
Plate Diameter (mm): 297

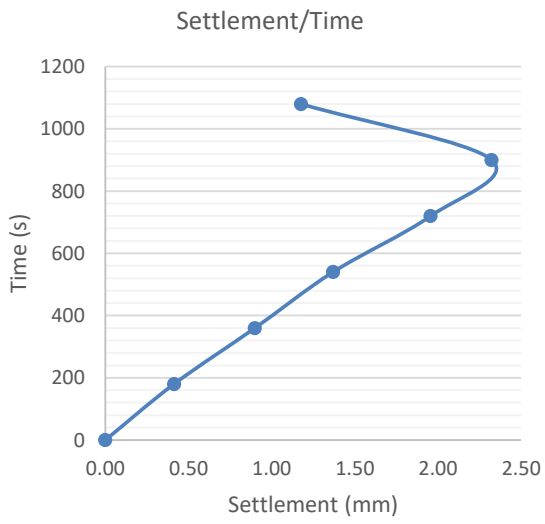
Test Results

Time (s)	Settlement (mm)	Plate Stress (kN/m^2)
0	0.00	24
180	0.41	44
360	0.90	63
540	1.37	79
720	1.96	93
900	2.32	108
1080	1.18	2

Maximum Applied Stress (kN/m^2):	108
Maximum Settlement (mm):	2.32
Equivalent CBR Value (%):	3
Modulus of Subgrade Reaction, k_{762} (MN/m2/m):	26

Note: Supplemental test method and calculation of Equivalent CBR Value and Modulus of Subgrade Reaction: Interim Advice Note 73/06 (2009) Design Guidance for Road Pavement Foundations (Draft H25)





For and on Behalf of Hixtra Ltd

[redacted]

Kevin Shorthouse
Project Manager

Issued subject to Hixtra Terms and Conditions available [redacted]

Hixtra Ltd
Milton Keynes
MK4 4GQ
[redacted]
01908 505 833

Certificate for the Determination of the Equivalent CBR Value of Soil by the Incremental Plate Loading Test to BS 1377 Part 9: 1990

Report No: HS3282-2
Client: Geotechnics Ltd
Address: Unit 1 Borders Industrail Park,
River Lane, Saltney,
Chester,
CH4 8RJ
Site: A303 Stonehenge, SP4 7HW

Report Date: 09/09/2019

Test Details

Test Location: STP70802
Description: White Chalk
Material Class: Formation
Layer: 0.5M BGL

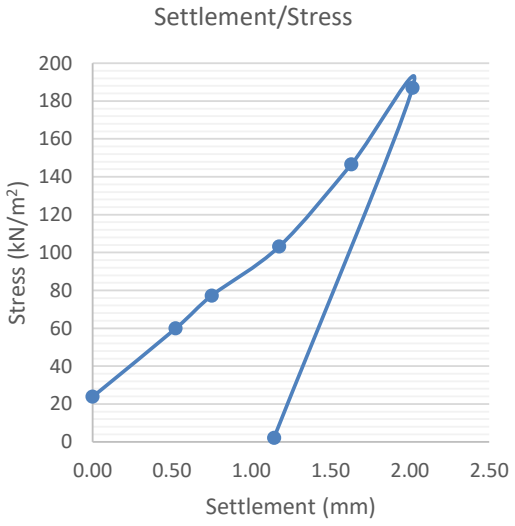
Date of Test: 09/09/2019
Reaction Load: 15 Tonne 360
Weather & Ambient Temp. (°C): Overcast
Plate Diameter (mm): 297

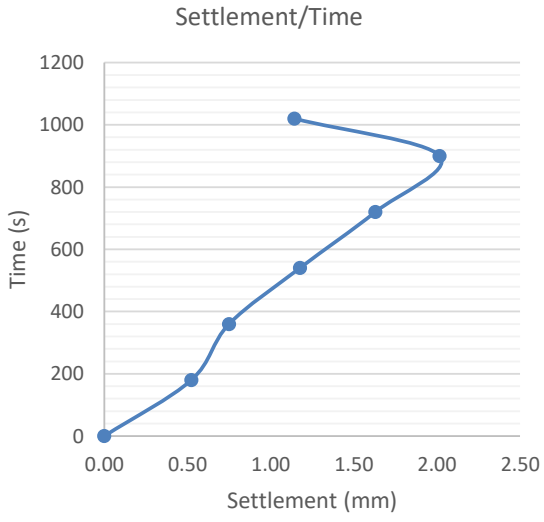
Test Results

Time (s)	Settlement (mm)	Plate Stress (kN/m^2)
0	0.00	24
180	0.52	60
360	0.75	77
540	1.18	103
720	1.63	147
900	2.02	187
1020	1.14	2

Maximum Applied Stress (kN/m^2):	187
Maximum Settlement (mm):	2.02
Equivalent CBR Value (%):	5
Modulus of Subgrade Reaction, k_{762} (MN/m2/m):	39

Note: Supplemental test method and calculation of Equivalent CBR Value and Modulus of Subgrade Reaction: Interim Advice Note 73/06 (2009) Design Guidance for Road Pavement Foundations (Draft H25)





For and on Behalf of Hixtra Ltd

[redacted]

Kevin Shorthouse
Project Manager

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APPENDIX 10

Soakage Test Results

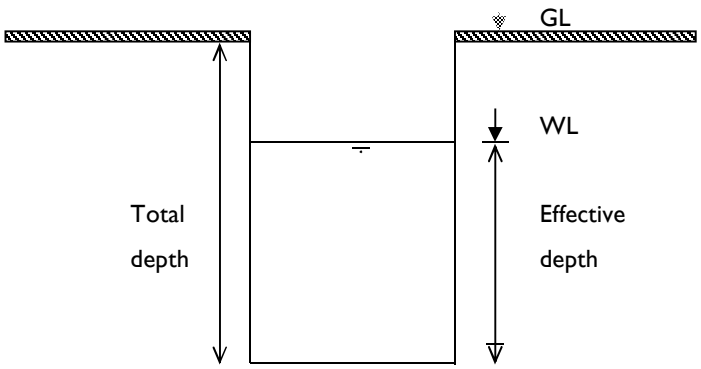
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP71402
		Test No	1
		Project No	PC197626
Client	Highways England	Date	16/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	2.37	1.13	100.00
1.00	2.37	1.13	100.00
2.00	2.38	1.12	99.12
3.00	2.39	1.11	98.23
4.00	2.39	1.11	98.23
5.00	2.40	1.10	97.35
10.00	2.41	1.09	96.46
15.00	2.44	1.06	93.81
20.00	2.46	1.04	92.04
30.00	2.50	1.00	88.50
50.00	2.55	0.95	84.07
60.00	2.59	0.91	80.53
90.00	2.66	0.84	74.34
120.00	2.72	0.78	69.03
180.00	2.83	0.67	59.29

TRIAL PIT SOAKAWAY



Trial pit length	=	3.200	m
Trial pit width	=	0.600	m
Trial pit depth	=	3.500	m
Effective depth (Head of Water)	=	1.130	m

Initial depth from GL	=	2.370m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	0.848	2.653	
25%	0.283	3.218	
Vp75-25	=		m3
ap50	=		m2
tp75-25	=		min
Soil Infiltration, f	=	*	m/sec

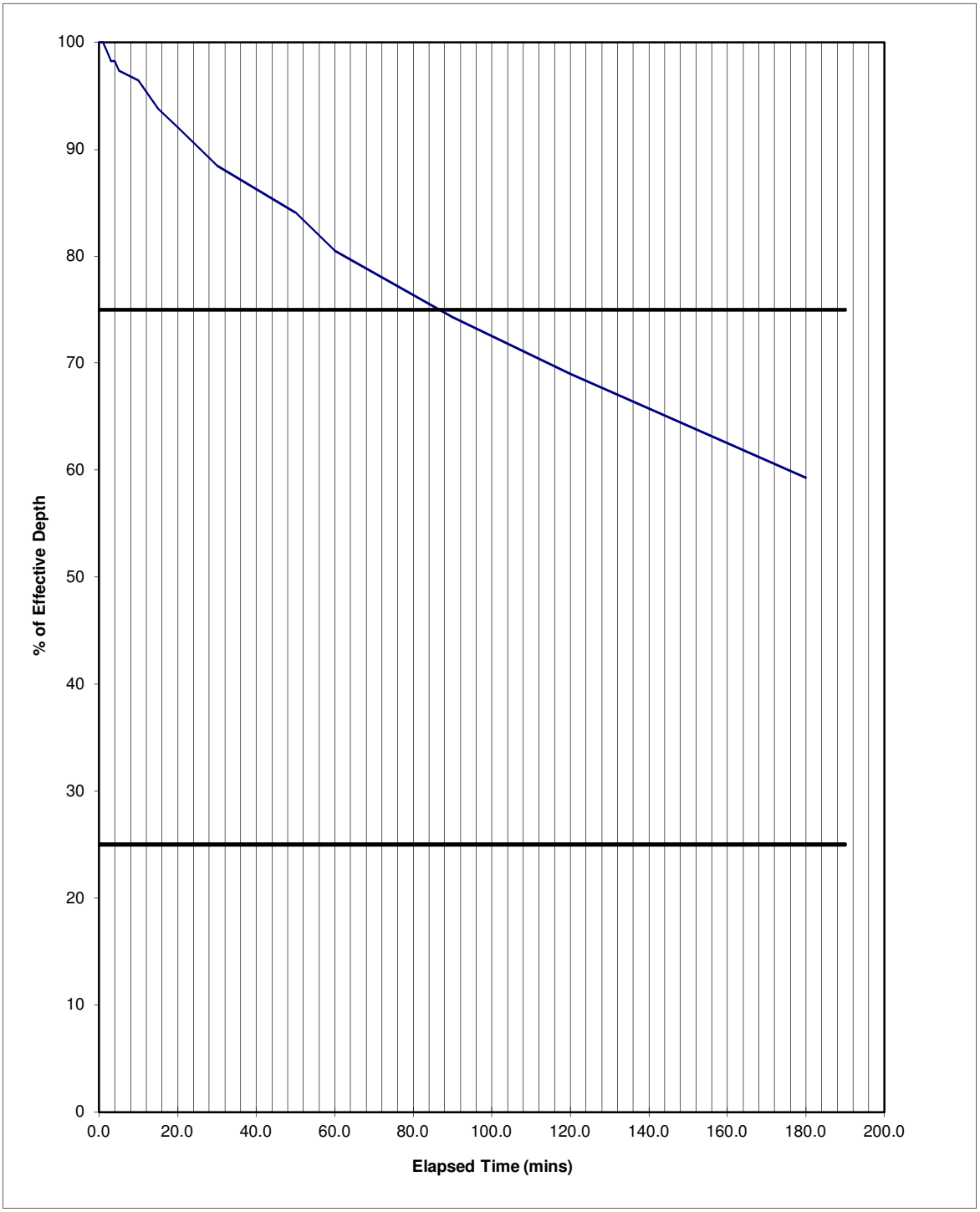
Remarks *Test terminated after 180 minutes due to insufficient time within the working day.
Not possible to calculate Infiltration Rate due to very slow dissipation rate of water.

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP71402
		Test No	1
		Project No	PC197626
Client	Highways England	Date	16/09/2019



tp75	=
tp25	=

Remarks *Test terminated after 180 minutes due to insufficient time within the working day.
Not possible to calculate Infiltration Rate due to very slow dissipation rate of water.

GEOTECHNICS

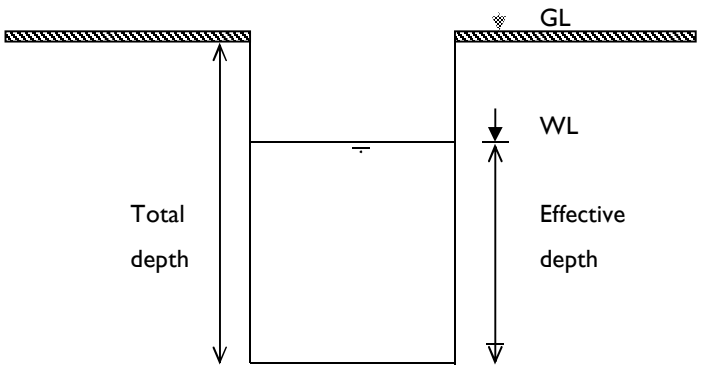
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP71404
		Test No	1
		Project No	PC197626
Client	Highways England	Date	16/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	1.61	1.89	100.00
1.00	1.62	1.88	99.47
2.00	1.67	1.83	96.83
3.00	1.68	1.82	96.30
4.00	1.69	1.81	95.77
5.00	1.71	1.79	94.71
10.00	1.79	1.71	90.48
15.00	1.84	1.66	87.83
20.00	1.90	1.60	84.66
30.00	2.00	1.50	79.37
45.00	2.11	1.39	73.54
60.00	2.22	1.28	67.72
90.00	2.38	1.12	59.26
120.00	2.51	0.99	52.38
167.00	2.64	0.86	45.50
210.00	2.70	0.80	42.33
270.00	2.81	0.69	36.51
300.00	2.84	0.66	34.92
330.00	2.87	0.63	33.33

TRIAL PIT SOAKAWAY



Trial pit length	=	3.200	m
Trial pit width	=	0.500	m
Trial pit depth	=	3.500	m
Effective depth (Head of Water)	=	1.890	m

Initial depth from GL	=	1.610m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.418	2.083	40.00
25%	0.473	3.028	490.00
Vp75-25	=	1.512	m3
ap50	=	8.593	m2
tp75-25	=	450.000	min
Soil Infiltration, f	=	**6.52E-06**	m/sec

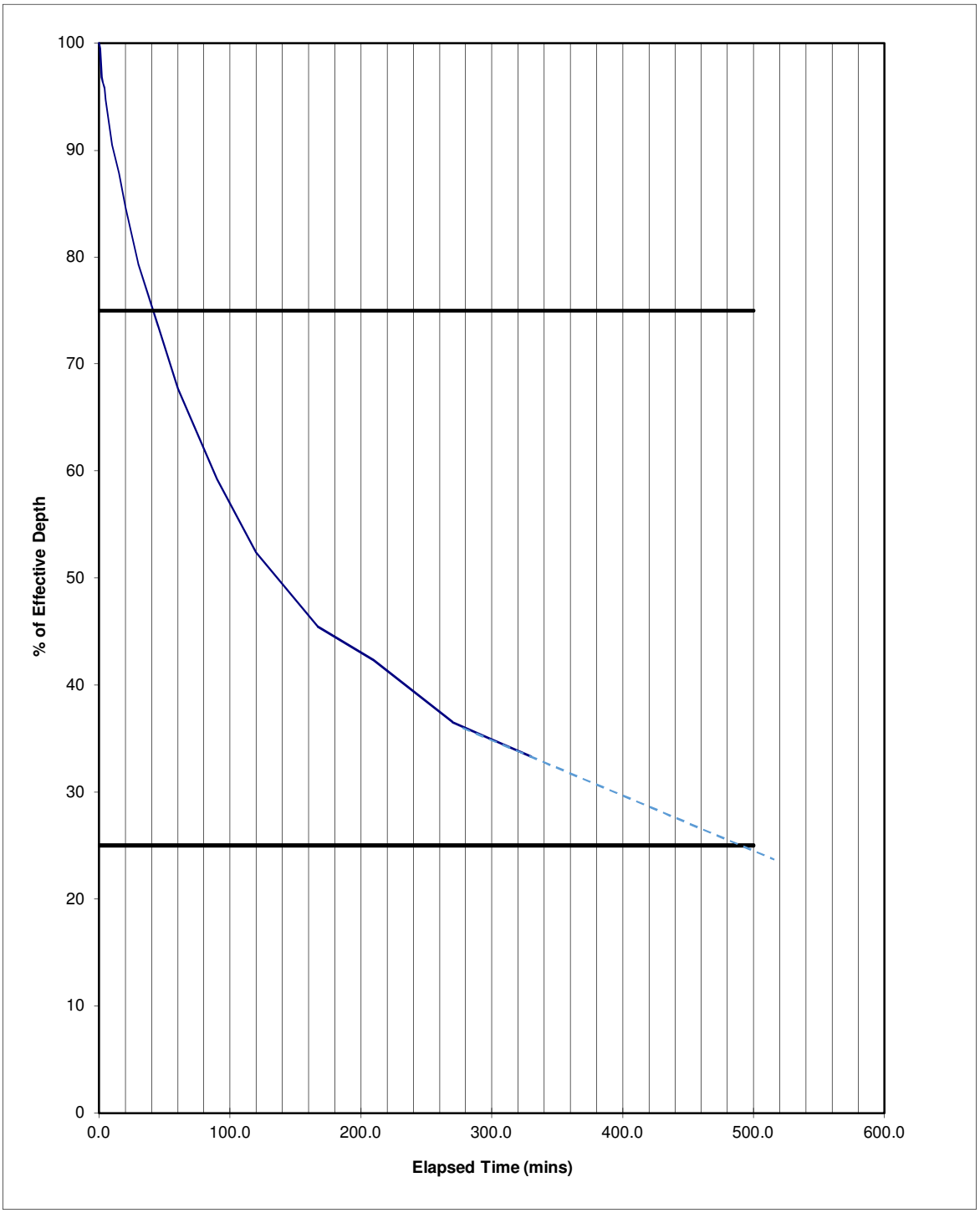
Remarks *Test terminated after 330 minutes due to insufficient time within the working day.
Soil Infiltration rate obtained by extrapolating test curve to cross 25% dissipation line.

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP71404
		Test No	1
		Project No	PC197626
Client	Highways England	Date	16/09/2019



tp75	=	40.00
tp25	=	490.00

Remarks *Test terminated after 330 minutes due to insufficient time within the working day.
Soil Infiltration rate obtained by extrapolating test curve to cross 25% dissipation line.

GEOTECHNICS

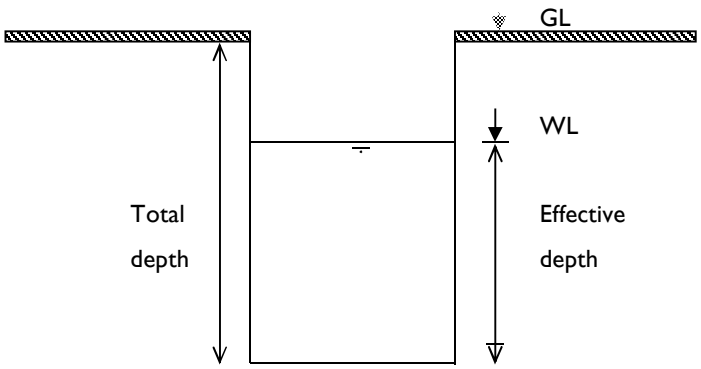
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP71603
		Test No	1
		Project No	PC197626
Client	Highways England	Date	17/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	1.97	1.53	100.00
1.00	1.99	1.51	98.69
2.00	2.01	1.49	97.39
3.00	2.02	1.48	96.73
4.00	2.03	1.47	96.08
5.00	2.05	1.45	94.77
10.00	2.09	1.41	92.16
15.00	2.13	1.37	89.54
20.00	2.17	1.33	86.93
30.00	2.21	1.29	84.31
45.00	2.30	1.20	78.43
60.00	2.38	1.12	73.20
90.00	2.52	0.98	64.05
120.00	2.63	0.87	56.86
180.00	2.80	0.70	45.75
240.00	2.92	0.58	37.91
300.00	3.01	0.49	32.03

TRIAL PIT SOAKAWAY



Trial pit length	=	3.400	m
Trial pit width	=	0.700	m
Trial pit depth	=	3.500	m
Effective depth (Head of Water)	=	1.530	m

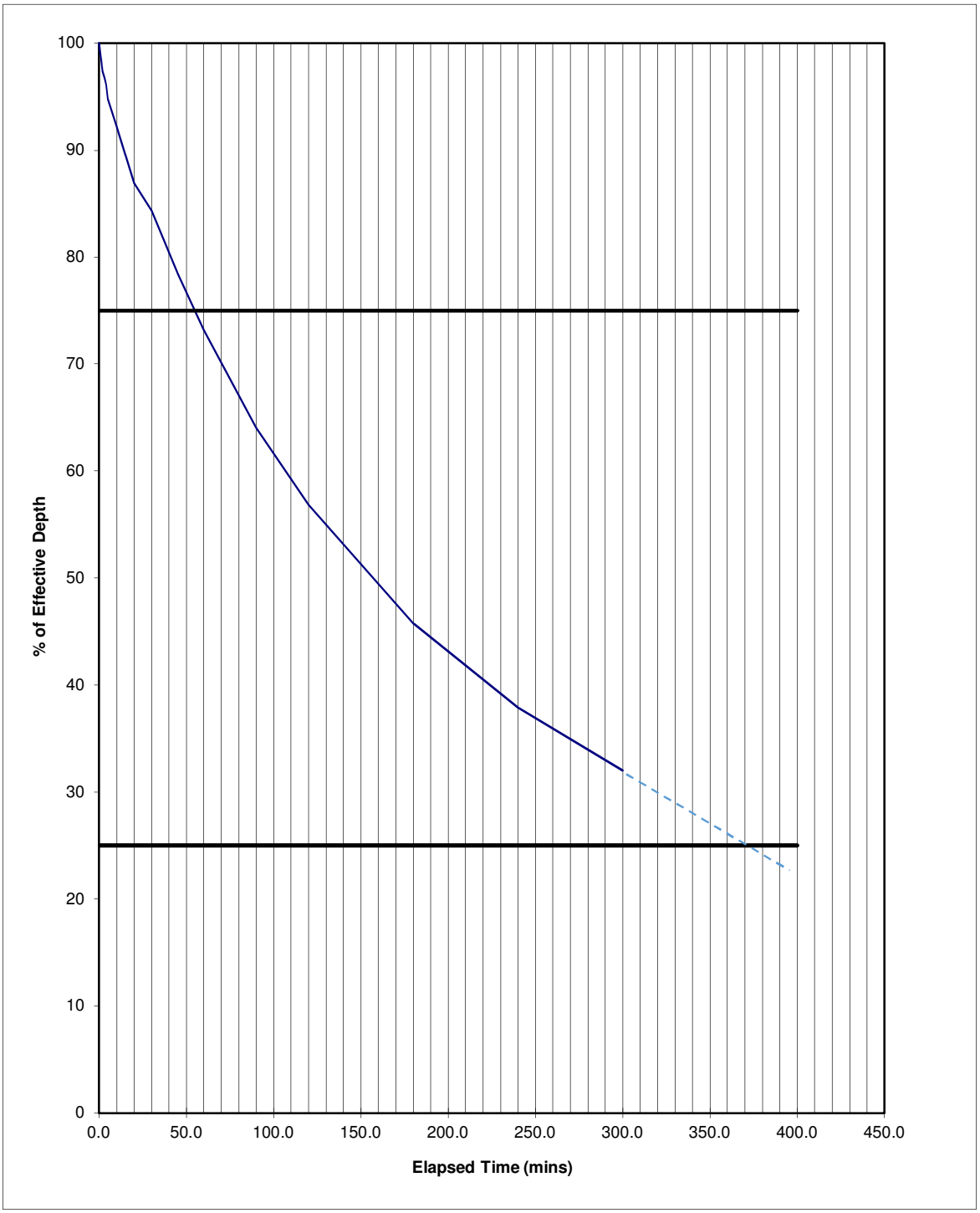
Initial depth from GL	=	1.970m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.148	2.353	55.00
25%	0.383	3.118	370.00
Vp75-25	=	1.821 m3	
ap50	=	8.653 m2	
tp75-25	=	315.000 min	
Soil Infiltration, f	=	**1.11E-05** m/sec	

Remarks Soil Infiltration rate obtained by extrapolating test curve to cross 25% dissipation line.

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP71603
		Test No	1
		Project No	PC197626
Client	Highways England	Date	17/09/2019



tp75	=	55.00
tp25	=	370.00

Remarks Soil Infiltration rate obtained by extrapolating test curve to cross 25% dissipation line.

GEOTECHNICS

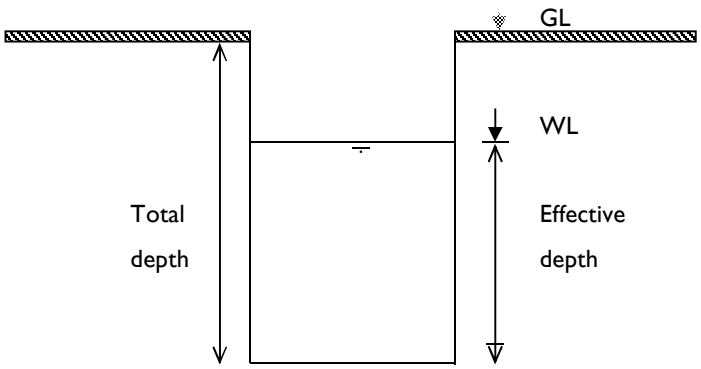
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72701
		Test No	1
		Project No	PC197626
Client	Highways England	Date	12/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	1.48	1.22	100.00
1.00	1.51	1.19	97.54
2.00	1.54	1.16	95.08
3.00	1.63	1.07	87.70
4.00	1.64	1.06	86.89
10.00	1.74	0.96	78.69
15.00	1.84	0.86	70.49
20.00	1.91	0.79	64.75
30.00	2.07	0.63	51.64
45.00	2.21	0.49	40.16
60.00	2.32	0.38	31.15
70.00	2.39	0.31	25.41

TRIAL PIT SOAKAWAY



Trial pit length	=	3.100	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.700	m
Effective depth (Head of Water)	=	1.220	m

Initial depth from GL	=	1.480m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	0.915	1.785	12.00
25%	0.305	2.395	70.00
Vp75-25	=	0.946	m3
ap50	=	5.942	m2
tp75-25	=	58.000	min
Soil Infiltration, f	=	**4.57E-05**	m/sec

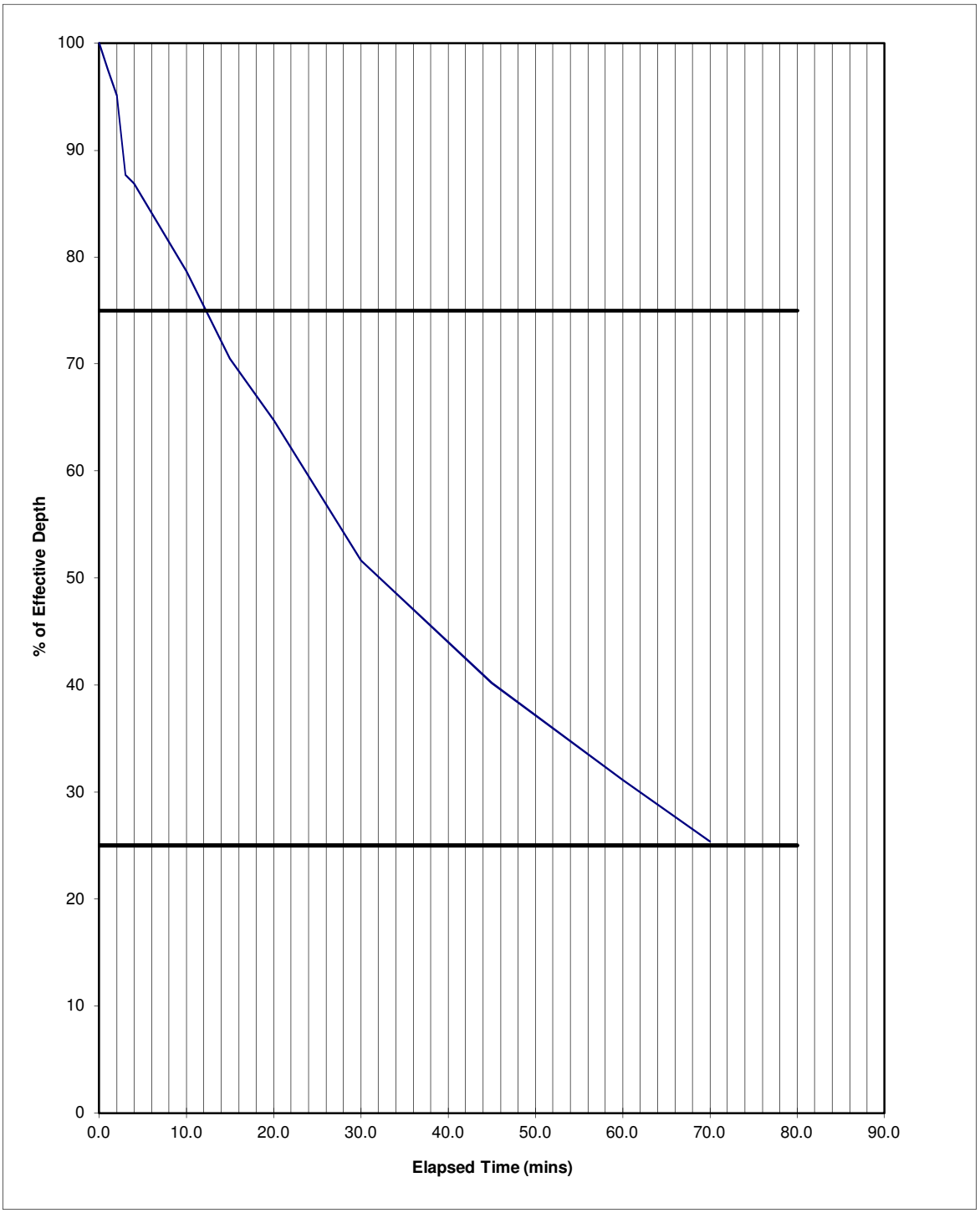
Remarks

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72701
		Test No	1
		Project No	PC197626
Client	Highways England	Date	12/09/2019



tp75	=	12.00
tp25	=	70.00

Remarks

GEOTECHNICS

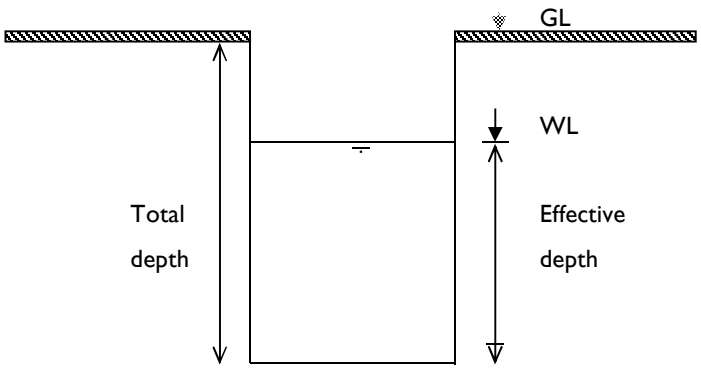
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72701
		Test No	2
		Project No	PC197626
Client	Highways England	Date	12/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	1.30	1.40	100.00
1.00	1.32	1.38	98.57
2.00	1.37	1.33	95.00
3.00	1.41	1.29	92.14
4.00	1.42	1.28	91.43
5.00	1.45	1.25	89.29
10.00	1.56	1.14	81.43
15.00	1.67	1.03	73.57
20.00	1.78	0.92	65.71
30.00	1.95	0.75	53.57
45.00	2.09	0.61	43.57
60.00	2.23	0.47	33.57
79.00	2.35	0.35	25.00

TRIAL PIT SOAKAWAY



Trial pit length	=	3.100	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.700	m
Effective depth (Head of Water)	=	1.400	m

Initial depth from GL	=	1.300m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.050	1.650	14.00
25%	0.350	2.350	79.00
Vp75-25	=	1.085	m3
ap50	=	6.590	m2
tp75-25	=	65.000	min
Soil Infiltration, f	=	**4.22E-05**	m/sec

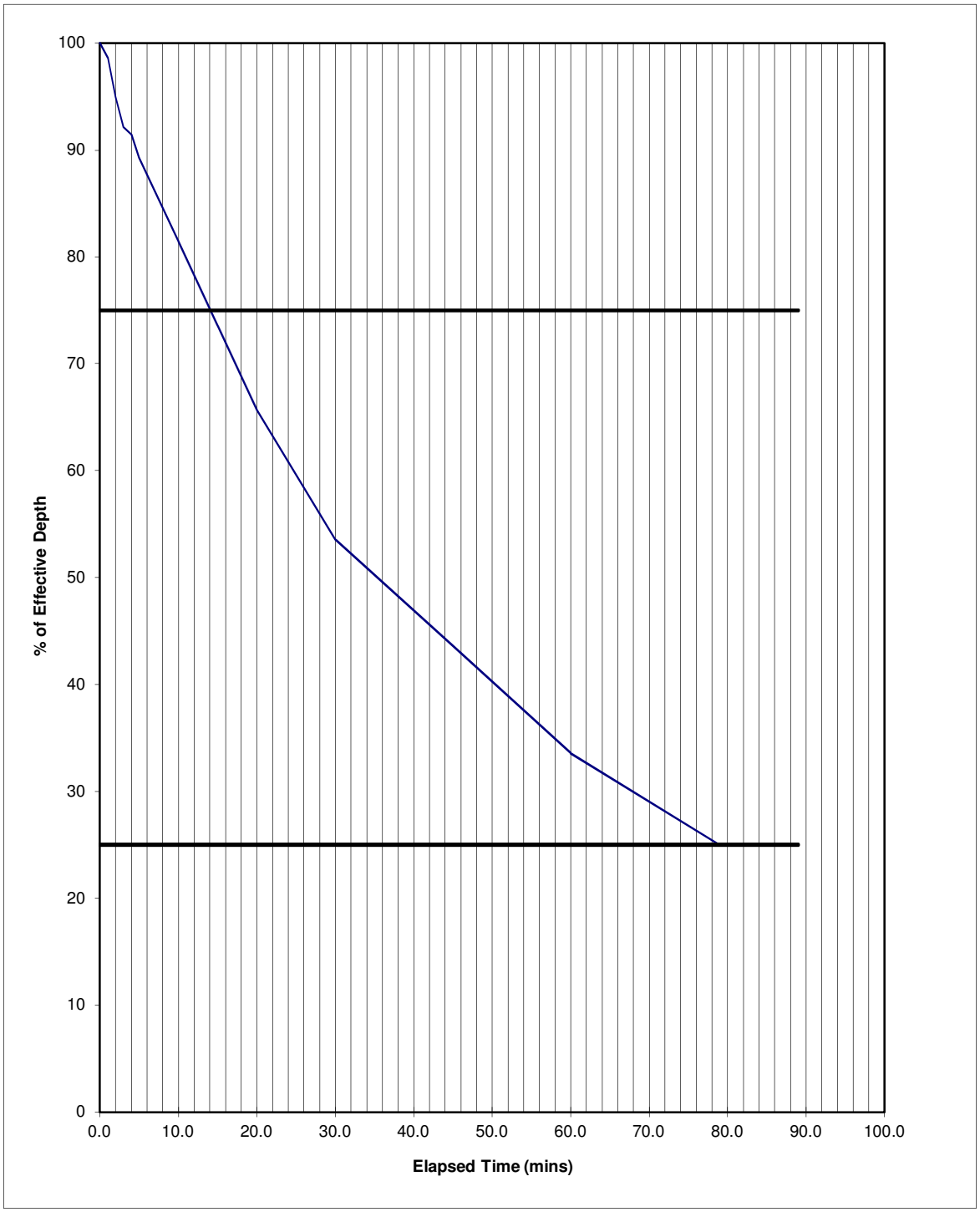
Remarks

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72701
		Test No	2
		Project No	PC197626
Client	Highways England	Date	12/09/2019



tp75	=	14.00
tp25	=	79.00

Remarks

GEOTECHNICS

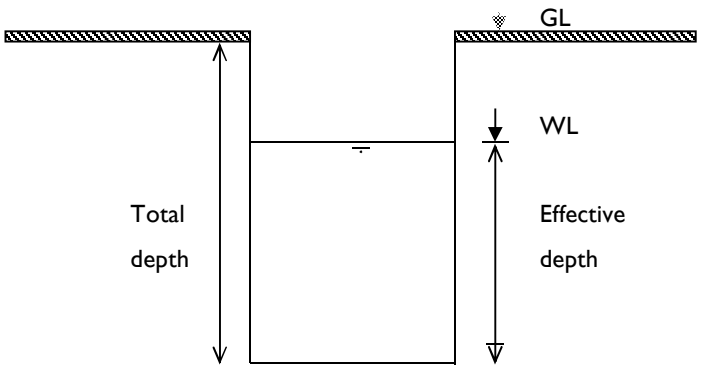
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72701
		Test No	3
		Project No	PC197626
Client	Highways England	Date	12/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	1.26	1.44	100.00
1.00	1.28	1.42	98.61
2.00	1.31	1.39	96.53
3.00	1.35	1.35	93.75
4.00	1.37	1.33	92.36
5.00	1.39	1.31	90.97
10.00	1.51	1.19	82.64
15.00	1.61	1.09	75.69
20.00	1.69	1.01	70.14
30.00	1.85	0.85	59.03
45.00	2.01	0.69	47.92
60.00	2.13	0.57	39.58
92.00	2.33	0.37	25.69

TRIAL PIT SOAKAWAY



Trial pit length	=	3.100	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.700	m
Effective depth (Head of Water)	=	1.440	m

Initial depth from GL	=	1.260m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.080	1.620	16.00
25%	0.360	2.340	93.00
Vp75-25	=	1.116	m3
ap50	=	6.734	m2
tp75-25	=	77.000	min
Soil Infiltration, f	=	**3.59E-05**	m/sec

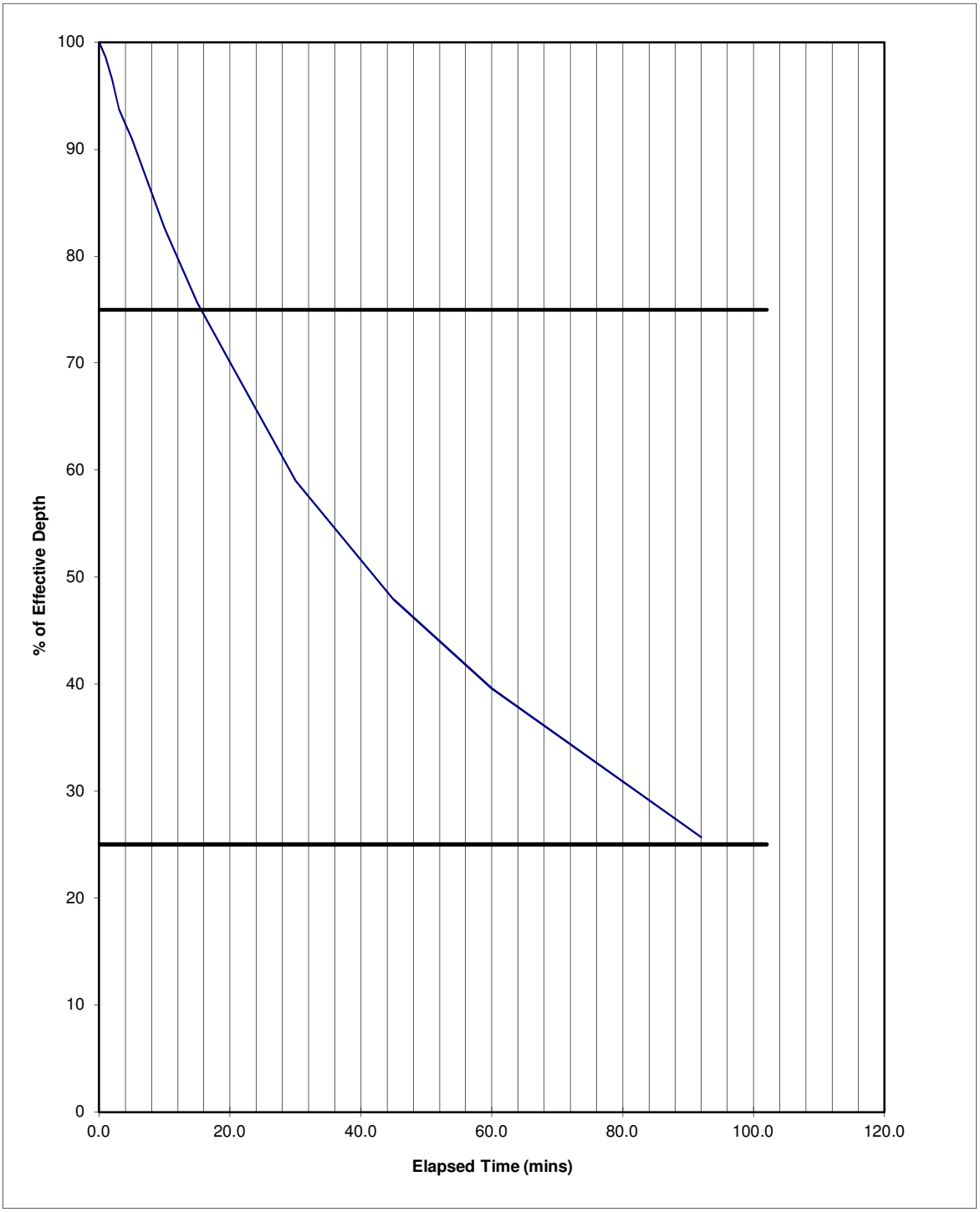
Remarks

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72701
		Test No	3
		Project No	PC197626
Client	Highways England	Date	12/09/2019



tp75	=	16.00
tp25	=	93.00

Remarks

GEOTECHNICS

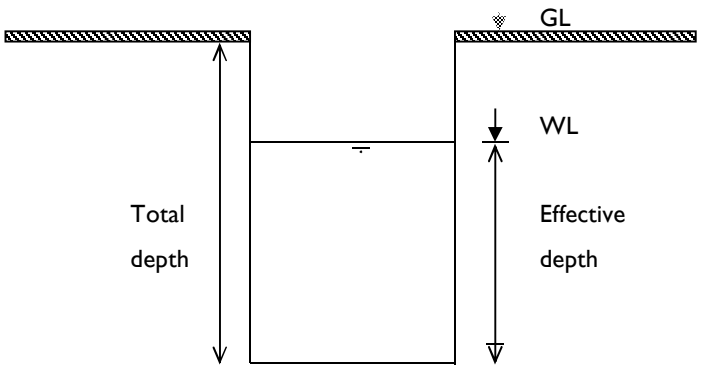
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72702
		Test No	1
		Project No	PC197626
Client	Highways England	Date	12/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	1.01	1.59	100.00
1.00	1.02	1.58	99.37
2.00	1.05	1.55	97.48
3.00	1.07	1.53	96.23
4.00	1.09	1.51	94.97
5.00	1.11	1.49	93.71
10.00	1.24	1.36	85.53
15.00	1.38	1.22	76.73
20.00	1.50	1.10	69.18
30.00	1.67	0.93	58.49
45.00	1.83	0.77	48.43
60.00	1.92	0.68	42.77
90.00	2.04	0.56	35.22
120.00	2.15	0.45	28.30
134.00	2.17	0.43	27.04

TRIAL PIT SOAKAWAY



Trial pit length	=	3.100	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.600	m
Effective depth (Head of Water)	=	1.590	m

Initial depth from GL	=	1.010m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.193	1.408	16.00
25%	0.398	2.203	160.00
Vp75-25	=	1.232	m3
ap50	=	7.274	m2
tp75-25	=	144.000	min
Soil Infiltration, f	=	**1.96E-05**	m/sec

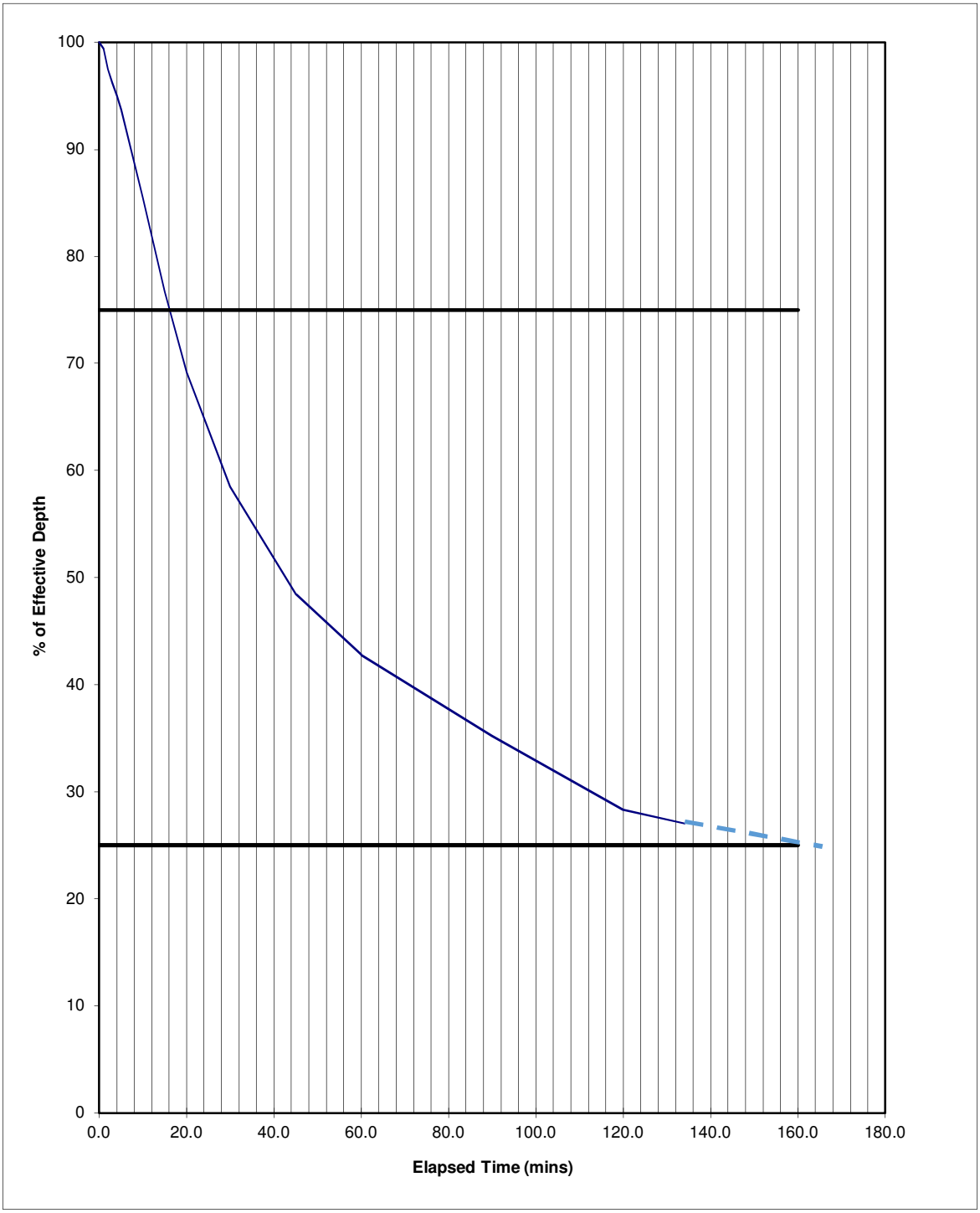
Remarks Spalling from pit sides during addition of water. Pit depth at end of test 2.40m.
Soil Infiltration rate obtained by extrapolating test curve to cross 25% dissipation line.

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72702
		Test No	1
		Project No	PC197626
Client	Highways England	Date	12/09/2019



tp75	=	16.00
tp25	=	160.00

Remarks Spalling from pit sides during addition of water. Pit depth at end of test 2.40m.
Soil Infiltration rate obtained by extrapolating test curve to cross 25% dissipation line.

GEOTECHNICS

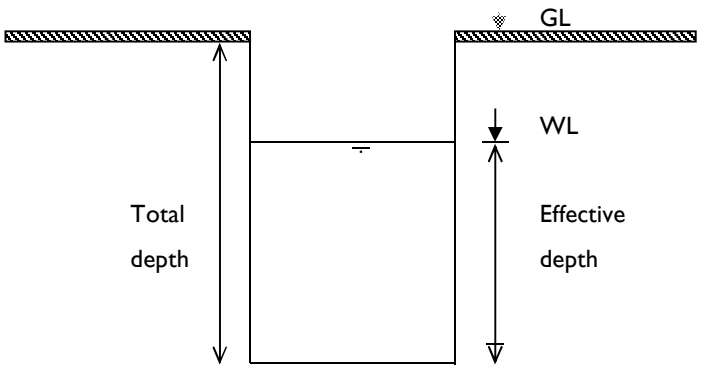
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72702
		Test No	2
		Project No	PC197626
Client	Highways England	Date	12/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	0.84	1.56	100.00
1.00	0.86	1.54	98.72
2.00	0.88	1.52	97.44
3.00	0.90	1.50	96.15
4.00	0.94	1.46	93.59
5.00	0.95	1.45	92.95
10.00	1.08	1.32	84.62
15.00	1.18	1.22	78.21
20.00	1.28	1.12	71.79
30.00	1.46	0.94	60.26
45.00	1.68	0.72	46.15
60.00	1.86	0.54	34.62
90.00	2.08	0.32	20.51

TRIAL PIT SOAKAWAY



Trial pit length	=	3.100	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.400	m
Effective depth (Head of Water)	=	1.560	m

Initial depth from GL	=	0.840m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.170	1.230	18.00
25%	0.390	2.010	80.00
Vp75-25	=	1.209	m3
ap50	=	7.166	m2
tp75-25	=	62.000	min
Soil Infiltration, f	=	**4.54E-05**	m/sec

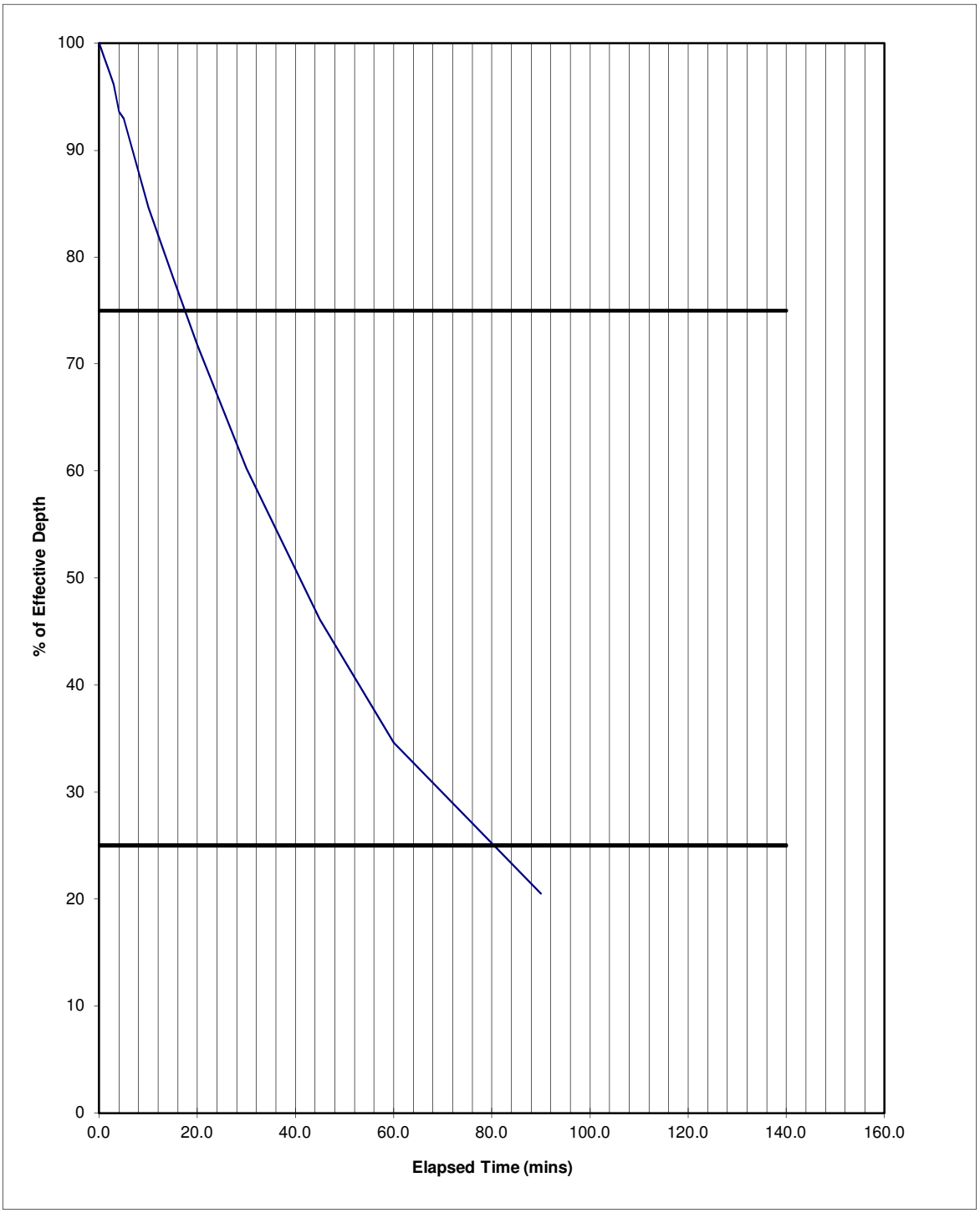
Remarks Trial Pit excavated to a depth of 2.60m bgl, but partial collapse during Test 1 lead to a total depth of 2.40m for Test 2 on which the calculation of soil infiltration was based. Test 3 was not started due to insufficient time within the working time allowed.

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72702
		Test No	2
		Project No	PC197626
Client	Highways England	Date	12/09/2019



tp75	=	18.00
tp25	=	80.00

Remarks

GEOTECHNICS

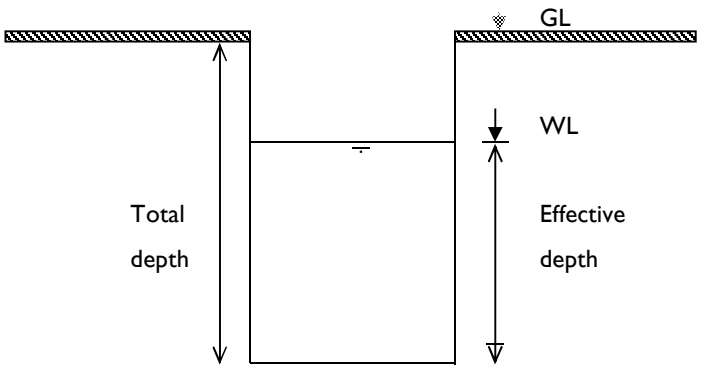
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72703
		Test No	1
		Project No	PC197626
Client	Highways England	Date	10/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	0.53	1.83	100.00
1.00	0.65	1.70	93.10
2.00	0.73	1.62	88.88
3.00	0.79	1.56	85.48
4.00	0.86	1.49	81.59
5.00	0.93	1.42	77.81
6.00	0.97	1.39	75.89
7.00	1.01	1.34	73.64
8.00	1.06	1.29	70.90
9.00	1.09	1.26	68.93
10.00	1.14	1.21	66.52
15.00	1.31	1.04	56.93
20.00	1.45	0.90	49.10
25.00	1.57	0.78	42.74
30.00	1.67	0.68	37.37
35.00	1.75	0.60	32.66
40.00	1.82	0.53	29.04
45.00	1.87	0.48	26.41
50.00	1.94	0.42	22.74
55.00	1.97	0.38	20.77
60.00	2.01	0.34	18.68
80.00	2.13	0.22	12.05

TRIAL PIT SOAKAWAY



Trial pit length	=	3.000	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.350	m
Effective depth (Head of Water)	=	1.825	m

Initial depth from GL	=	0.525m		
% of effective depth	Head (m)	Depth from GL (m)		Time (mins)
75%	1.369	0.981		6.00
25%	0.456	1.894		47.00
Vp75-25	=	1.369	m3	
ap50	=	7.888	m2	
tp75-25	=	41.000	min	
Soil Infiltration, f	=	**7.05E-05**	m/sec	

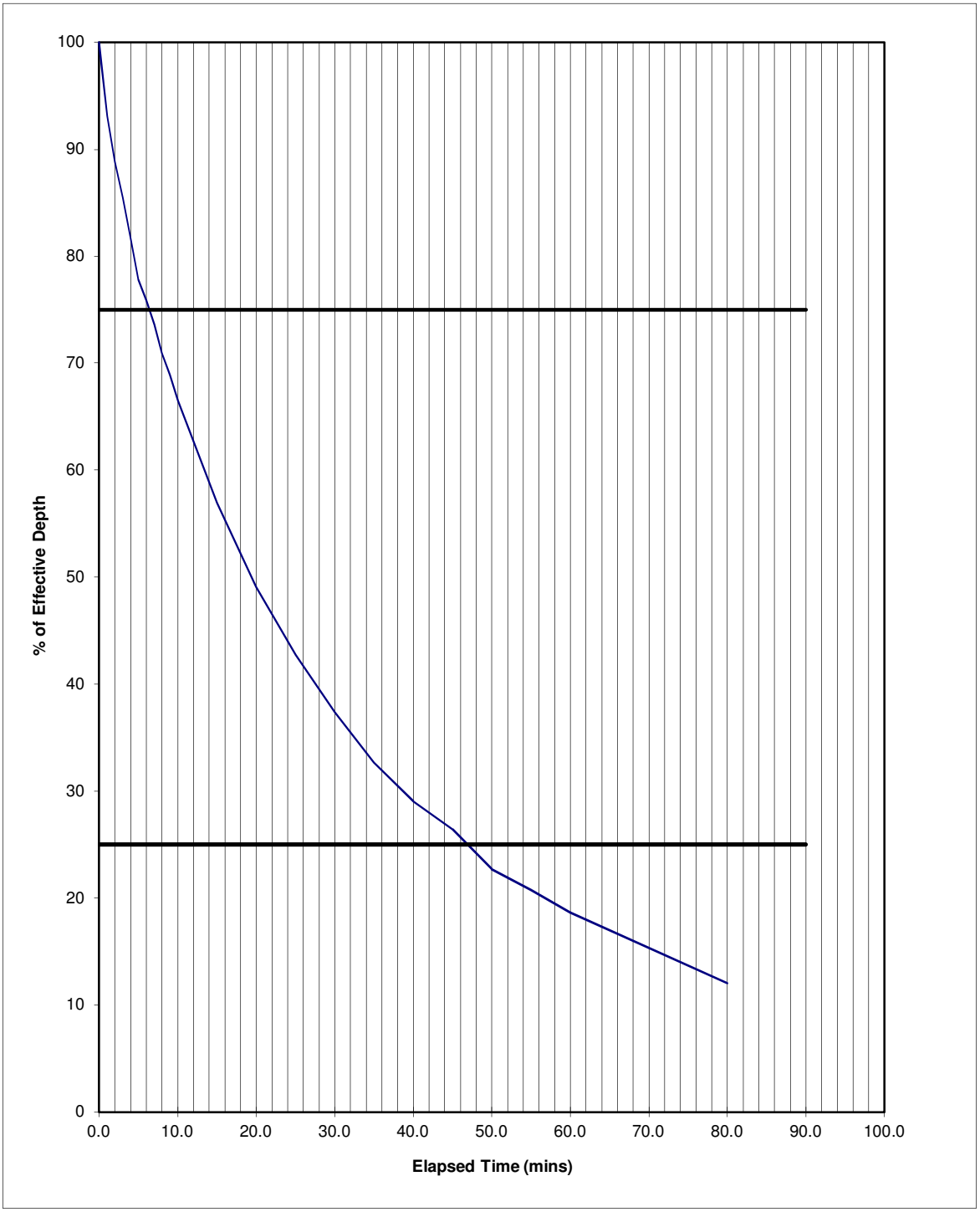
Remarks Trial Pit excavated to a depth of 2.50m bgl, but partial collapse whilst filling with water lead to a total depth of 2.35m for the soakaway test on which the calculation of soil infiltration was based.

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72703
		Test No	1
		Project No	PC197626
Client	Highways England	Date	10/09/2019



tp75	=	6.00
tp25	=	47.00

Remarks Trial Pit excavated to a depth of 2.50m bgl, but partial collapse whilst filling with water lead to a total depth of 2.35m for the soakaway test on which the calculation of soil infiltration was based.

GEOTECHNICS

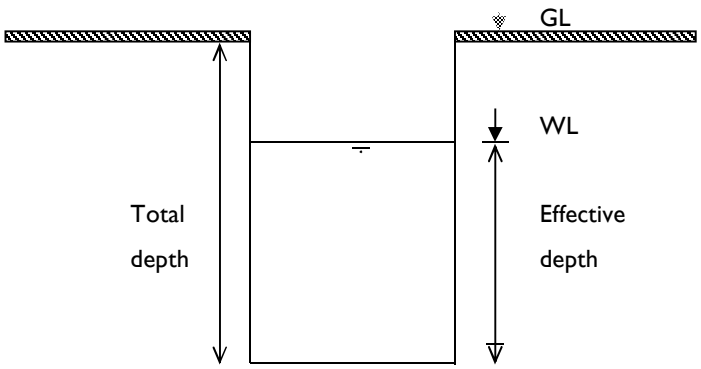
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72703
		Test No	2
		Project No	PC197626
Client	Highways England	Date	10/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	0.51	1.85	100.00
1.00	0.61	1.75	94.58
2.00	0.66	1.69	91.82
3.00	0.72	1.64	88.62
4.00	0.77	1.58	85.58
5.00	0.81	1.54	83.63
6.00	0.85	1.50	81.36
7.00	0.90	1.45	78.64
8.00	0.94	1.41	76.26
9.00	0.98	1.37	74.25
10.00	1.01	1.34	72.79
15.00	1.19	1.16	63.04
20.00	1.34	1.01	54.53
25.00	1.46	0.89	48.24
30.00	1.58	0.78	42.01
35.00	1.67	0.68	36.96
40.00	1.74	0.61	33.06
45.00	1.81	0.55	29.54
50.00	1.87	0.48	25.85
55.00	1.93	0.42	22.71
60.00	1.99	0.36	19.57
64.00	2.11	0.25	13.28

TRIAL PIT SOAKAWAY



Trial pit length	=	3.000	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.350	m
Effective depth (Head of Water)	=	1.845	m

Initial depth from GL	=	0.505m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.384	0.966	9.00
25%	0.461	1.889	51.00
Vp75-25	=	1.384	m3
ap50	=	7.958	m2
tp75-25	=	42.000	min
Soil Infiltration, f	=	**6.90E-05**	m/sec

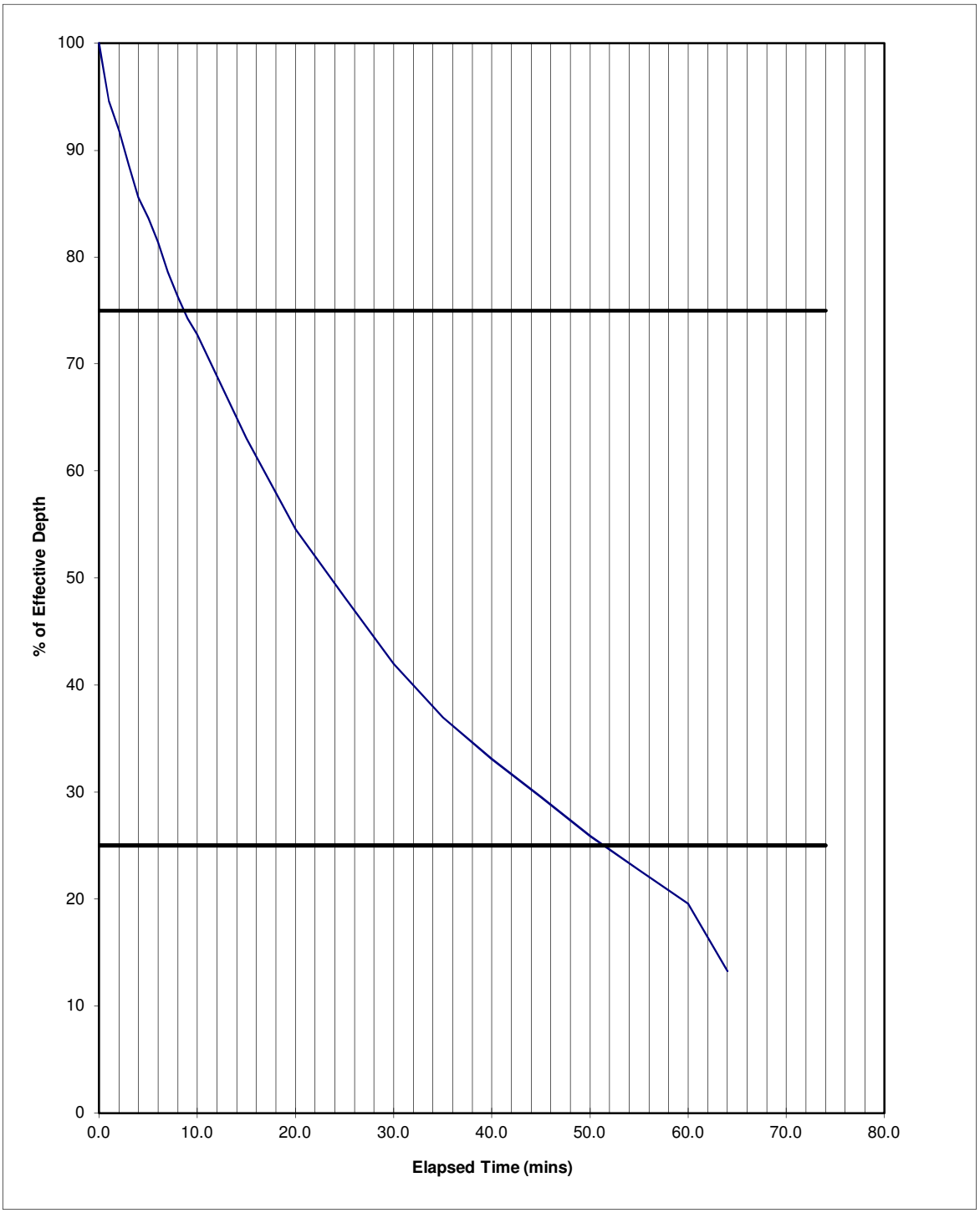
Remarks Trial Pit excavated to a depth of 2.50m bgl, but partial collapse whilst filling with water during Test 1 lead to a total depth of 2.35m for the soakaway test on which the calculation of soil infiltration was based.

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72703
		Test No	2
		Project No	PC197626
Client	Highways England	Date	10/09/2019



tp75	=	9.00
tp25	=	51.00

Remarks Trial Pit excavated to a depth of 2.50m bgl, but partial collapse whilst filling with water during Test 1 lead to a total depth of 2.35m for the soakaway test on which the calculation of soil infiltration was based.

GEOTECHNICS

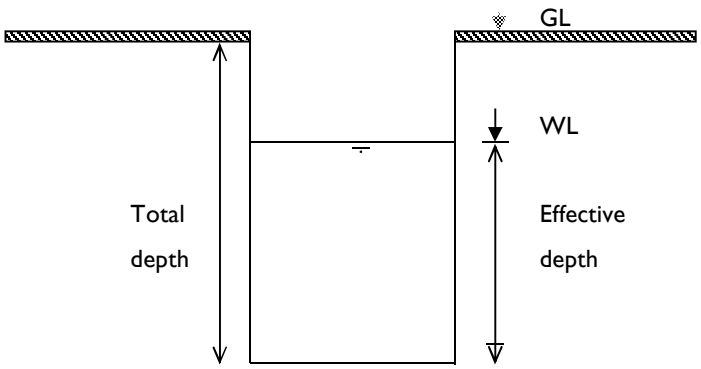
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72703
		Test No	3
		Project No	PC197626
Client	Highways England	Date	10/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	0.55	1.80	100.00
1.00	0.61	1.75	97.00
2.00	0.66	1.70	94.22
3.00	0.71	1.64	91.05
4.00	0.76	1.59	88.27
5.00	0.81	1.54	85.77
6.00	0.84	1.51	83.71
7.00	0.89	1.47	81.43
8.00	0.91	1.44	79.99
9.00	0.97	1.38	76.82
10.00	1.02	1.33	74.10
15.00	1.18	1.18	65.31
20.00	1.32	1.03	57.37
25.00	1.46	0.89	49.64
43.00	1.77	0.58	32.18
45.00	1.79	0.56	31.02
50.00	1.87	0.48	26.57
55.00	1.93	0.42	23.12
60.00	1.97	0.38	20.90
65.00	2.04	0.32	17.51

TRIAL PIT SOAKAWAY



Trial pit length	=	3.000	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.350	m
Effective depth (Head of Water)	=	1.799	m

Initial depth from GL	=	0.551m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.349	1.001	10.00
25%	0.450	1.900	52.00
Vp75-25	=	1.349	m3
ap50	=	7.797	m2
tp75-25	=	42.000	min
Soil Infiltration, f	=	**6.87E-05**	m/sec

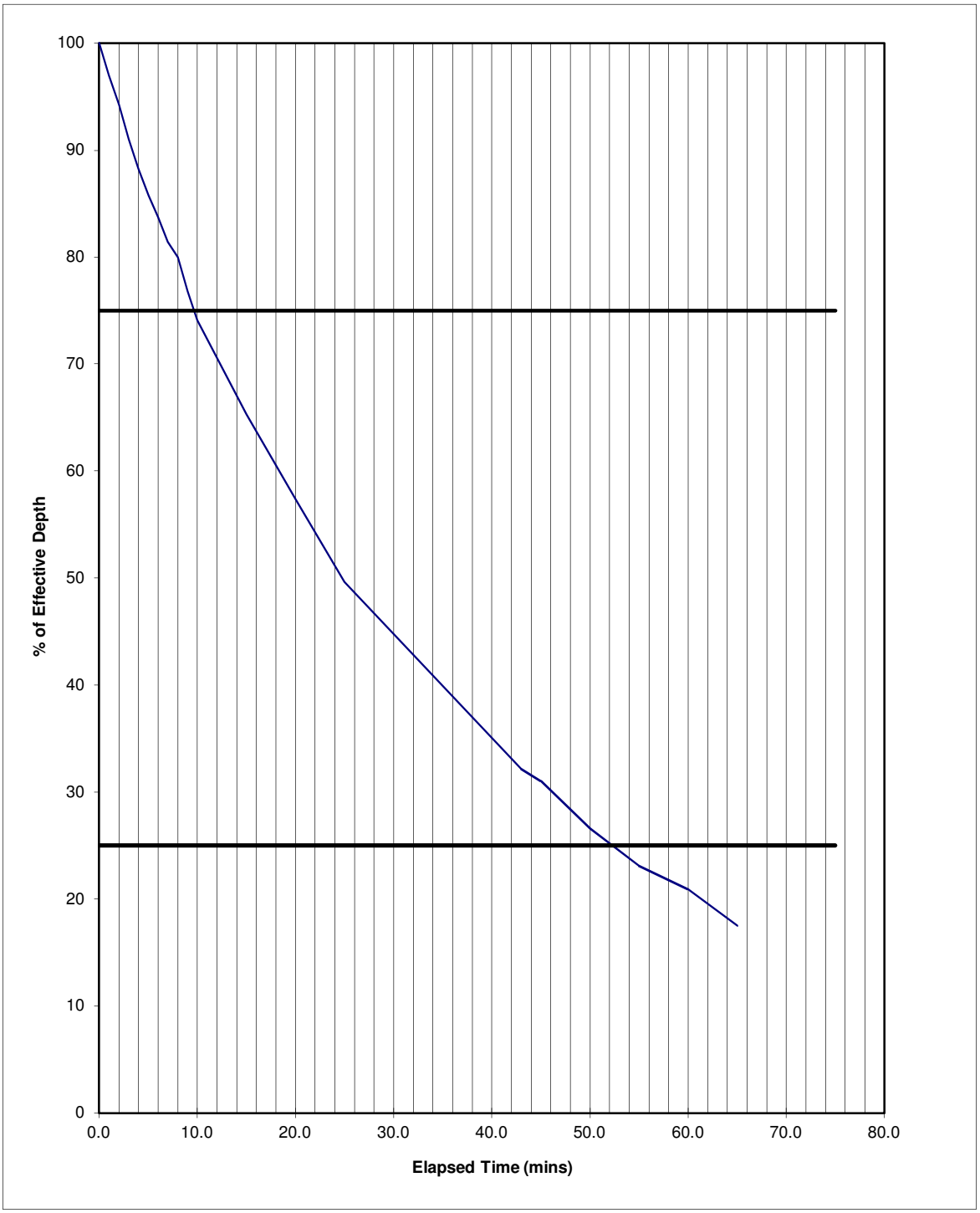
Remarks Trial Pit excavated to a depth of 2.50m bgl, but partial collapse whilst filling with water during Test 1 lead to a total depth of 2.35m for the soakaway test on which the calculation of soil infiltration was based.

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72703
		Test No	3
		Project No	PC197626
Client	Highways England	Date	10/09/2019



tp75	=	10.00
tp25	=	52.00

Remarks Trial Pit excavated to a depth of 2.50m bgl, but partial collapse whilst filling with water during Test 1 lead to a total depth of 2.35m for the soakaway test on which the calculation of soil infiltration was based.

GEOTECHNICS

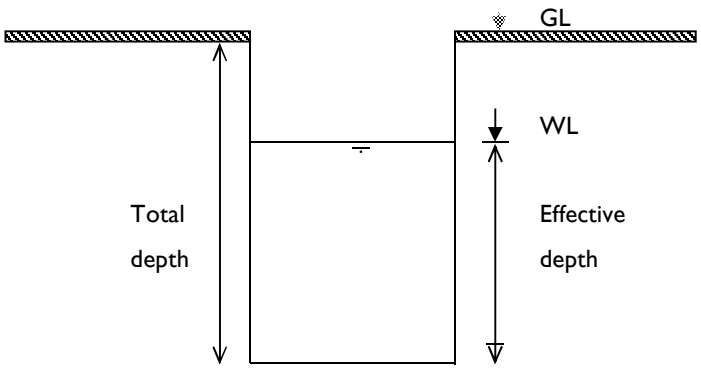
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72704
		Test No	1
		Project No	PC197626
Client	Highways England	Date	11/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	1.25	1.35	100.00
1.00	1.28	1.32	97.78
2.00	1.31	1.29	95.56
3.00	1.32	1.28	94.81
4.00	1.33	1.27	94.07
5.00	1.34	1.26	93.33
6.00	1.35	1.25	92.59
7.00	1.36	1.24	91.85
8.00	1.37	1.23	91.11
9.00	1.38	1.22	90.37
10.00	1.39	1.21	89.63
15.00	1.43	1.17	86.67
20.00	1.45	1.15	85.19
25.00	1.48	1.12	82.96
30.00	1.51	1.09	80.74
40.00	1.55	1.05	77.78
50.00	1.58	1.02	75.56
60.00	1.61	0.99	73.33
75.00	1.64	0.96	71.11
90.00	1.67	0.93	68.89
105.00	1.70	0.90	66.67
120.00	1.72	0.88	65.19
135.00	1.75	0.85	62.96
150.00	1.79	0.81	60.00
165.00	1.80	0.80	59.26

TRIAL PIT SOAKAWAY



Trial pit length	=	3.300	m
Trial pit width	=	0.600	m
Trial pit depth	=	2.600	m
Effective depth (Head of Water)	=	1.350	m

Initial depth from GL	=	1.250m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.013	1.588	
25%	0.338	2.263	
Vp75-25	=	m3	
ap50	=	m2	
tp75-25	=	min	
Soil Infiltration, f	=	*	m/sec

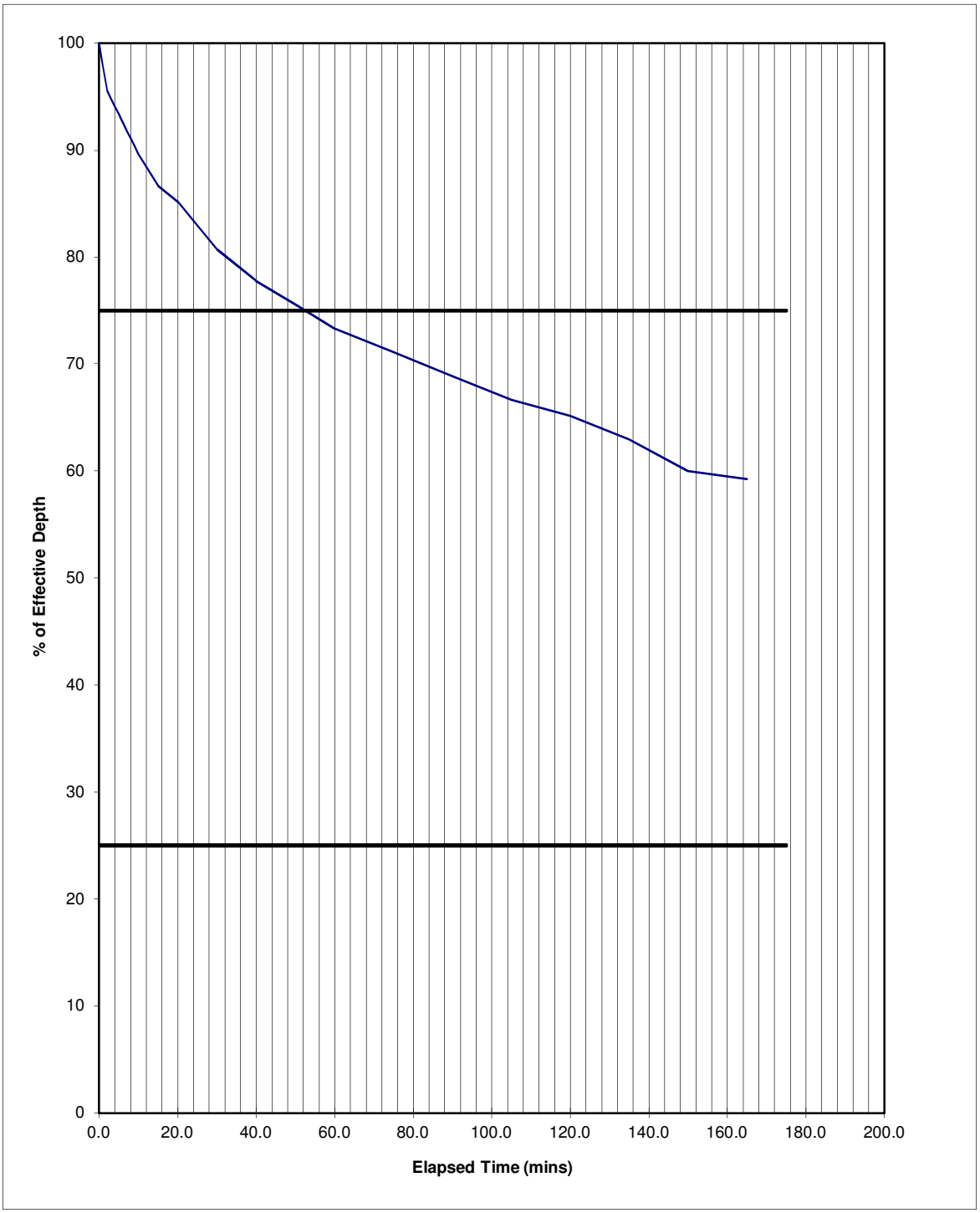
Remarks *Not possible to calculate Infiltration Rate due to very slow dissipation rate of water.
Test cancelled on instructions of the Investigation Supervisor.

GEOTECHNICS

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72704
		Test No	1
		Project No	PC197626
Client	Highways England	Date	11/09/2019



tp75	=
tp25	=

Remarks *Not possible to calculate Infiltration Rate due to very slow dissipation rate of water.
Test cancelled on instructions of the Investigation Supervisor.

GEOTECHNICS

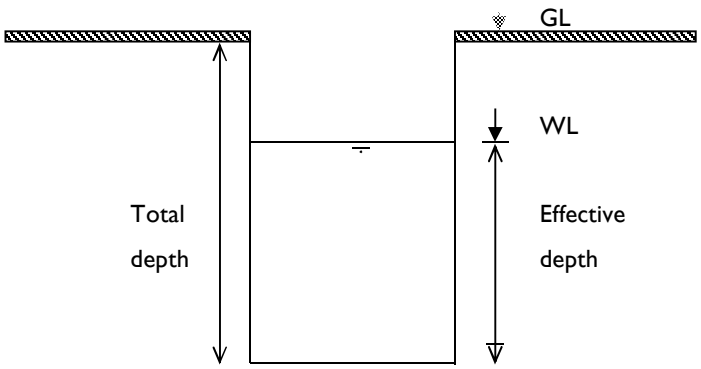
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72705
		Test No	1
		Project No	PC197626
Client	Highways England	Date	11/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	0.93	1.57	100.00
1.00	0.97	1.53	97.32
2.00	1.01	1.49	94.90
3.00	1.02	1.48	94.27
4.00	1.05	1.45	92.36
5.00	1.07	1.43	91.08
10.00	1.16	1.34	85.35
15.00	1.26	1.24	78.98
20.00	1.31	1.19	75.80
30.00	1.42	1.08	68.79
45.00	1.52	0.98	62.42
60.00	1.68	0.82	52.23
90.00	1.80	0.70	44.59
120.00	1.95	0.55	35.03
145.00	2.07	0.43	27.39

TRIAL PIT SOAKAWAY



Trial pit length	=	3.000	m
Trial pit width	=	0.500	m
Trial pit depth	=	2.500	m
Effective depth (Head of Water)	=	1.570	m

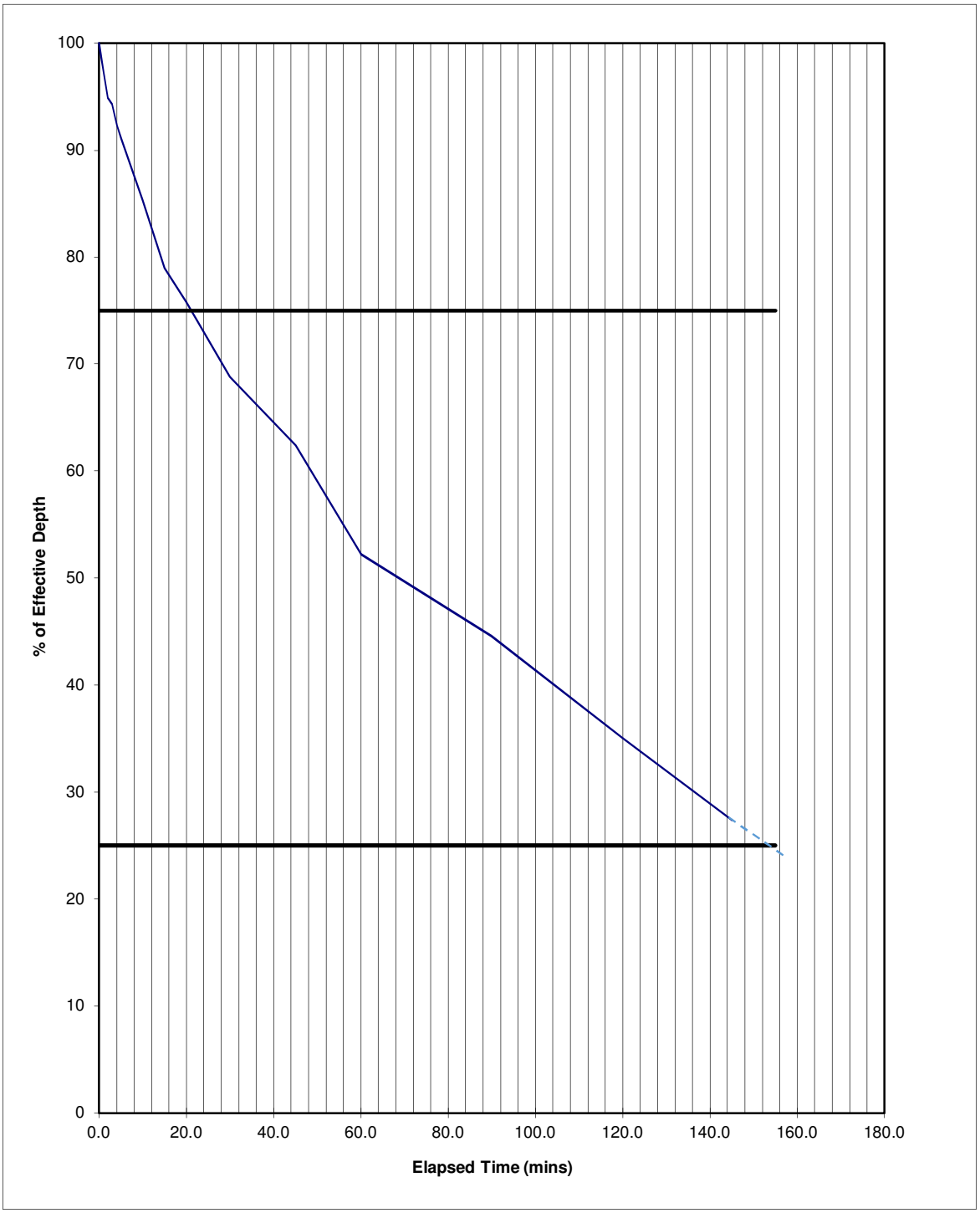
Initial depth from GL	=	0.930m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	1.178	1.323	21.00
25%	0.393	2.108	152.00
Vp75-25	=	1.178	m3
ap50	=	6.995	m2
tp75-25	=	131.000	min
Soil Infiltration, f	=	**2.14E-05**	m/sec

Remarks Soil Infiltration rate obtained by extrapolating test curve to cross 25% dissipation line.

INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72705
		Test No	1
		Project No	PC197626
Client	Highways England	Date	11/09/2019



tp75	=	21.00
tp25	=	152.00

Remarks Soil Infiltration rate obtained by extrapolating test curve to cross 25% dissipation line.

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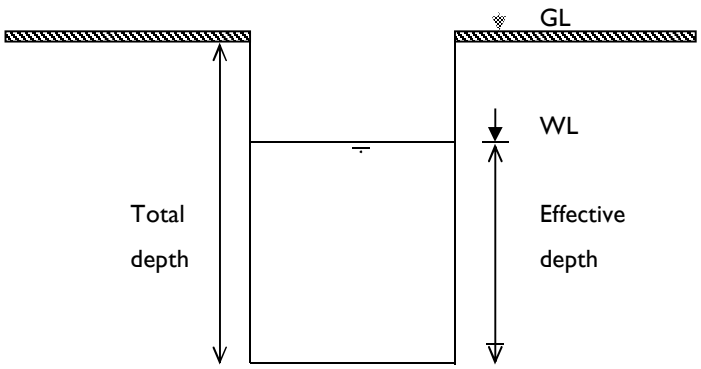
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72705
		Test No	2
		Project No	PC197626
Client	Highways England	Date	11/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	0.97	0.83	100.00
1.00	1.01	0.79	95.18
2.00	1.02	0.78	93.98
3.00	1.06	0.74	89.16
4.00	1.10	0.70	84.34
5.00	1.12	0.68	81.93
10.00	1.19	0.61	73.49
15.00	1.25	0.55	66.27
20.00	1.29	0.51	61.45
30.00	1.39	0.41	49.40
45.00	1.52	0.28	33.73
60.00	1.63	0.17	20.48

TRIAL PIT SOAKAWAY



Trial pit length	=	3.000	m
Trial pit width	=	1.000	m
Trial pit depth	=	1.800	m
Effective depth (Head of Water)	=	0.830	m

Initial depth from GL	=	0.970m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	0.623	1.178	9.00
25%	0.208	1.593	55.00
Vp75-25	=	1.245	m3
ap50	=	6.320	m2
tp75-25	=	46.000	min
Soil Infiltration, f	=	**7.14E-05**	m/sec

Remarks Trial Pit excavated to a depth of 2.50m bgl and 0.50m in width, but partial collapse whilst filling with water lead to a total depth of 1.80m and pit width to increase to 1.00m for the soakaway test on which the calculation of soil infiltration was based.

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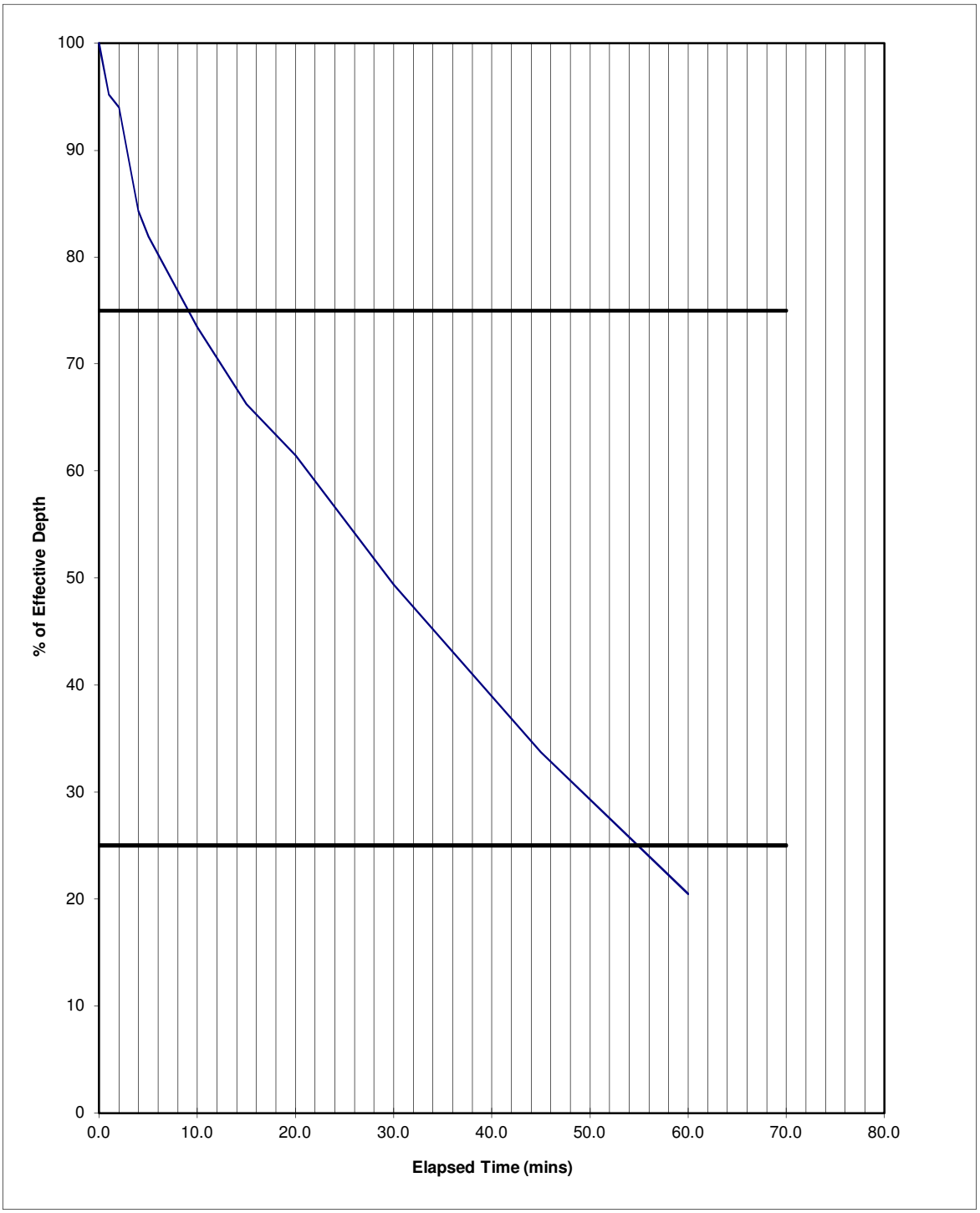
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72705
		Test No	2
		Project No	PC197626
Client	Highways England	Date	11/09/2019



tp75	=	9.00
tp25	=	55.00

Remarks Trial Pit excavated to a depth of 2.50m bgl and 0.50m in width, but partial collapse whilst filling with water lead to a total depth of 1.80m and pit width to increase to 1.00m for the soakaway test on which the calculation of soil infiltration was based.

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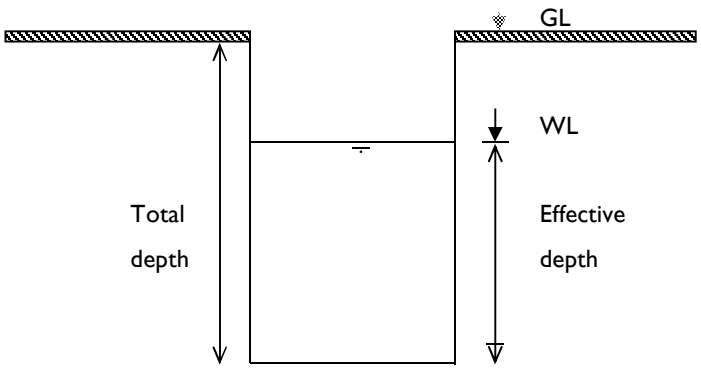
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72705
		Test No	3
		Project No	PC197626
Client	Highways England	Date	11/09/2019

ELAPSED TIME (mins)	DEPTH of water below ground level (m)	HEAD (m)	HEAD (%)
0.00	0.84	0.96	100.00
1.00	0.89	0.91	94.79
2.00	1.05	0.75	78.13
3.00	1.06	0.74	77.08
4.00	1.08	0.72	75.00
5.00	1.10	0.70	72.92
10.00	1.18	0.62	64.58
15.00	1.23	0.57	59.38
20.00	1.28	0.52	54.17
30.00	1.34	0.46	47.92
45.00	1.50	0.30	31.25
60.00	1.60	0.20	20.83

TRIAL PIT SOAKAWAY



Trial pit length	=	3.000	m
Trial pit width	=	1.000	m
Trial pit depth	=	1.800	m
Effective depth (Head of Water)	=	0.960	m

Initial depth from GL	=	0.840m	
% of effective depth	Head (m)	Depth from GL (m)	Time (mins)
75%	0.720	1.080	4.00
25%	0.240	1.560	54.00
Vp75-25	=	1.440	m3
ap50	=	6.840	m2
tp75-25	=	50.000	min
Soil Infiltration, f	=	**7.02E-05**	m/sec

Remarks Trial Pit excavated to a depth of 2.50m bgl and 0.50m in width, but partial collapse whilst filling with water on Test 2 lead to a total depth of 1.80m and pit width to increase to 1.00m for the soakaway test on which the calculation of soil infiltration was based.

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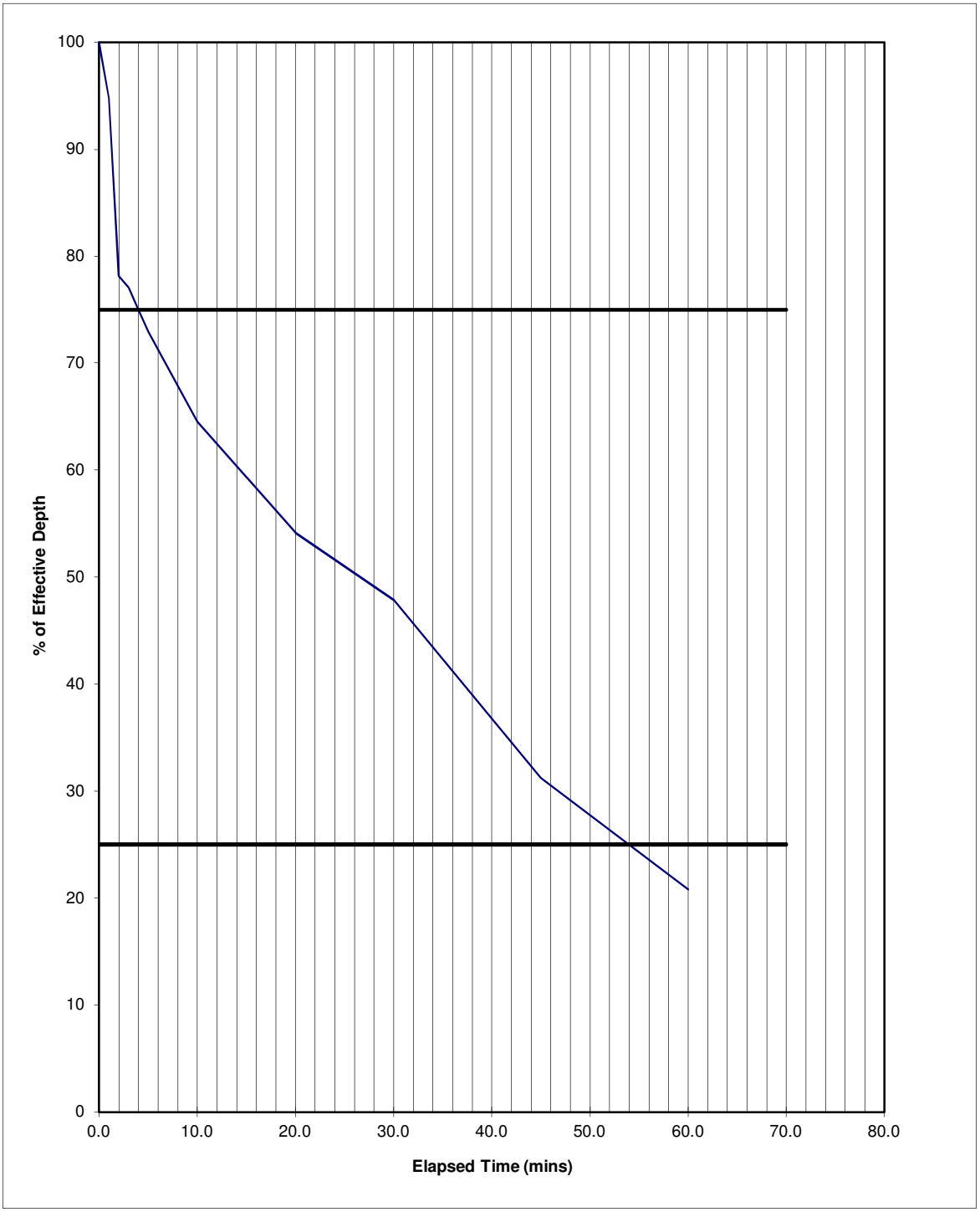
INSITU TESTING - Soakaway Test

Form INS009 Rev 7

Project	A303 AMESBURY TO BERWICK DOWN - PHASE 7A (ii)	Trial Pit	STP72705
		Test No	3
		Project No	PC197626
Client	Highways England	Date	11/09/2019



tp75	=	4.00
tp25	=	54.00

Remarks

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APPENDIX II

Laboratory Test Results - Geotechnical

DATA SHEET - Laboratory Test Symbols

Classification and Strength

Symbol	**C - Clay**	**M - Silt**
	(0 - containing organic matter)	
	Plasticity	L - Low
		I - Intermediate
		H - High
		V - Very High
		E - Extremely High
Ip	Plasticity Index	
%	% retained on 425 µm sieve, shown under Ip value	
w_L	Liquid Limit	
w_P	Plastic Limit	
NP	Non-Plastic	
NAT	Sample tested in natural state	
w	Water Content	
P_d	Particle Density	
Test	**Quick undrained triaxial tests**	
	SS	Single stage - 102mm diameter.
	S3	Single stage - set of 3 38mm diameter.
	MS	Multistage - 102mm diameter.
	D	Drained Test
	HV	Hand Vane
	PP	Pocket Penetrometer (kg/cm²)
	NST	Not suitable for test
γ_b	Bulk Density	
σ_3	Triaxial Cell Pressure	
$\sigma_1 - \sigma_3$	Deviator Stress	
##	Excessive Strain	
c_u	Undrained Cohesion	
c	Cohesion Intercept	
ϕ	Angle of Shearing Resistance	
Linear Shrink	Linear Shrinkage	
Stab add-	Stabiliser which is added	

Consolidation

m_v	Coefficient of Volume Compressibility
c_{v50}	Coefficient of Consolidation - Log t
c_{v90}	Coefficient of Consolidation - $\sqrt{t}$

Rock

UF	Unacceptable Failure

Chemical Analysis

Acid Soluble	Total sulphate in specimen, expressed as SO_3 %, value in brackets expressed as SO_4 %
Water Soluble	Soluble sulphate in 2:1 water : soil extract, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
In Water	Sulphate content of groundwater, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
pH	pH value
Organic content	Organic content expressed as a percentage of dry weight
Chloride	Chloride Ion content expressed as a percentage of dry weight

MCV, Compaction, CBR

MCV	Moisture Condition Value at natural water content
MCC	Moisture Condition Calibration
CCV	Chalk Crushing Value

Compaction

Type	2.5	= 2.5 kg Rammer
	4.5	= 4.5 kg Rammer
	V	= Vibrating Hammer
γ_b	Bulk Density	
γ_d	Dry Density	

CBR California Bearing Ratio

Type	2.5	= Test on Specimen Recompacted using 2.5 kg Rammer
	4.5	= As above but using 4.5 kg Rammer
	V	= As above but using Vibrating Hammer
	M	= Test on open drive mould specimen cut in field
	S	= Soaked Specimen
Top	CBR at top of mould	
Bottom	CBR at bottom of mould	
ND	None Detected	
*	In the Sample Description denotes a laboratory only description	

Laboratory Test Certificate

Issued To	Geotechnics Ltd The Geotechnical Centre 203 Torrington Avenue Tile Hill Coventry, CV4 9AP	**Date of issue**	01/11/2019
		Issue No.	1
		Client Ref. No.	-
		Samples / Material Source	
		Samples Recv'd	05/09/19 to 10/10/19
Testing Start Date	06/09/2019	Sample State	As received
Testing Complete	31/10/2019	Sampled by	Geotechnics Limited
Comments	Rock Moisture Content performed according In-House procedure, not to IRSM accredited Method		
Project No	PC197626		
Project Name	A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)		

Summary of Tests

Standard	Test Description	Test Quantity	UKAS
BS EN ISO 17892-1:2014	Water Content	135	Yes
BS EN ISO 17892-3:2015 Cl. 5.1	Particle Density by Fluid Pycnometer	3	Yes
BS EN ISO 17892-12:2018 Cl. 5.3 & 5.5	Liquid Limit and Plastic Limit	8	Yes
BS EN ISO 17892-4:2016 Cl. 5.2	Particle Size Distribution by Sieving Method	24	Yes
BS EN ISO 17892-4:2016 Cl. 5.4	Particle Size Distribution by Pipette Method	24	Yes
BS 1377-4:1990 Cl. 3.3	2.5 kg Rammer Dry Density/Moisture Content Relationship (Compaction)	6	Yes
BS 1377-4:1990 Cl. 5.5	Moisture Condition Value/Moisture Content Relationship	7	Yes
BS 1377-4:1990 Cl. 6	Chalk Crushing Value (CCV)	54	Yes
BS 1377-2:1990 Cl. 3.3	Saturation Moisture Content of Chalk	187	Yes
ISRM Suggested Method (1985)	Point Load Strength of Rock	74	Yes

Note: Any descriptions, opinions or interpretations are outside the scope of UKAS accreditation.
The results within this report relate only to the samples tested and received from the client.

UKAS TESTING
1365

Test Results checked and approved for issue.
Signed for and on behalf of Geotechnics Limited

[redacted]

Stephane Schiano (Laboratory Testing Manager)

GEOTECHNICS
geotechnical and geoenvironmental specialists
203 Torrington Avenue, Tile Hill,
Coventry, CV4 9UT

LABORATORY RESULTS - Classification and Strength

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
R71201	0.50 (0.50)	D	C26942	CHALK.					17.8						
R71201	5.96-6.15 (5.96)	C	C28093	CHALK.					26.0						
R71202	0.50 (0.50)	D	C27195	CHALK.					16.0						
R71202	3.94-4.00 (3.94)	C	C27901	CHALK.					22.9						
R71204	1.00 (1.00)	D	C27197	CHALK.					12.9						
R71204	9.50-9.72 (9.50)	C	C27891	CHALK.					25.9						
R71205	0.50 (0.50)	D	C27678	CHALK.					14.1						
R71205	6.10-6.23 (6.10)	C	C28423	CHALK.					22.8						
R71205	13.30-13.52 (13.30)	C	C28420	CHALK.					22.5						
R71206	1.00 (1.00)	D	C27691	CHALK.					19.0						
R71206	6.00-6.12 (6.00)	C	C28294	CHALK.					23.0						
R71207	1.00 (1.00)	D	C27709	CHALK.					17.2						
R71207	4.22-4.36 (4.22)	C	C28427	CHALK.					24.5						
R71207	10.00-10.20 (10.00)	C	C28425	CHALK.					24.5						
R71208	1.00 (1.00)	D	C26984	CHALK.					17.1						
R71208	6.80-6.92 (6.80)	C	C28105	CHALK.					24.8						

Remarks AGS
NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Classification and Strength

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
R71208	10.74-11.00 (10.74)	C	C28103	CHALK.					26.6						
R71209	1.00 (1.00)	D	C27193	CHALK.					17.6						
R71209	11.85-12.07 (11.85)	C	C27898	CHALK.					25.7						
R71211	0.50 (0.50)	D	C27202	Light brown very silty very sandy GRAVEL.					10.7						
R71211	4.80-4.90 (4.80)	C	C28046	CHALK.					20.5						
R71211	11.40-11.51 (11.40)	C	C28047	CHALK.					20.1						
R71212	1.00 (1.00)	D	C27704	CHALK.					15.7						
R71212	7.86-8.00 (7.86)	C	C28101	CHALK.					29.0						
R71212	13.67-13.90 (13.67)	C	C28077	CHALK.					23.0						
R71213	1.00 (1.00)	B	C27582	CHALK.					14.6						
R71213	2.78-2.92 (2.78)	C	C27735	CHALK.					25.8						
R71802	0.50 (0.50)	D	C26930	CHALK.					16.1						
R71802	19.65-19.80 (19.65)	C	C27113	CHALK.					23.9						
R71802	27.93-28.15 (27.93)	C	C27121	CHALK.					26.6						
R71802	35.09-35.33 (35.09)	C	C28056	CHALK.					24.0						
R71803	1.00 (1.00)	D	C27204	CHALK.					20.6						

Remarks AGS
NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Classification and Strength

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
R71803	4.20-4.65 (4.20)	D	C27773	CHALK.					20.3						
R71803	16.20-16.65 (16.20)	D	C27700	CHALK.					21.2						
R71803	33.82-34.20 (33.82)	C	C28089	CHALK.					23.5						
R71803	42.60-43.10 (42.60)	C	C28091	CHALK.					22.5						
R71804	1.00 (1.00)	D	C26966	CHALK.					18.9						
R71804	9.83-10.00 (9.83)	C	C27107	CHALK.					26.6						
R71804	19.77-20.27 (19.77)	C	C27105	CHALK.					25.1						
R71804	26.50-26.97 (26.50)	C	C28116	CHALK.					26.3						
R71804	36.21-36.51 (36.21)	C	C28120	CHALK.					22.8						
R71806	1.00 (1.00)	D	C26055	CHALK.					20.4						
R71806	14.78-15.16 (14.78)	C	C27136	CHALK.					28.4						
R71806	20.34-20.50 (20.34)	C	C27135	CHALK.					26.3						
R71806	26.24-26.40 (26.24)	C	C27137	CHALK.					28.3						
R71806	29.87-30.12 (29.87)	C	C27134	CHALK.					23.1						
R71807	0.50 (0.50)	D	C26053	CHALK.					13.9						

Remarks AGS
NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Classification and Strength

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
R71807	1.40-1.50 (1.40)	C	C26738	CHALK.					24.3						
R71807	7.15-7.30 (7.15)	C	C26724	CHALK.					26.0						
R71807	19.08-19.47 (19.08)	C	C26737	CHALK.					24.4						
R71807	29.12-29.38 (29.12)	C	C26723	CHALK.					25.1						
R71808	0.50 (0.50)	D	C26938	CHALK.					11.3						
R71808	11.62-11.70 (11.62)	C	C27085	CHALK.					24.7						
R71808	21.94-22.05 (21.94)	C	C27091	CHALK.					26.7						
R71808	23.20-23.33 (23.20)	C	C27088	CHALK.					25.6						
R71808	38.70-38.80 (38.70)	C	C27129	CHALK.					23.0						
R71810	0.50 (0.50)	D	C26062	CHALK.					11.1						
R71810	1.00 (1.00)	D	C26063	CHALK.					13.7						
R71810	2.51-2.64 (2.51)	C	C26421	CHALK.					29.4						
R71810	12.56-12.71 (12.56)	C	C26422	CHALK.					23.5						
R71810	36.32-36.50 (36.32)	C	C26743	CHALK.					22.9						
R71810	44.21-44.80 (44.21)	C	C26721	CHALK.					18.2						

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Classification and Strength

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
R71811	3.20-3.65 (3.20)	D	C26964	CHALK.					24.8						
R71811	6.20-6.65 (6.20)	D	C26957	CHALK.					20.0						
R71811	11.30-11.40 (11.30)	C	C27095	CHALK.					25.8						
R71811	20.38-20.50 (20.38)	C	C27100	CHALK.					23.8						
R71811	35.27-35.50 (35.27)	C	C27098	CHALK.					22.6						
R71811	43.85-44.08 (43.85)	C	C28112	CHALK.					21.5						
R71812	1.00 (1.00)	D	C26058	CHALK.					13.8						
R71812	7.42-7.50 (7.42)	C	C26456	CHALK.					23.8						
R71812	14.50-14.77 (14.50)	C	C26461	CHALK.					25.2						
R71812	22.53-22.83 (22.53)	C	C26763	CHALK.					25.9						
R71812	26.80-27.04 (26.80)	C	C26760	CHALK.					20.4						
R71814	0.50 (0.50)	D	C25840	CHALK.					11.2						
R71814	1.00-1.20 (1.00)	D	C25842	CHALK.					23.5						
R71814	3.80-3.90 (3.80)	C	C26439	CHALK.					21.9						
R71814	8.14-8.24 (8.14)	C	C26436	CHALK.					23.1						

Remarks AGS
NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Classification and Strength

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
R71814	13.20-13.33 (13.20)	C	C26438	CHALK.					25.6						
R71814	24.80-25.00 (24.80)	C	C26441	CHALK.					26.8						
R71815	0.60 (0.60)	D	C25836	CHALK.					20.2						
R71815	1.00 (1.00)	D	C25833	CHALK.					21.5						
R71815	6.82-6.88 (6.82)	C	C26473	CHALK.					23.8						
R71815	28.88-29.23 (28.88)	C	C26764	CHALK.					20.3						
R71815	41.24-41.49 (41.24)	C	C26769	CHALK.					21.4						
R71816	1.00-1.20 (1.00)	D	C25845	CHALK.					13.9						
R71816	8.88-9.04 (8.88)	C	C26446	CHALK.					26.8						
R71816	17.97-18.16 (17.97)	C	C26449	CHALK.					26.4						
R71816	24.34-24.67 (24.34)	C	C26476	CHALK.					24.2						
R71816	33.52-33.72 (33.52)	C	C26730	CHALK.					24.4						
R71818	0.50 (0.50)	D	C25837	CHALK.					16.2						
R71818	3.10-3.20 (3.10)	C	C25863	CHALK.					25.1						
R71818	12.50-12.61 (12.50)	C	C25868	CHALK.					20.9						

Remarks AGS
NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Classification and Strength

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
R71818	17.72-17.90 (17.72)	C	C25869	CHALK.					23.5						
R71818	30.51-30.87 (30.51)	C	C26336	CHALK.					20.2						
R71819	0.60-0.80 (0.60)	D	C25832	CHALK.					20.0						
R71819	5.50-5.62 (5.50)	C	C25855	CHALK.					22.5						
R71819	13.90-14.25 (13.90)	C	C25856	CHALK.					25.1						
R71819	20.00-20.15 (20.00)	C	C25851	CHALK.					24.2						
R71819	27.20-27.58 (27.20)	C	C26431	CHALK.					26.5						
R71820	0.50 (0.50)	D	C25828	CHALK.					19.0						
R71820	3.72-3.85 (3.72)	C	C25896	CHALK.					23.5						
R71820	8.10-8.31 (8.10)	C	C25894	CHALK.					25.4						
R71820	13.41-13.57 (13.41)	C	C25899	CHALK.					27.1						
R71820	22.40-22.56 (22.40)	C	C25937	CHALK.					23.2						
STP70101	0.60 (0.60)	D	C27677	CHALK, recovered as sandy silty GRAVEL.					19.0						
STP70101	1.00 (1.00)	D	C27676	CHALK.					(2.70)						
STP70102	2.00 (2.00)	D	C27747	CHALK, recovered as sandy very silty GRAVEL.					23.6						
STP70801	1.00 (1.00)	D	C26975	MADE GROUND: Reddish brown sightly sandy slightly gravelly clay.	CI	21 (45%)	44	23	16.0						

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - *Classification and Strength*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
STP7080 1	2.10 (2.10)	D	C26977	CHALK.					18.5						
STP7080 2	0.50 (0.50)	D	C26981	CHALK.					21.9						
STP7110 1	1.00-1.20 (1.00)	D	C26512	Light yellowish brown very silty SAND and GRAVEL.		(42%)	41	NP	13.2						
STP7110 2	2.00 (2.00)	D	C26926	CHALK, recovered as sandy silty GRAVEL.					15.0						
STP7140 1	0.50 (0.50)	D	C26935	Light brown slightly sandy slightly gravelly CLAY.	CI	16 (37%)	36	20	11.8						
STP7140 1	1.00 (1.00)	B	C26866	CHALK.					18.2						
STP7140 2	3.00 (3.00)	D	C27763	CHALK, recovered as silty GRAVEL.					26.2						
STP7140 3	1.10 (1.10)	B	C26862	CHALK.					19.9						
STP7140 3	1.10 (1.10)	D	C26960	CHALK.					19.4						
STP7140 4	0.50 (0.50)	D	C27740	Yellowish brown slightly sandy slightly gravelly CLAY.	CI	19 (38%)	44	25	20.4						
STP7140 5	1.20 (1.20)	B	C26871	CHALK.					15.4						
STP7140 6	1.20 (1.20)	D	C26969	CHALK.					20.0						
STP7160 2	0.20 (0.20)	D	C27162	Light yellowish brown slightly sandy slightly gravelly CLAY.	CI	19 (42%)	45	26	21.3						
STP7160 2	1.00 (1.00)	D	C27163	Soft light yellowish brown slightly sandy slightly gravelly CLAY.					15.8 (2.70)						
STP7160 3	3.00 (3.00)	D	C27761	CHALK, recovered as slightly sandy silty GRAVEL.					25.0						
STP7160 4	2.00 (2.00)	D	C27712	CHALK, recovered as sandy very silty GRAVEL.					22.0 (2.68)						
STP7270 1	0.50 (0.50)	D	C27170	Orangish brown slightly sandy slightly gravelly CLAY.	CI	17 (40%)	40	23	11.6						
STP7270 1	2.50 (2.50)	D	C27172	Light brown very sandy very silty GRAVEL.					9.7						
STP7270 2	1.00 (1.00)	D	C27183	Light yellowish brown slightly sandy gravelly CLAY with a low cobble content.	CL	10 (47%)	28	18	9.5						
STP7270 3	2.00 (2.00)	D	C27175	CHALK, recovered as sandy very silty GRAVEL.					11.9						

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Classification and Strength

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
STP7270 4	0.50 (0.50)	D	C27188	Light brown slightly sandy slightly gravelly CLAY.	CI	16 (42%)	38	22	11.6						
STP7270 4	2.00 (2.00)	D	C27189	CHALK, recovered as slightly sandy very silty GRAVEL.					19.7						
STP7270 5	2.40 (2.40)	D	C27166	CHALK, recovered as sandy silty GRAVEL.					23.2						
WS71501	1.90-2.00 (1.90)	D	C27688	CHALK.					22.9						
WS71502	1.90-2.00 (1.90)	D	C27660	CHALK.					21.8						
WS71503	4.00-4.25 (4.00)	D	C27665	CHALK.					22.8						
WS71504	1.90-2.00 (1.90)	D	C27685	CHALK.					21.9						
WS71505	3.80-4.00 (3.80)	D	C27658	CHALK.					22.8						

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - *Atterberg Limit*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					Results								
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Symbol	ρ %	>425 sieve µm	w_L %	w_p %
						Cone Pene.	Water % (Factor)					
STP7080 1	1.00 (1.00)	D	C26975	MADE GROUND: Reddish brown sightly sandy slightly gravelly clay.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	21	45%	44	23
STP7110 1	1.00-1.20 (1.00)	D	C26512	Light yellowish brown very silty SAND and GRAVEL.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve					42%	41	NP
STP7140 1	0.50 (0.50)	D	C26935	Light brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	16	37%	36	20
STP7140 4	0.50 (0.50)	D	C27740	Yellowish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	19	38%	44	25
STP7160 2	0.20 (0.20)	D	C27162	Light yellowish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	19	42%	45	26
STP7270 1	0.50 (0.50)	D	C27170	Orangish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	17	40%	40	23
STP7270 2	1.00 (1.00)	D	C27183	Light yellowish brown slightly sandy gravelly CLAY with a low cobble content.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	10	47%	28	18
STP7270 4	0.50 (0.50)	D	C27188	Light brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	16	42%	38	22

Remarks AGS

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71201	1.00 (1.00)	B	C26887	CHALK.	23.3	1.66										
R71201	2.68-2.78 (2.68-2.78)	C	C28092	CHALK.	25.1	1.61										
R71201	5.96-6.15 (5.96-6.15)	C	C28093	CHALK.			3.35									
R71201	7.56-7.63 (7.56-7.63)	C	C28094	CHALK.	25.2	1.61										
R71201	9.56-9.72 (9.56-9.72)	C	C28095	CHALK.	23.2	1.66										
R71202	1.00 (1.00)	B	C27070	CHALK.	23.5	1.65										
R71202	3.94-4.00 (3.94-4.00)	C	C27901	CHALK.	22.5	1.68										
R71202	6.55-6.62 (6.55-6.62)	C	C27900	CHALK.	26.7	1.57										
R71202	12.30-12.45 (12.30-12.45)	C	C27903	CHALK.	24.5	1.62	3.24									
R71204	1.00 (1.00)	B	C27055	CHALK.	21.7	1.70										
R71204	2.90-2.95 (2.90-2.95)	C	C27889	CHALK.	23.4	1.66										
R71204	6.20-6.40 (6.20-6.40)	C	C27890	CHALK.	26.0	1.59										
R71204	9.50-9.72 (9.50-9.72)	C	C27891	CHALK.			3.15									

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certificate

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LABORATORY RESULTS - *Classification Summary*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71204	14.84-15.04 (14.84-15.04)	C	C27894	CHALK.	25.4	1.60										
R71205	0.40-0.80 (0.40-0.80)	B	C27539	CHALK.			2.60									
R71205	0.80-1.20 (0.80-1.20)	B	C27545	CHALK.	27.3	1.55										
R71205	3.54-3.64 (3.54-3.64)	C	C28419	CHALK.	23.4	1.65										
R71205	9.58-9.70 (9.58-9.70)	C	C28424	CHALK.	19.9	1.76										
R71205	12.26-12.41 (12.26-12.41)	C	C28422	CHALK.	22.9	1.67										
R71205	13.30-13.52 (13.30-13.52)	C	C28420	CHALK.			3.22									
R71205	14.80-15.00 (14.80-15.00)	C	C28421	CHALK.	24.8	1.62										
R71206	0.70-1.20 (0.70-1.20)	B	C27558	CHALK.	21.8	1.70										
R71206	2.57-2.65 (2.57-2.65)	C	C28291	CHALK.	23.3	1.66										
R71206	4.36-4.47 (4.36-4.47)	C	C28293	CHALK.	27.9	1.54										

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LABORATORY RESULTS - *Classification Summary*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3					UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71206	9.60-9.76 (9.60-9.76)	C	C28292	CHALK.			3.70										
R71206	12.07-12.27 (12.07-12.27)	C	C28289	CHALK.	24.3	1.63											
R71207	1.00 (1.00)	B	C27563	CHALK.	25.0	1.61											
R71207	3.37-3.43 (3.37-3.43)	C	C28426	CHALK.	25.3	1.61											
R71207	7.20-7.35 (7.20-7.35)	C	C28429	CHALK.	23.0	1.67	3.72										
R71207	14.00-14.14 (14.00-14.14)	C	C28430	CHALK.	23.2	1.66											
R71208	1.00 (1.00)	B	C26844	CHALK.	21.6	1.70											
R71208	4.36-4.45 (4.36-4.45)	C	C28107	CHALK.	25.0	1.61											
R71208	8.50-8.60 (8.50-8.60)	C	C28102	CHALK.	22.4	1.68											
R71208	12.67-12.91 (12.67-12.91)	C	C28106	CHALK.	26.0	1.59											
R71208	15.45-15.64 (15.45-15.64)	C	C28104	CHALK.			3.50										
R71209	3.85-4.00 (3.85-4.00)	C	C27895	CHALK.	27.3	1.55											

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certificate

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LABORATORY RESULTS - *Classification Summary*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71209	11.85-12.07 (11.85-12.07)	C	C27898	CHALK.	25.9	1.59										
R71211	0.70-1.20 (0.70-1.20)	B	C27048	CHALK.	22.1	1.69										
R71211	5.49-5.59 (5.49-5.59)	C	C28049	CHALK.			3.50									
R71211	7.49-7.58 (7.49-7.58)	C	C28050	CHALK.	23.8	1.64										
R71211	11.40-11.51 (11.40-11.51)	C	C28047	CHALK.	21.6	1.71										
R71212	0.50 (0.50)	B	C27575	CHALK.	22.7	1.67										
R71212	1.00 (1.00)	B	C27547	CHALK.			3.35									
R71212	3.40-3.46 (3.40-3.46)	C	C28098	CHALK.	24.7	1.62										
R71212	5.22-5.33 (5.22-5.33)	C	C28099	CHALK.	23.9	1.64										
R71212	7.86-8.00 (7.86-8.00)	C	C28101	CHALK.			3.65									
R71212	11.10-11.24 (11.10-11.24)	C	C28076	CHALK.	24.2	1.63										
R71213	0.50 (0.50)	B	C27546	CHALK.	25.3	1.61										
R71213	1.00 (1.00)	B	C27582	CHALK.			3.44									

Remarks AGS NST - Not suitable for Test
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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71213	2.78-2.92 (2.78-2.92)	C	C27735	CHALK.	26.2	1.58										
R71213	5.92-6.22 (5.92-6.22)	C	C27736	CHALK.	27.7	1.55	3.01									
R71213	11.67-12.25 (11.67-12.25)	C	C27739	CHALK.	26.0	1.59										
R71802	0.25-1.20 (0.25-1.20)	B	C26878	CHALK.	24.9	1.61										
R71802	3.60-3.67 (3.60-3.67)	C	C28058	CHALK.	26.3	1.58										
R71802	9.60-9.71 (9.60-9.71)	C	C27118	CHALK.			3.00									
R71802	11.91-12.00 (11.91-12.00)	C	C27114	CHALK.	26.3	1.58										
R71802	13.77-13.94 (13.77-13.94)	C	C27111	CHALK.			3.26									
R71802	17.90-18.20 (17.90-18.20)	C	C27109	CHALK.	25.3	1.60										
R71802	21.44-21.63 (21.44-21.63)	C	C27117	CHALK.	27.5	1.55										
R71802	27.93-28.15 (27.93-28.15)	C	C27121	CHALK.	24.9	1.62										

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LABORATORY RESULTS - *Classification Summary*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71802	31.90-32.11 (31.90-32.11)	C	C28054	CHALK.	25.4	1.60										
R71802	37.58-37.85 (37.58-37.85)	C	C28055	CHALK.	26.0	1.59										
R71803	8.70-8.80 (8.70-8.80)	C	C28079	CHALK.	25.7	1.59										
R71803	10.32-10.44 (10.32-10.44)	C	C28078	CHALK.			3.26									
R71803	17.70-18.15 (17.70-18.15)	D	C27701	CHALK.	20.6	1.74										
R71803	20.16-20.42 (20.16-20.42)	C	C28085	CHALK.			3.20									
R71803	24.94-25.50 (24.94-25.50)	C	C28083	CHALK.	24.8	1.62										
R71803	30.80-31.05 (30.80-31.05)	C	C28088	CHALK.	29.5	1.50										
R71803	39.93-40.20 (39.93-40.20)	C	C28090	CHALK.	20.8	1.73										
R71804	1.00 (1.00)	B	C26864	CHALK.			2.72									
R71804	3.01-3.16 (3.01-3.16)	C	C27104	CHALK.	24.2	1.63										
R71804	6.02-6.20 (6.02-6.20)	C	C27106	CHALK.	25.7	1.59	3.97									

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certificate

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LABORATORY RESULTS - *Classification Summary*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71804	16.08-16.40 (16.08-16.40)	C	C27127	CHALK.	26.2	1.58										
R71804	22.70-23.15 (22.70-23.15)	C	C27125	CHALK.	26.4	1.58										
R71804	30.47-30.72 (30.47-30.72)	C	C28118	CHALK.	25.0	1.61										
R71804	38.50-38.75 (38.50-38.75)	C	C28117	CHALK.	23.7	1.65										
R71804	44.70-44.95 (44.70-44.95)	C	C28108	CHALK.	20.5	1.74										
R71806	1.00 (1.00)	B	C26280	CHALK.	21.1	1.72	2.98									
R71806	5.50-5.69 (5.50-5.69)	C	C27079	CHALK.	26.7	1.57										
R71806	12.36-12.60 (12.36-12.60)	C	C27083	CHALK.	24.4	1.63	3.42									
R71806	16.96-17.28 (16.96-17.28)	C	C27132	CHALK.	24.9	1.61										
R71806	29.87-30.12 (29.87-30.12)	C	C27134	CHALK.	23.1	1.66										
R71806	36.25-36.57 (36.25-36.57)	C	C27138	CHALK.	24.4	1.63										
R71806	41.97-42.42 (41.97-42.42)	C	C27140	CHALK.	20.6	1.73										

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LABORATORY RESULTS - *Classification Summary*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71807	1.00 (1.00)	B	C26287	CHALK.	25.4	1.60										
R71807	6.38-6.54 (6.38-6.54)	C	C26727	CHALK.			3.97									
R71807	7.15-7.30 (7.15-7.30)	C	C26724	CHALK.	23.9	1.64										
R71807	10.08-10.41 (10.08-10.41)	C	C26725	CHALK.			3.44									
R71807	13.15-13.30 (13.15-13.30)	C	C26726	CHALK.	24.9	1.62										
R71807	16.27-16.64 (16.27-16.64)	C	C26722	CHALK.	25.4	1.60										
R71807	22.81-23.29 (22.81-23.29)	C	C26750	CHALK.	26.7	1.57										
R71807	25.28-25.74 (25.28-25.74)	C	C26751	CHALK.	25.3	1.60										
R71807	31.00-31.12 (31.00-31.12)	C	C26735	CHALK.	23.6	1.65										
R71807	39.18-39.57 (39.18-39.57)	C	C26752	CHALK.	23.0	1.67										
R71808	0.25-0.80 (0.25-0.80)	B	C26863	CHALK.	19.2	1.78										
R71808	0.80-1.20 (0.80-1.20)	B	C26865	CHALK.			3.22									

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71808	10.84-10.90 (10.84-10.90)	D	C27086	CHALK.	22.5	1.68										
R71808	16.60-16.70 (16.60-16.70)	C	C27087	CHALK.	22.5	1.68										
R71808	16.87-17.00 (16.87-17.00)	C	C27090	CHALK.			3.41									
R71808	19.67-19.84 (19.67-19.84)	C	C27092	CHALK.	20.3	1.74										
R71808	24.95-25.18 (24.95-25.18)	C	C27093	CHALK.	24.6	1.62										
R71808	27.80-28.00 (27.80-28.00)	C	C27089	CHALK.	22.2	1.69										
R71808	32.36-32.70 (32.36-32.70)	C	C27130	CHALK.	24.0	1.64										
R71808	35.20-35.35 (35.20-35.35)	C	C27131	CHALK.	26.4	1.58										
R71810	0.25-0.70 (0.25-0.70)	B	C26277	CHALK.	23.3	1.66										
R71810	5.65-5.80 (5.65-5.80)	C	C26420	CHALK.	20.6	1.73										
R71810	10.05-10.18 (10.05-10.18)	C	C26416	CHALK.	27.0	1.56										

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71810	17.37-17.64 (17.37-17.64)	C	C26423	CHALK.	25.4	1.60										
R71810	19.15-19.65 (19.15-19.65)	C	C26745	CHALK.			3.59									
R71810	21.50-21.78 (21.50-21.78)	C	C26747	CHALK.	10.1	2.12										
R71810	24.86-25.13 (24.86-25.13)	C	C26746	CHALK.	24.3	1.63										
R71810	29.00-29.55 (29.00-29.55)	C	C26741	CHALK.	25.7	1.60										
R71810	42.00-42.47 (42.00-42.47)	C	C26742	CHALK.	24.6	1.62										
R71811	5.20-5.65 (5.20-5.65)	D	C26954	CHALK.	24.5	1.63										
R71811	9.00-9.45 (9.00-9.45)	D	C26951	CHALK.	24.0	1.64										
R71811	11.50-11.95 (11.50-11.95)	D	C27096	CHALK.	26.6	1.57										
R71811	15.60-15.76 (15.60-15.76)	C	C27103	CHALK.	24.0	1.64										
R71811	18.60-18.73 (18.60-18.73)	C	C27099	CHALK.	25.9	1.59	3.35									

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LABORATORY RESULTS - *Classification Summary*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3					UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71811	22.91-23.11 (22.91-23.11)	C	C27102	CHALK.			3.35										
R71811	26.11-26.26 (26.11-26.26)	C	C27101	CHALK.	23.6	1.65											
R71811	33.66-34.00 (33.66-34.00)	C	C27123	CHALK.	25.3	1.60											
R71811	37.74-37.98 (37.74-37.98)	C	C28110	CHALK.	26.1	1.58											
R71811	46.60-46.82 (46.60-46.82)	C	C28111	CHALK.	20.9	1.73											
R71811	50.05-50.50 (50.05-50.50)	C	C28114	CHALK.	18.8	1.79											
R71812	1.00 (1.00)	B	C26279	CHALK.			3.42										
R71812	1.00 (1.00)	D	C26058	CHALK.	25.7	1.59											
R71812	4.90-4.98 (4.90-4.98)	C	C26457	CHALK.	31.4	1.46											
R71812	10.28-10.53 (10.28-10.53)	C	C26455	CHALK.	25.5	1.60											
R71812	13.40-13.53 (13.40-13.53)	C	C26459	CHALK.			3.86										
R71812	14.50-14.77 (14.50-14.77)	C	C26461	CHALK.	25.2	1.61											

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample													Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71812	20.28-20.50 (20.28-20.50)	C	C26762	CHALK.	25.4	1.60										
R71812	25.00-25.35 (25.00-25.35)	C	C26758	CHALK.	27.3	1.55										
R71812	28.12-28.48 (28.12-28.48)	C	C26757	CHALK.	22.5	1.68										
R71812	36.43-36.64 (36.43-36.64)	C	C26759	CHALK.	22.7	1.67										
R71814	0.50-0.70 (0.50-0.70)	B	C25892	CHALK.	24.9	1.61										
R71814	1.00-1.20 (1.00-1.20)	B	C25890	CHALK.			3.46									
R71814	1.20-2.65 (1.20-2.65)	C	C26440	CHALK.	25.5	1.60										
R71814	5.99-6.07 (5.99-6.07)	C	C26434	CHALK.	24.4	1.63										
R71814	10.74-10.88 (10.74-10.88)	C	C26435	CHALK.	23.5	1.65										
R71814	19.52-19.81 (19.52-19.81)	C	C26468	CHALK.	26.7	1.57										
R71814	24.80-25.00 (24.80-25.00)	C	C26441	CHALK.	25.5	1.60										

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71814	29.37-29.55 (29.37-29.55)	C	C26462	CHALK.	24.6	1.62										
R71815	1.00-1.20 (1.00-1.20)	B	C25872	CHALK.	23.5	1.65										
R71815	6.82-6.88 (6.82-6.88)	C	C26473	CHALK.	24.9	1.62	3.85									
R71815	9.87-10.00 (9.87-10.00)	C	C26472	CHALK.			2.74									
R71815	14.51-14.62 (14.51-14.62)	C	C26469	CHALK.	25.9	1.59										
R71815	15.50-15.83 (15.50-15.83)	C	C26716	CHALK.	22.8	1.67										
R71815	17.65-17.92 (17.65-17.92)	D	C26066	CHALK.	20.4	1.74										
R71815	21.70-22.02 (21.70-22.02)	C	C26768	CHALK.	25.7	1.59										
R71815	28.88-29.23 (28.88-29.23)	C	C26764	CHALK.	20.6	1.74										
R71815	43.63-43.79 (43.63-43.79)	C	C26719	CHALK.	21.3	1.71										
R71816	1.00-1.20 (1.00-1.20)	B	C25876	CHALK.	21.8	1.70										

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3					UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71816	1.60-1.70 (1.60-1.70)	C	C26444	CHALK.			3.57										
R71816	3.40-3.50 (3.40-3.50)	C	C26443	CHALK.	25.0	1.61											
R71816	8.88-9.04 (8.88-9.04)	C	C26446	CHALK.			3.89										
R71816	12.34-12.52 (12.34-12.52)	C	C26447	CHALK.	26.6	1.57											
R71816	17.97-18.16 (17.97-18.16)	C	C26449	CHALK.	26.5	1.57											
R71816	24.34-24.67 (24.34-24.67)	C	C26476	CHALK.	25.5	1.60											
R71816	29.87-30.21 (29.87-30.21)	C	C26475	CHALK.	27.3	1.56											
R71816	33.52-33.72 (33.52-33.72)	C	C26730	CHALK.	21.2	1.72											
R71816	38.65-38.85 (38.65-38.85)	C	C26731	CHALK.	23.3	1.66											
R71818	0.50 (0.50)	B	C25873	CHALK.	25.5	1.60											
R71818	1.00 (1.00)	B	C25874	CHALK.			3.16										
R71818	3.10-3.20 (3.10-3.20)	C	C25863	CHALK.	19.8	1.76											

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71818	8.70-8.77 (8.70-8.77)	C	C25866	CHALK.	22.9	1.67										
R71818	12.50-12.61 (12.50-12.61)	C	C25868	CHALK.			3.45									
R71818	15.69-15.83 (15.69-15.83)	C	C25861	CHALK.	23.6	1.65										
R71818	20.26-20.43 (20.26-20.43)	C	C25865	CHALK.	25.5	1.60										
R71818	23.00-23.20 (23.00-23.20)	C	C25850	CHALK.	26.3	1.58										
R71818	30.51-30.87 (30.51-30.87)	C	C26336	CHALK.	20.5	1.74										
R71818	39.12-39.38 (39.12-39.38)	C	C26337	CHALK.	22.9	1.67										
R71819	1.00-1.20 (1.00-1.20)	B	C25881	CHALK.	25.1	1.61	3.24									
R71819	5.50-5.62 (5.50-5.62)	C	C25855	CHALK.	22.6	1.68										
R71819	13.90-14.25 (13.90-14.25)	C	C25856	CHALK.	25.4	1.60										
R71819	20.00-20.15 (20.00-20.15)	C	C25851	CHALK.	26.2	1.58										

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample													Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71819	22.10-22.43 (22.10-22.43)	C	C26454	CHALK.	25.9	1.59										
R71819	27.20-27.58 (27.20-27.58)	C	C26431	CHALK.	26.9	1.56										
R71819	30.17-30.47 (30.17-30.47)	C	C25943	CHALK.	24.9	1.62										
R71819	35.08-35.49 (35.08-35.49)	C	C26432	CHALK.	23.8	1.64										
R71820	0.40-0.60 (0.40-0.60)	B	C25893	CHALK.	24.6	1.62										
R71820	1.00-1.20 (1.00-1.20)	B	C25878	CHALK.			3.17									
R71820	6.62-6.80 (6.62-6.80)	C	C25898	CHALK.	26.5	1.57										
R71820	8.10-8.31 (8.10-8.31)	C	C25894	CHALK.			3.10									
R71820	9.66-9.83 (9.66-9.83)	C	C25895	CHALK.	24.0	1.64										
R71820	16.17-16.38 (16.17-16.38)	C	C25903	CHALK.	23.1	1.66										
R71820	20.88-21.22 (20.88-21.22)	C	C25936	CHALK.	25.9	1.59										

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LABORATORY RESULTS - Classification Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
R71820	26.25-26.48 (26.25-26.48)	C	C25941	CHALK.	25.0	1.61										
R71820	30.55-30.83 (30.55-30.83)	C	C25935	CHALK.	25.3	1.60										
R71820	34.85-35.12 (34.85-35.12)	C	C26801	CHALK.	24.7	1.62										
STP70101	3.00 (3.00)	B	C27581	CHALK.	21.7	1.70	3.15									
STP70102	1.00 (1.00)	B	C27573	CHALK.	25.7	1.59	3.55									
STP70801	2.10 (2.10)	B	C26884	CHALK.	18.2	1.81										
STP70802	2.00 (2.00)	B	C26840	CHALK.	20.1	1.75										
STP71101	1.60 (1.60)	D	C26514	CHALK.	22.6	1.68										
STP71102	3.00 (3.00)	B	C26872	CHALK.	20.6	1.74										
STP71401	1.00 (1.00)	B	C26866	CHALK.			3.10									
STP71401	2.00 (2.00)	B	C26855	CHALK.	25.2	1.61										
STP71402	0.60 (0.60)	B	C27557	CHALK.	22.1	1.69										
STP71402	3.00 (3.00)	B	C27561	CHALK, recovered as slightly sandy silty GRAVEL with a medium cobble content.			2.85									
STP71403	1.10 (1.10)	B	C26862	CHALK.	22.4	1.68										
STP71403	2.00 (2.00)	B	C26888	CHALK, recovered as sandy very silty GRAVEL.			2.78									
STP71404	1.20 (1.20)	B	C27553	CHALK.			2.50									
STP71404	2.00 (2.00)	B	C27542	CHALK.	26.5	1.57										

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Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample													Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
STP71405	0.50 (0.50)	B	C26867	CHALK, composed of sandy very silty GRAVEL and a low cobble content.	21.8	1.70										
STP71405	1.20 (1.20)	B	C26871	CHALK.			3.33									
STP71405	3.00 (3.00)	B	C26877	CHALK.	26.0	1.59										
STP71406	2.00 (2.00)	B	C26856	CHALK.	25.2	1.61										
STP71406	3.50 (3.50)	B	C26841	CHALK, recovered as sandy silty GRAVEL with a high cobble content.			3.16									
STP71602	2.00 (2.00)	B	C27037	CHALK.	26.5	1.57										
STP71602	3.00 (3.00)	B	C27034	CHALK, recovered as sandy silty GRAVEL with a medium cobble content.			2.65									
STP71603	1.20 (1.20)	B	C27798	CHALK.	20.3	1.74										
STP71603	2.00 (2.00)	B	C27788	CHALK.			3.25									
STP71604	1.00 (1.00)	B	C27783	CHALK.	25.9	1.59	3.37									
STP72701	2.50 (2.50)	B	C27057	Light brown very sandy very silty GRAVEL with a low cobble content.	9.5	2.15										
STP72702	2.50 (2.50)	B	C27038	CHALK, composed of white, locally cream, sandy very silty GRAVEL.	15.7	1.89										
STP72703	2.00 (2.00)	D	C27175	CHALK, recovered as sandy very silty GRAVEL.	22.2	1.69										
STP72704	1.00 (1.00)	B	C27060	CHALK.	18.4	1.80										
STP72705	2.00 (2.00)	B	C27058	CHALK.	24.4	1.63										
WS71501	2.00-2.90 (2.00-2.90)	B	C27802	CHALK.	24.4	1.63										
WS71502	3.00-3.90 (3.00-3.90)	B	C27796	CHALK.	23.6	1.65	3.40									

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certificate

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LABORATORY RESULTS - *Classification Summary*

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample														Unconfined Compressive Strength Test			
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Sat. w %	γ_d Mg/m^3	CCV	Linear Shrink (>425) %	γ_d Max/ Min Mg/m^3				UCS kPa	w %	γ_b Mg/m^3	γ_d Mg/m^3
WS71503	3.00-3.95 (3.00-3.95)	B	C27786	CHALK.	24.5	1.62										
WS71504	1.20-1.90 (1.20-1.90)	B	C27801	CHALK.	24.9	1.62	2.75									
WS71504	3.90-4.60 (3.90-4.60)	B	C27791	CHALK.	18.6	1.80										
WS71505	1.85-2.00 (1.85-2.00)	D	C27662	CHALK.	25.0	1.61										
WS71505	4.00-4.80 (4.00-4.80)	B	C27808	CHALK.	26.4	1.58										
WS71505	5.00-5.80 (5.00-5.80)	B	C27795	CHALK.			2.49									

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certificate

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LABORATORY RESULTS - Particle Size Distribution

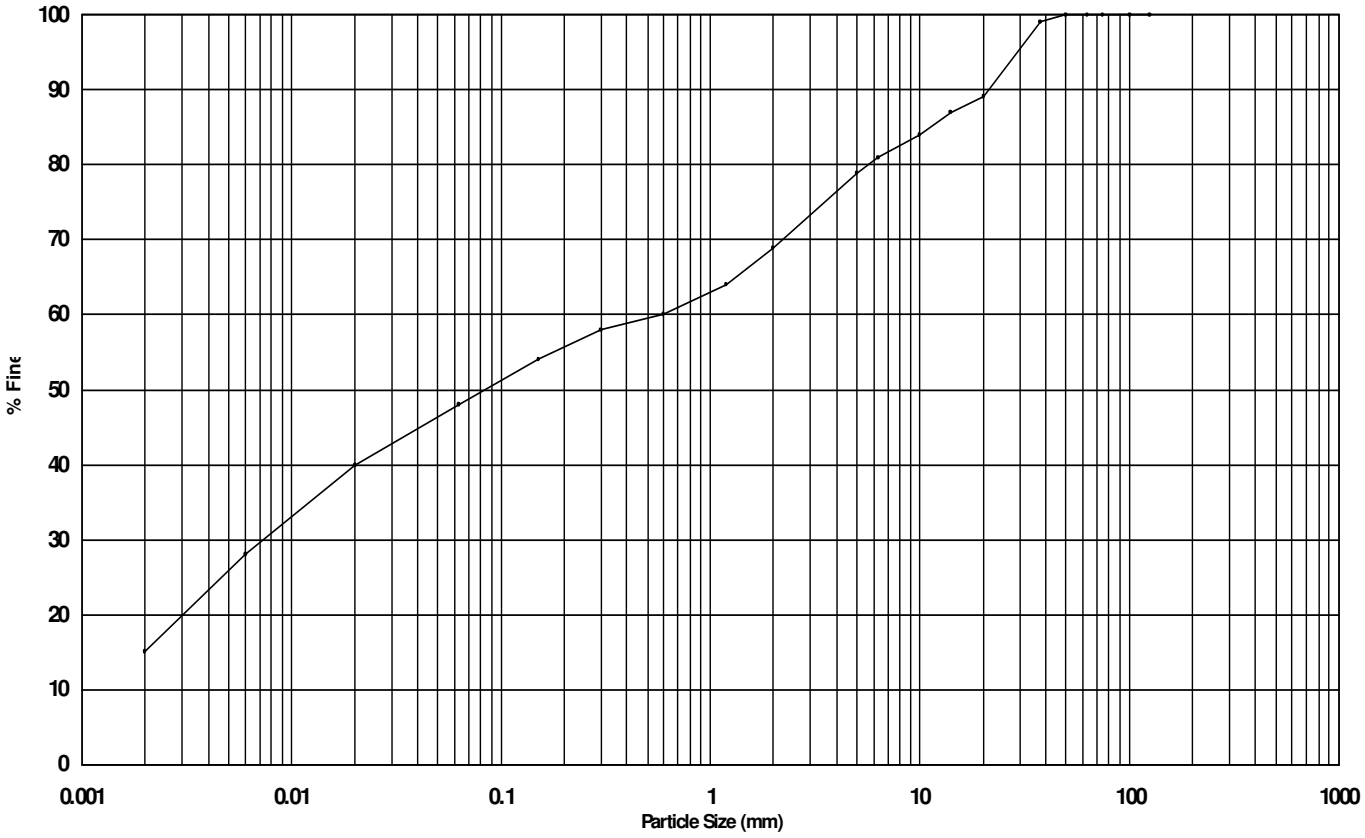
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole R71211
Sample Depth 0.30-0.70m
Sample Type B
Sample Ref C27047

Sample Description

Light brown very sandy very silty GRAVEL.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	15
SILT	33
SAND	21
GRAVEL	31
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	99
20 mm	89
14 mm	87
10 mm	84
6.3 mm	81
5 mm	79
2 mm	69
1.18 mm	64
600 µm	60
300 µm	58
150 µm	54

Size	% Finer
63 µm	48
20 µm	40
6 µm	28
2 µm	15

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

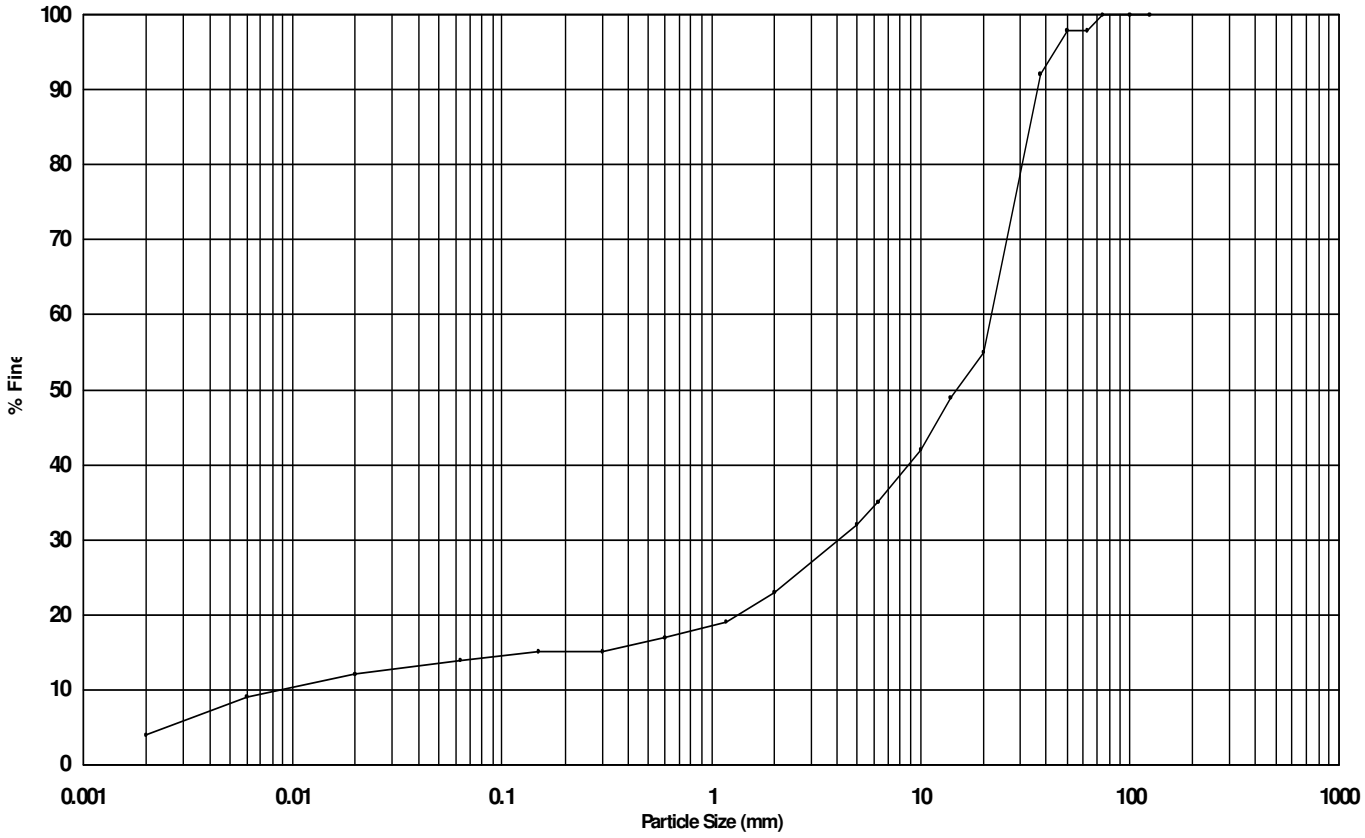
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP70101
Sample Depth	0.60m
Sample Type	B
Sample Ref	C27571

Sample Description

CHALK, recovered as sandy silty GRAVEL with a low cobble content.



Classification												
	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	4
SILT	10
SAND	9
GRAVEL	75
COBBLES	2
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	98
50 mm	98
37.5 mm	92
20 mm	55
14 mm	49
10 mm	42
6.3 mm	35
5 mm	32
2 mm	23
1.18 mm	19
600 µm	17
300 µm	15
150 µm	15

Size	% Finer
63 µm	14
20 µm	12
6 µm	9
2 µm	4

Uniformity Coefficient
2400.26

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

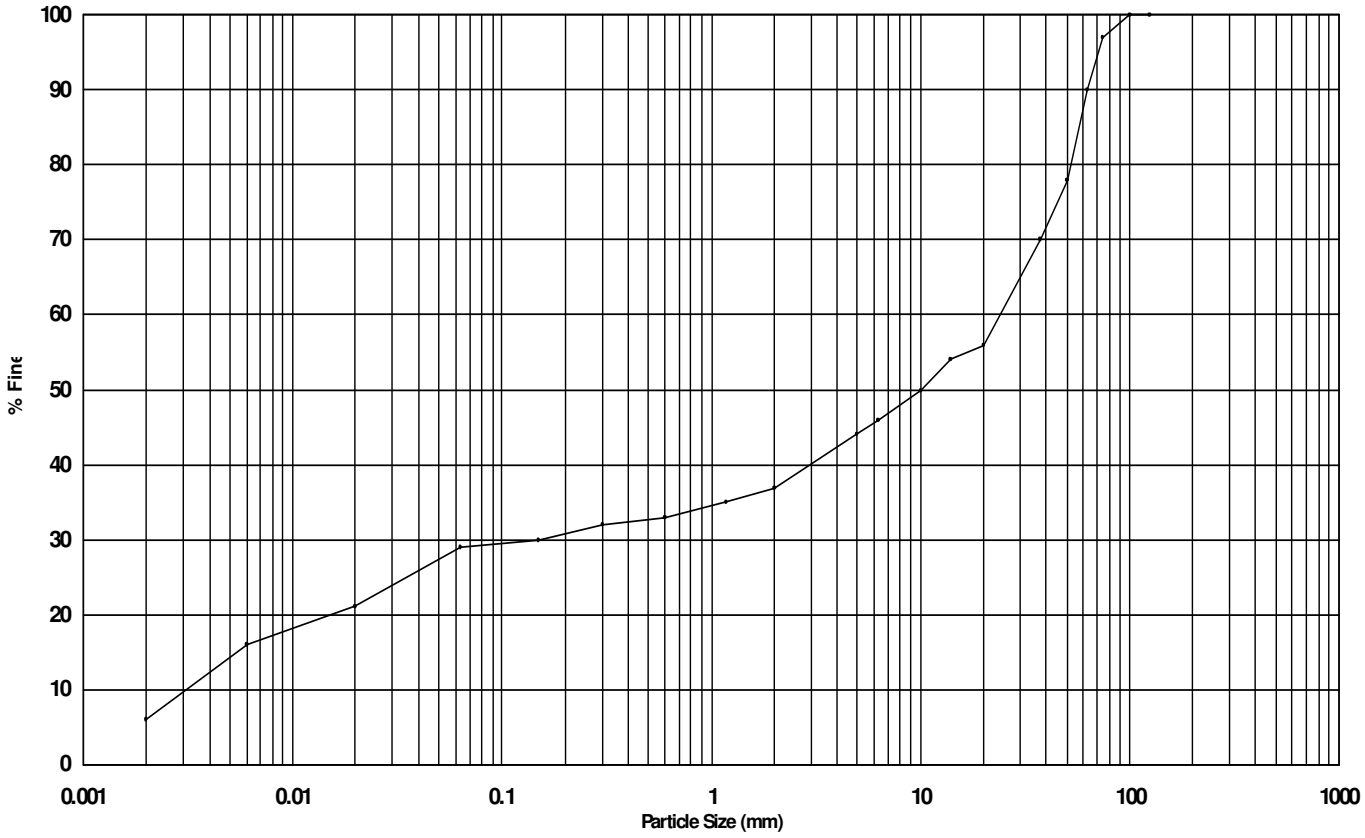
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP70102
Sample Depth 2.00m
Sample Type B
Sample Ref C27576

Sample Description

CHALK, recovered as sandy very silty GRAVEL with a medium cobble content.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	6
SILT	23
SAND	8
GRAVEL	53
COBBLES	10
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	97
63 mm	90
50 mm	78
37.5 mm	70
20 mm	56
14 mm	54
10 mm	50
6.3 mm	46
5 mm	44
2 mm	37
1.18 mm	35
600 µm	33
300 µm	32
150 µm	30

Size	% Finer
63 µm	29
20 µm	21
6 µm	16
2 µm	6

Uniformity Coefficient
7519.31

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

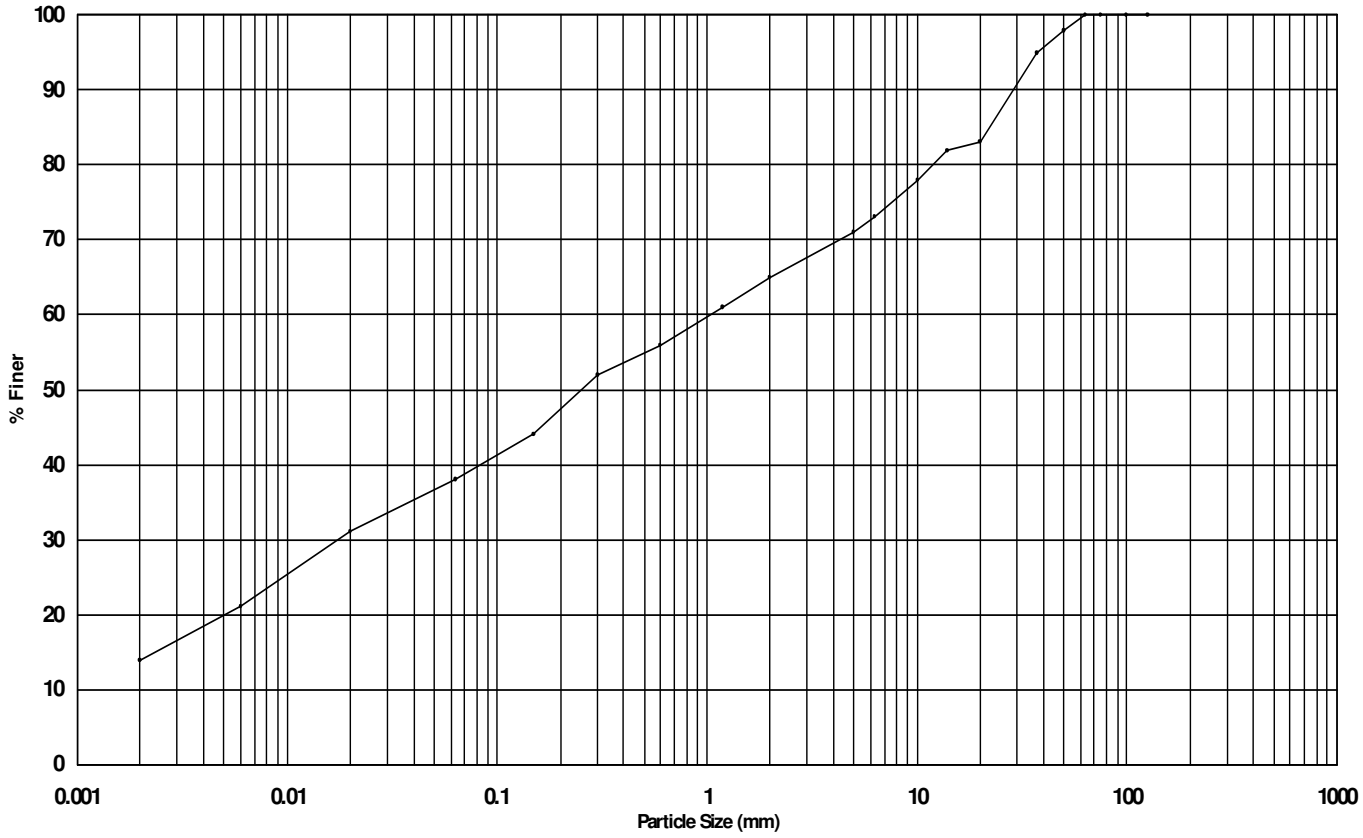
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP70801
Sample Depth	1.00m
Sample Type	B
Sample Ref	C26879

Sample Description

MADE GROUND: Reddish brown sightly sandy slightly gravelly clay.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	14
SILT	24
SAND	27
GRAVEL	35
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	98
37.5 mm	95
20 mm	83
14 mm	82
10 mm	78
6.3 mm	73
5 mm	71
2 mm	65
1.18 mm	61
600 µm	56
300 µm	52
150 µm	44

Size	% Finer
63 µm	38
20 µm	31
6 µm	21
2 µm	14

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

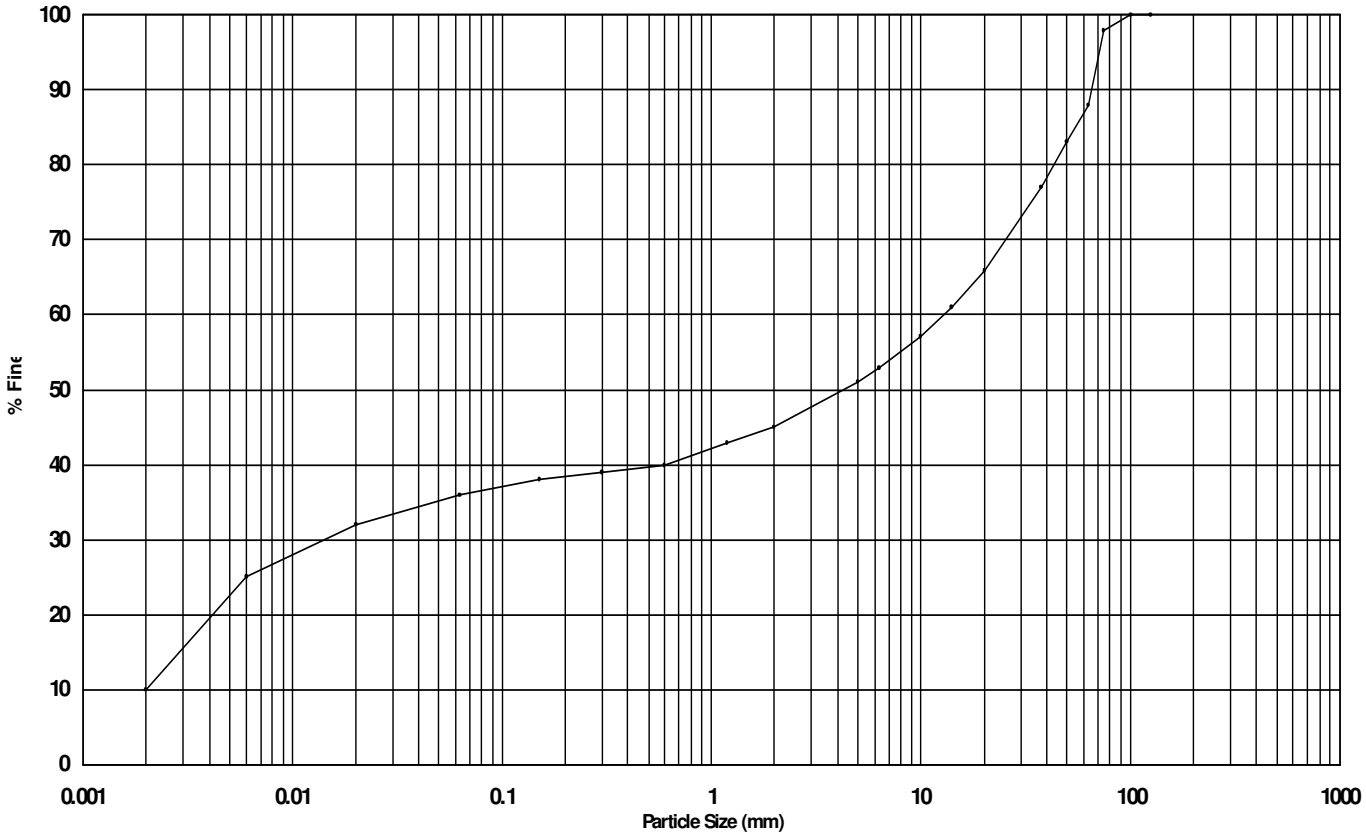
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP70802
Sample Depth	1.00m
Sample Type	B
Sample Ref	C26838

Sample Description

CHALK, recovered as sandy very silty GRAVEL with a medium cobble content.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	10
SILT	26
SAND	9
GRAVEL	43
COBBLES	12
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	98
63 mm	88
50 mm	83
37.5 mm	77
20 mm	66
14 mm	61
10 mm	57
6.3 mm	53
5 mm	51
2 mm	45
1.18 mm	43
600 µm	40
300 µm	39
150 µm	38

Size	% Finer
63 µm	36
20 µm	32
6 µm	25
2 µm	10

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

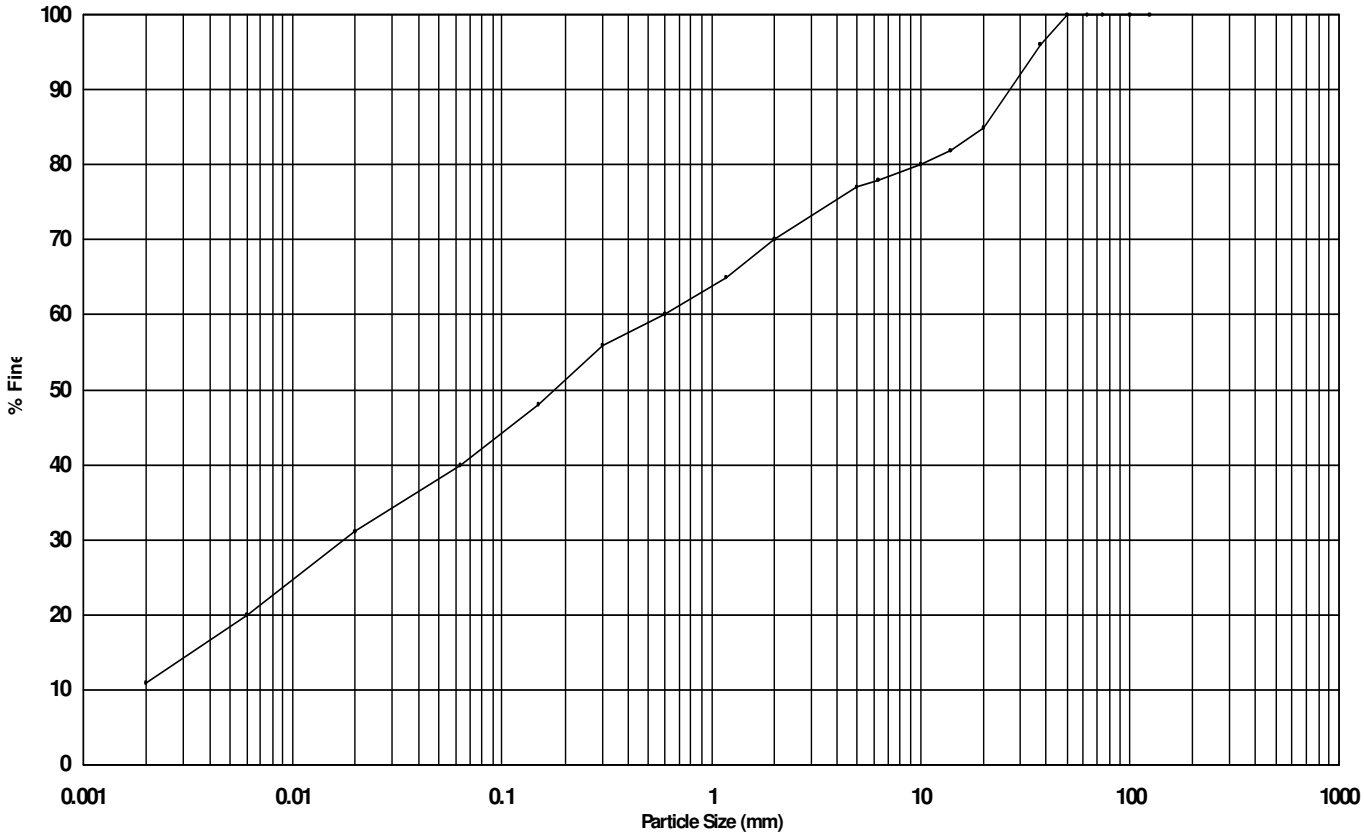
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71101
Sample Depth	1.00-1.20m
Sample Type	B
Sample Ref	C26831

Sample Description

Light yellowish brown very silty SAND and GRAVEL.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	11
SILT	29
SAND	30
GRAVEL	30
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	96
20 mm	85
14 mm	82
10 mm	80
6.3 mm	78
5 mm	77
2 mm	70
1.18 mm	65
600 µm	60
300 µm	56
150 µm	48

Size	% Finer
63 µm	40
20 µm	31
6 µm	20
2 µm	11

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	1.26
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

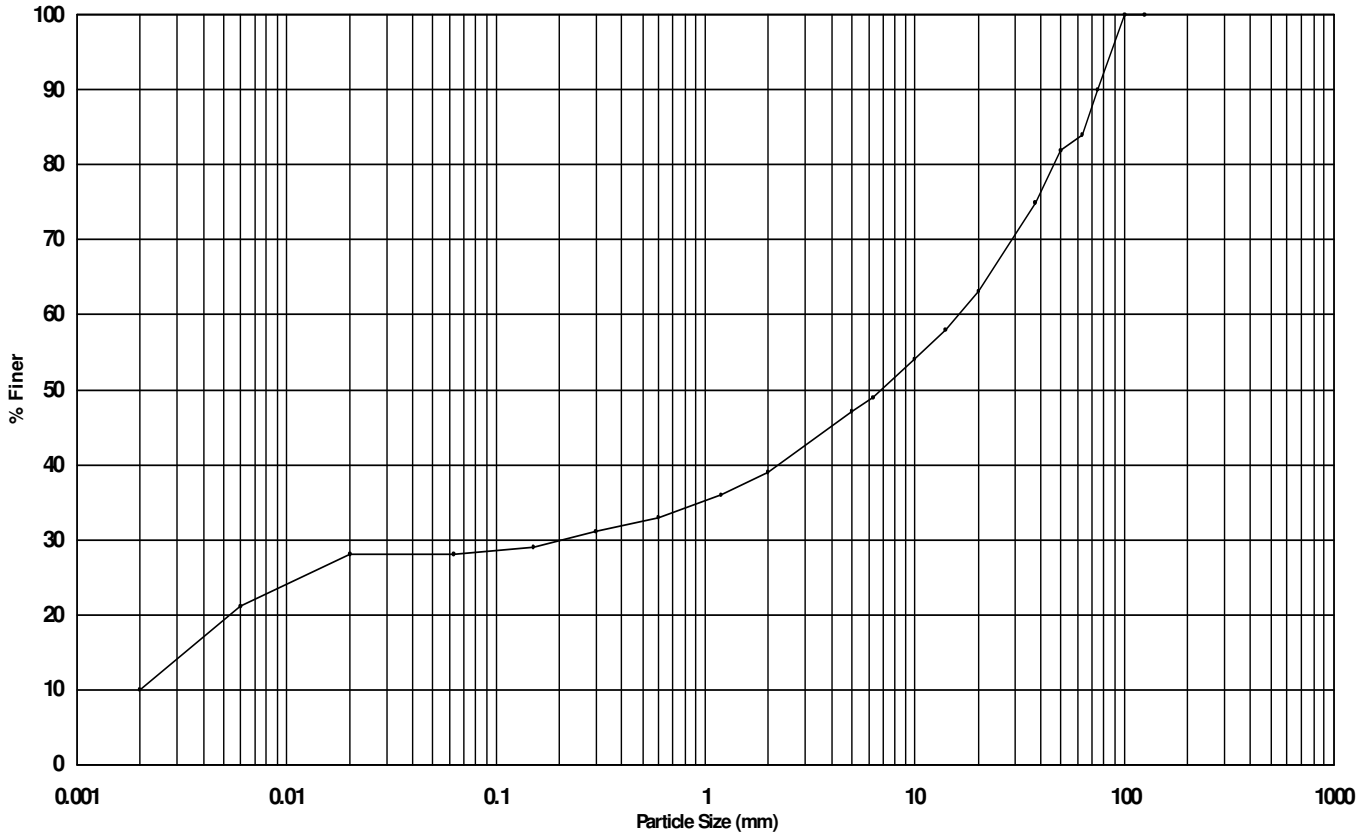
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71102
Sample Depth	2.00m
Sample Type	B
Sample Ref	C26874

Sample Description

CHALK, recovered as sandy silty GRAVEL with a medium cobble content.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	10
SILT	18
SAND	11
GRAVEL	45
COBBLES	16
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	90
63 mm	84
50 mm	82
37.5 mm	75
20 mm	63
14 mm	58
10 mm	54
6.3 mm	49
5 mm	47
2 mm	39
1.18 mm	36
600 µm	33
300 µm	31
150 µm	29

Size	% Finer
63 µm	28
20 µm	28
6 µm	21
2 µm	10

Uniformity Coefficient
7771.29

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

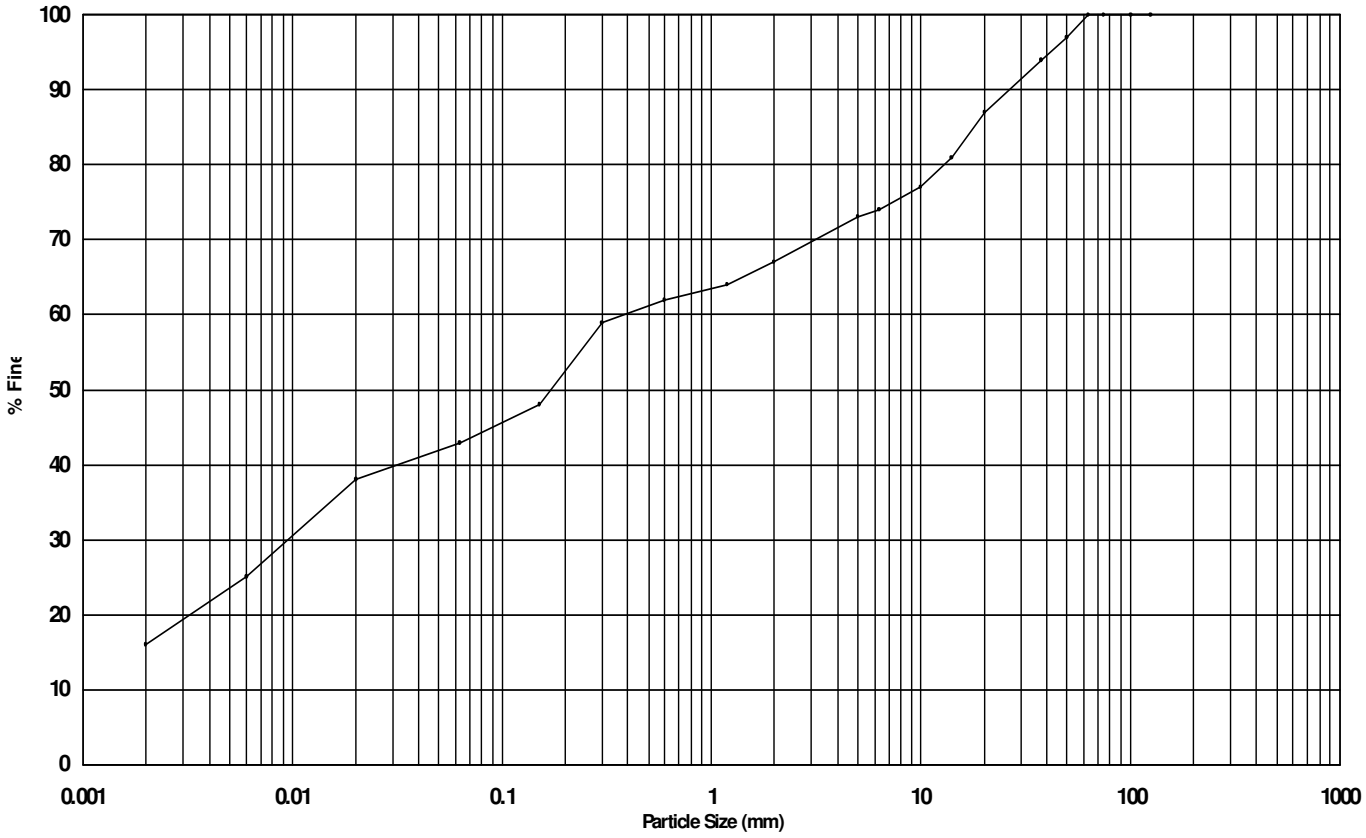
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71401
Sample Depth	0.50m
Sample Type	B
Sample Ref	C26889

Sample Description

Light brown slightly sandy slightly gravelly CLAY.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	16
SILT	27
SAND	24
GRAVEL	33
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	97
37.5 mm	94
20 mm	87
14 mm	81
10 mm	77
6.3 mm	74
5 mm	73
2 mm	67
1.18 mm	64
600 µm	62
300 µm	59
150 µm	48

Size	% Finer
63 µm	43
20 µm	38
6 µm	25
2 µm	16

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

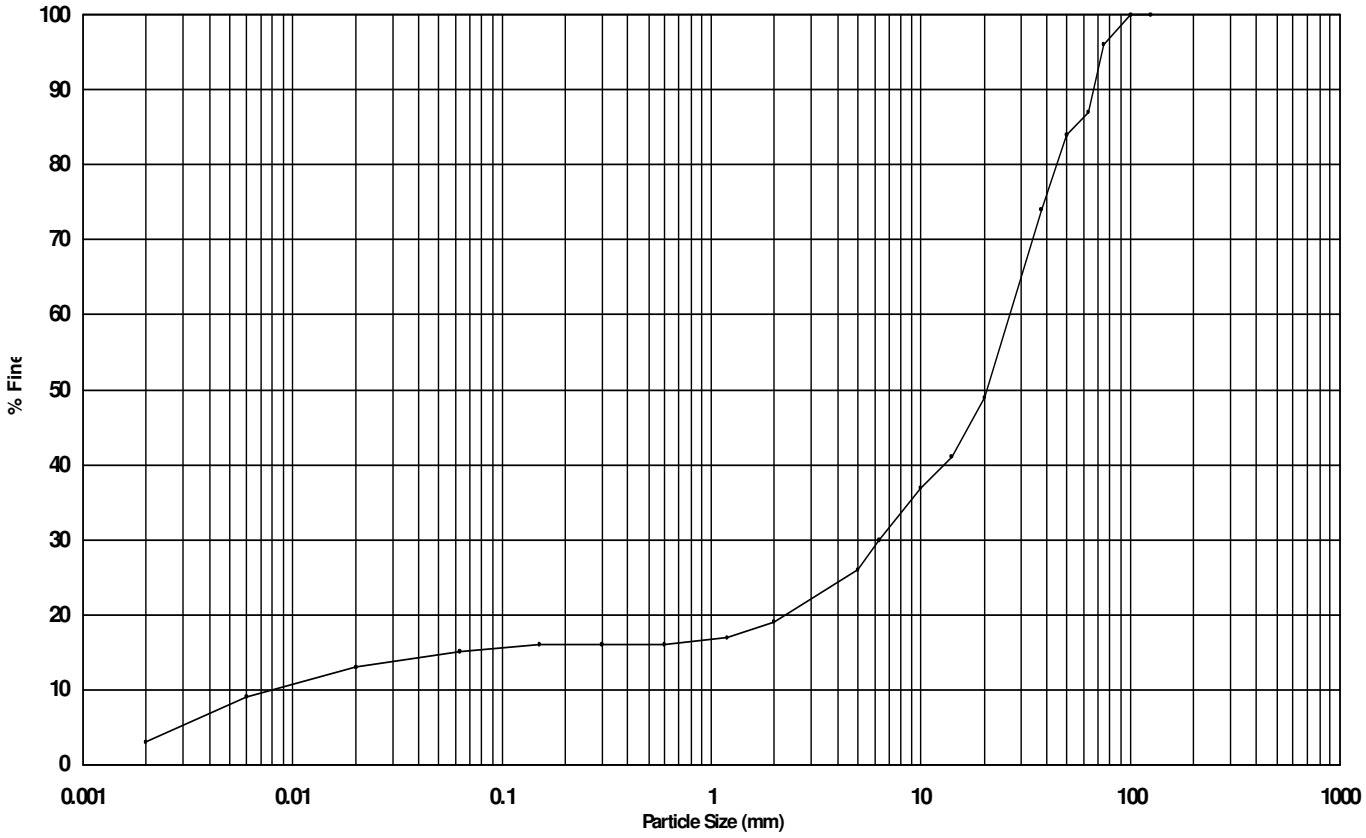
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71402
Sample Depth 3.00m
Sample Type B
Sample Ref C27561

Sample Description

CHALK, recovered as slightly sandy silty GRAVEL with a medium cobble content.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	3
SILT	12
SAND	4
GRAVEL	68
COBBLES	13
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	96
63 mm	87
50 mm	84
37.5 mm	74
20 mm	49
14 mm	41
10 mm	37
6.3 mm	30
5 mm	26
2 mm	19
1.18 mm	17
600 µm	16
300 µm	16
150 µm	16

Size	% Finer
63 µm	15
20 µm	13
6 µm	9
2 µm	3

Uniformity Coefficient
3512.20

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

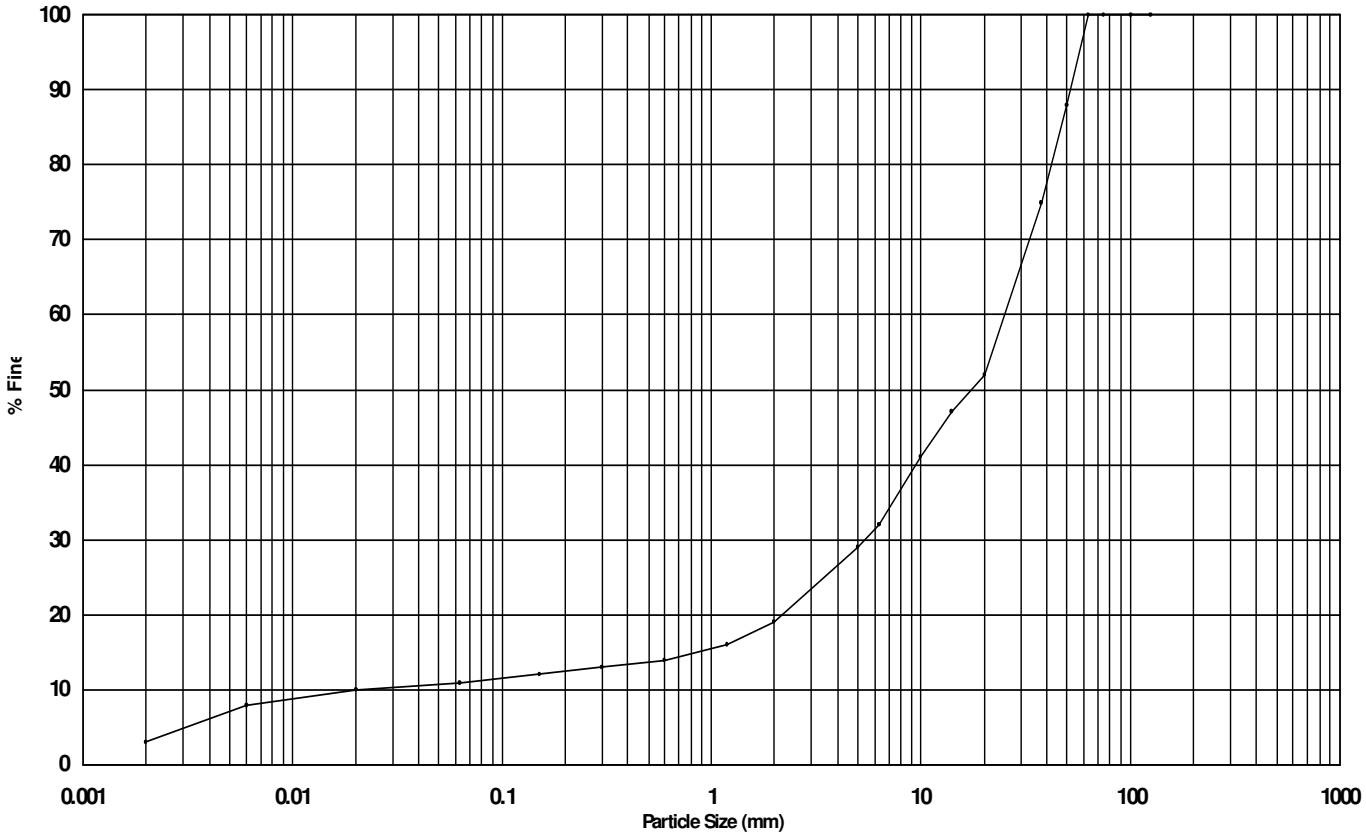
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71403
Sample Depth	2.00m
Sample Type	B
Sample Ref	C26888

Sample Description

CHALK, recovered as sandy very silty GRAVEL.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	3
SILT	8
SAND	8
GRAVEL	81
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	88
37.5 mm	75
20 mm	52
14 mm	47
10 mm	41
6.3 mm	32
5 mm	29
2 mm	19
1.18 mm	16
600 µm	14
300 µm	13
150 µm	12

Size	% Finer
63 µm	11
20 µm	10
6 µm	8
2 µm	3

Uniformity Coefficient
1189.15

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

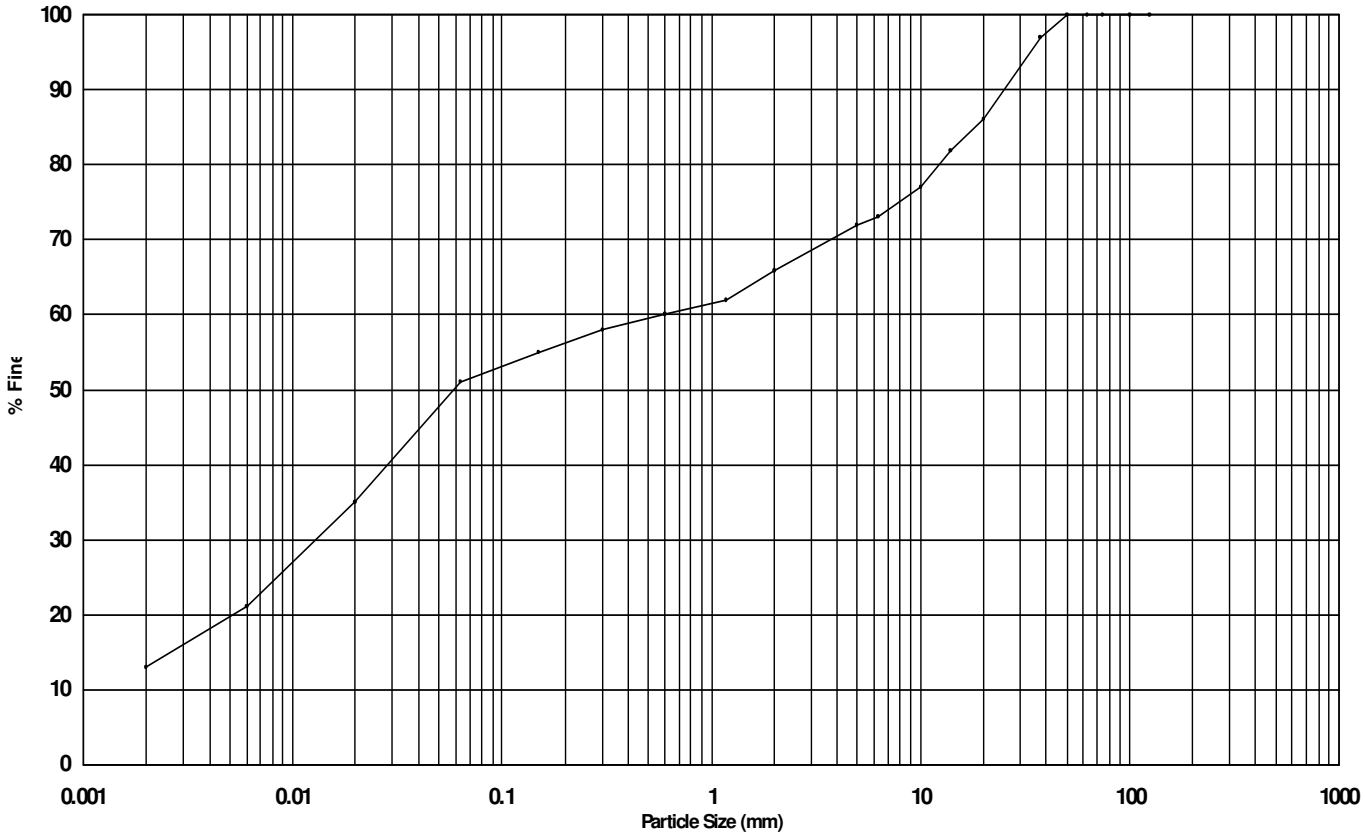
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71404
Sample Depth 0.50m
Sample Type B
Sample Ref C27535

Sample Description

Yellowish brown slightly sandy slightly gravelly CLAY.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	13
SILT	38
SAND	15
GRAVEL	34
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	97
20 mm	86
14 mm	82
10 mm	77
6.3 mm	73
5 mm	72
2 mm	66
1.18 mm	62
600 µm	60
300 µm	58
150 µm	55

Size	% Finer
63 µm	51
20 µm	35
6 µm	21
2 µm	13

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

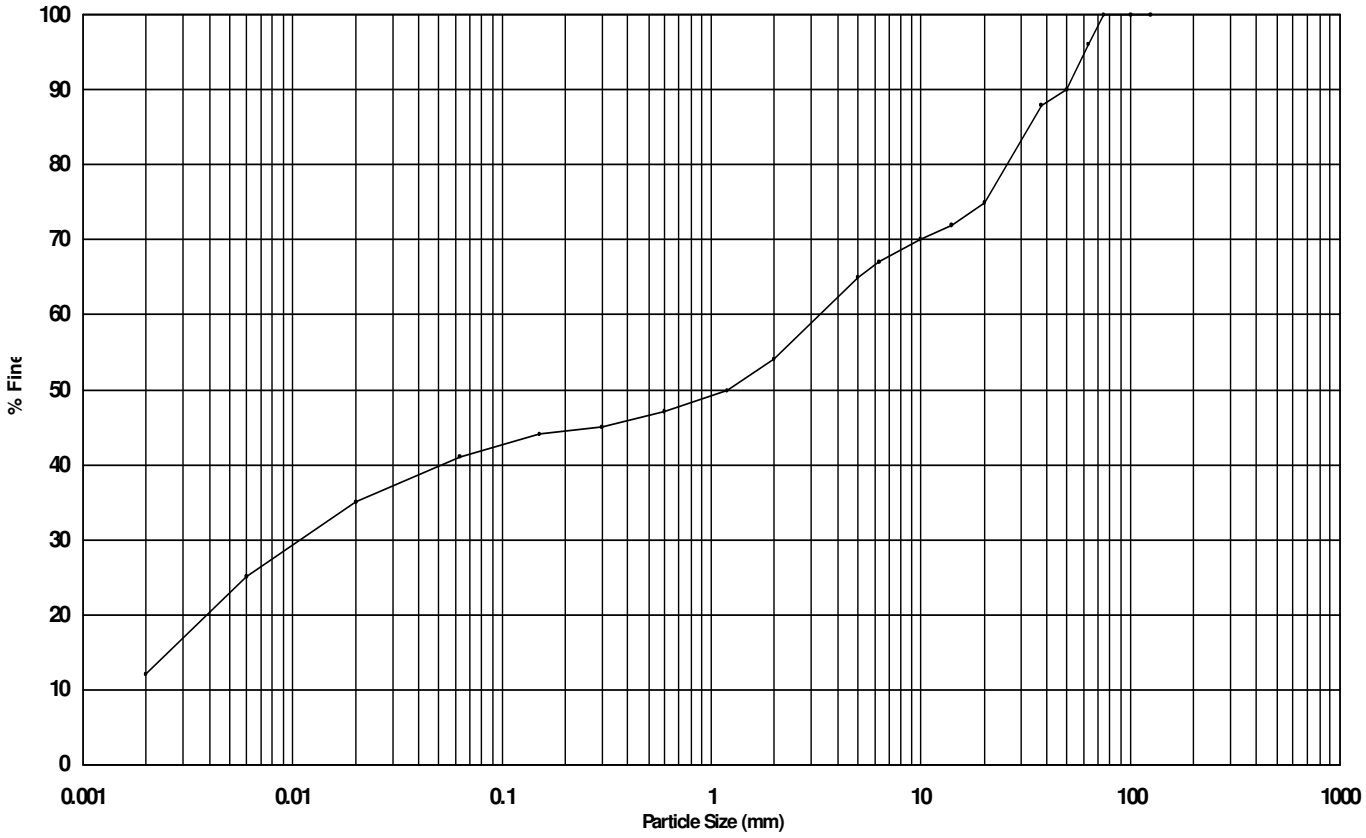
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71405
Sample Depth	0.50m
Sample Type	B
Sample Ref	C26867

Sample Description

CHALK, composed of sandy very silty GRAVEL and a low cobble content.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	12
SILT	29
SAND	13
GRAVEL	42
COBBLES	4
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	96
50 mm	90
37.5 mm	88
20 mm	75
14 mm	72
10 mm	70
6.3 mm	67
5 mm	65
2 mm	54
1.18 mm	50
600 µm	47
300 µm	45
150 µm	44

Size	% Finer
63 µm	41
20 µm	35
6 µm	25
2 µm	12

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

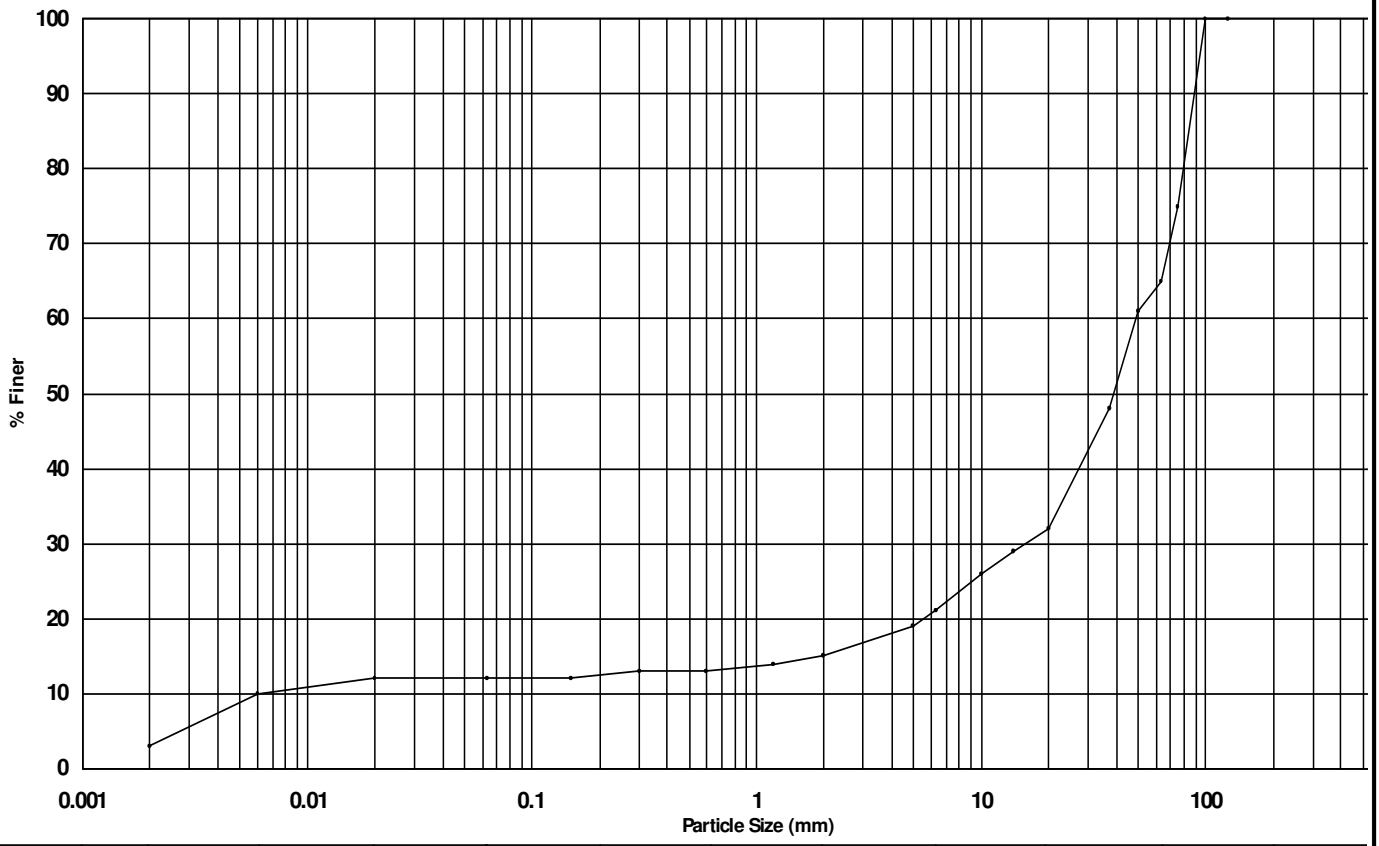
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71406
Sample Depth 3.50m
Sample Type B
Sample Ref C26841

Sample Description

CHALK, recovered as sandy silty GRAVEL with a high cobble content.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulde
		SILT			SAND			Gravel				

Classification	% of each
CLAY	3
SILT	9
SAND	3
GRAVEL	50
COBBLES	35
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	75
63 mm	65
50 mm	61
37.5 mm	48
20 mm	32
14 mm	29
10 mm	26
6.3 mm	21
5 mm	19
2 mm	15
1.18 mm	14
600 µm	13
300 µm	13
150 µm	12

Size	% Finer
63 µm	12
20 µm	12
6 µm	10
2 µm	3

Uniformity Coefficient
6931.95

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

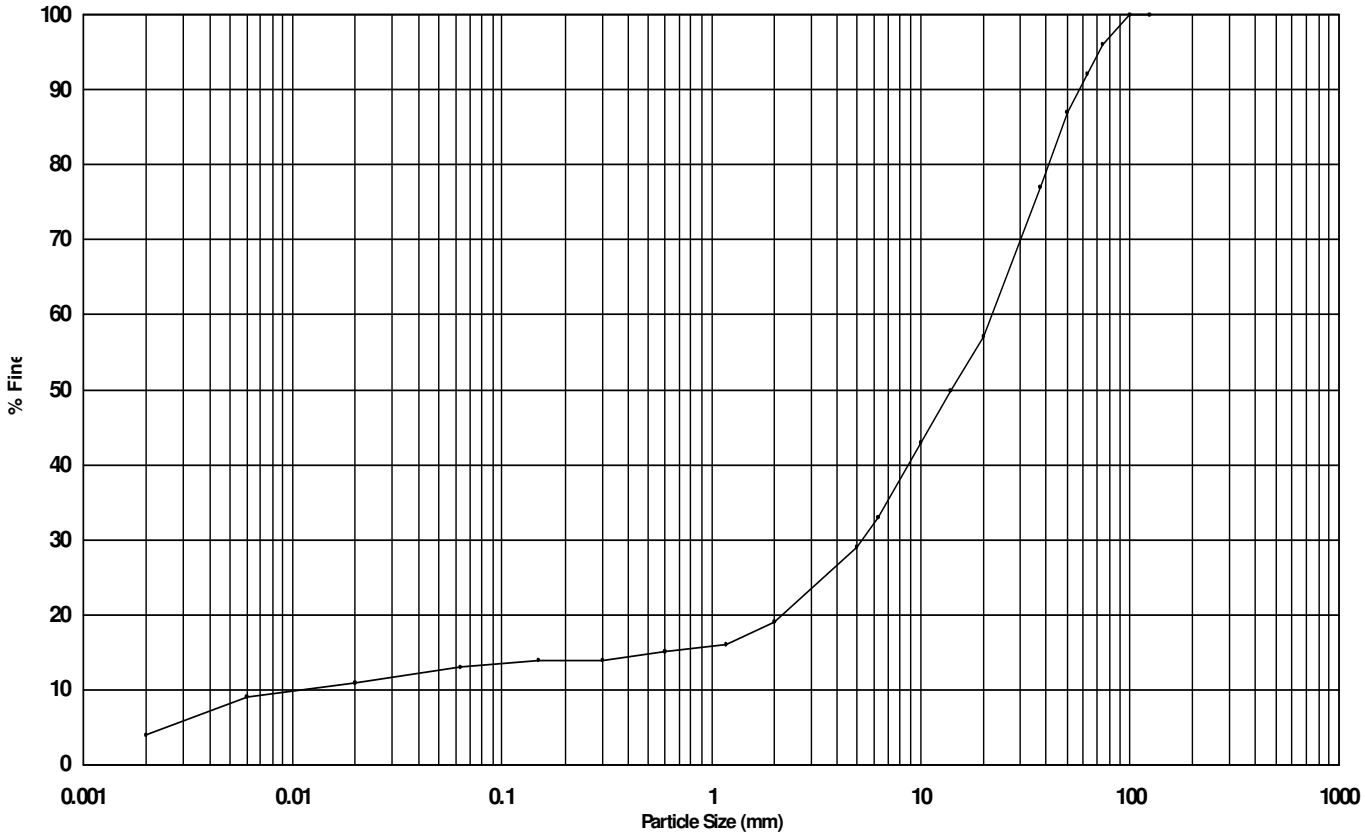
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71602
Sample Depth 3.00m
Sample Type B
Sample Ref C27034

Sample Description

CHALK, recovered as sandy silty GRAVEL with a medium cobble content.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	4
SILT	9
SAND	6
GRAVEL	73
COBBLES	8
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	96
63 mm	92
50 mm	87
37.5 mm	77
20 mm	57
14 mm	50
10 mm	43
6.3 mm	33
5 mm	29
2 mm	19
1.18 mm	16
600 µm	15
300 µm	14
150 µm	14

Size	% Finer
63 µm	13
20 µm	11
6 µm	9
2 µm	4

Uniformity Coefficient
2266.05

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

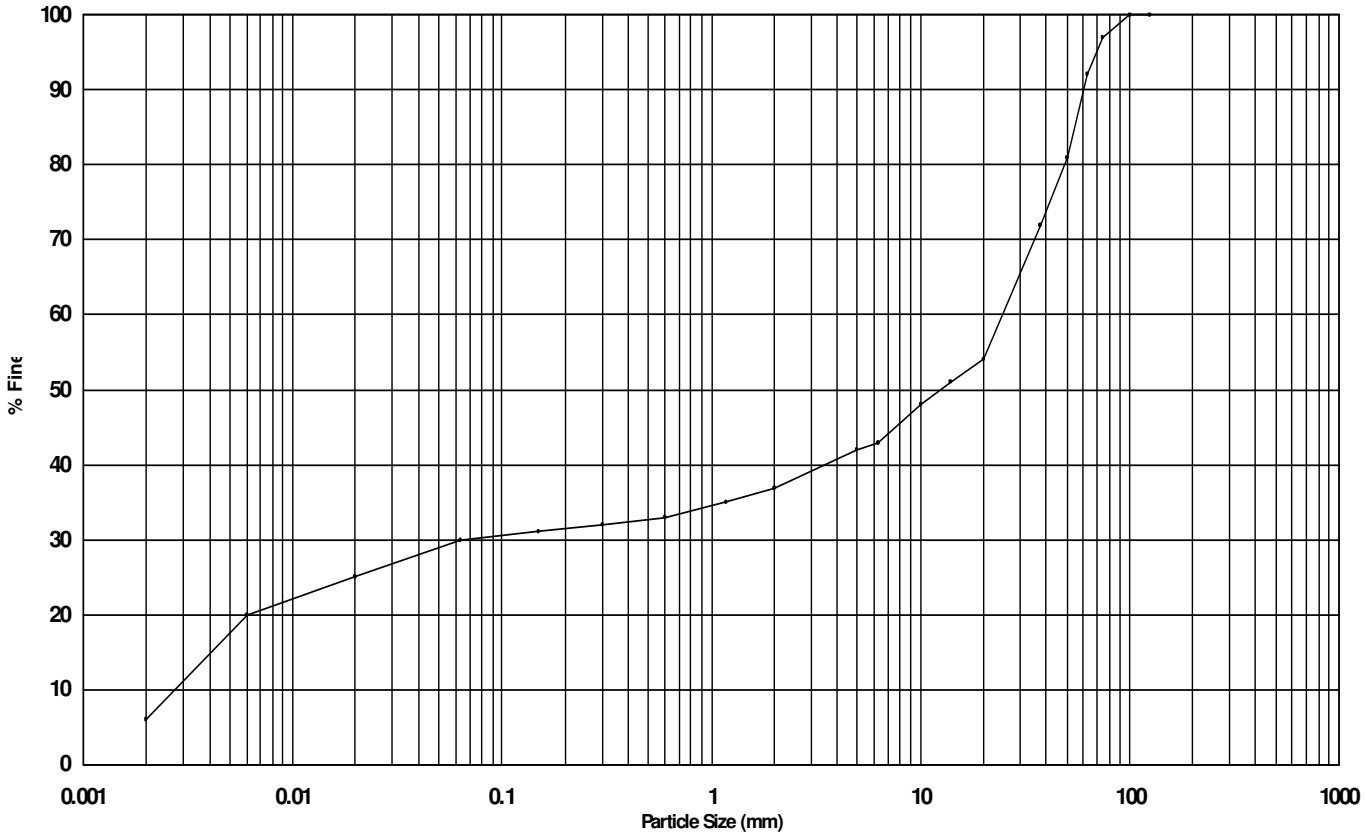
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71604
Sample Depth 2.00m
Sample Type B
Sample Ref C27790

Sample Description

CHALK, recovered as sandy very silty GRAVEL with a medium cobble content.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	6
SILT	24
SAND	7
GRAVEL	55
COBBLES	8
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	97
63 mm	92
50 mm	81
37.5 mm	72
20 mm	54
14 mm	51
10 mm	48
6.3 mm	43
5 mm	42
2 mm	37
1.18 mm	35
600 µm	33
300 µm	32
150 µm	31

Size	% Finer
63 µm	30
20 µm	25
6 µm	20
2 µm	6

Uniformity Coefficient
8627.64

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

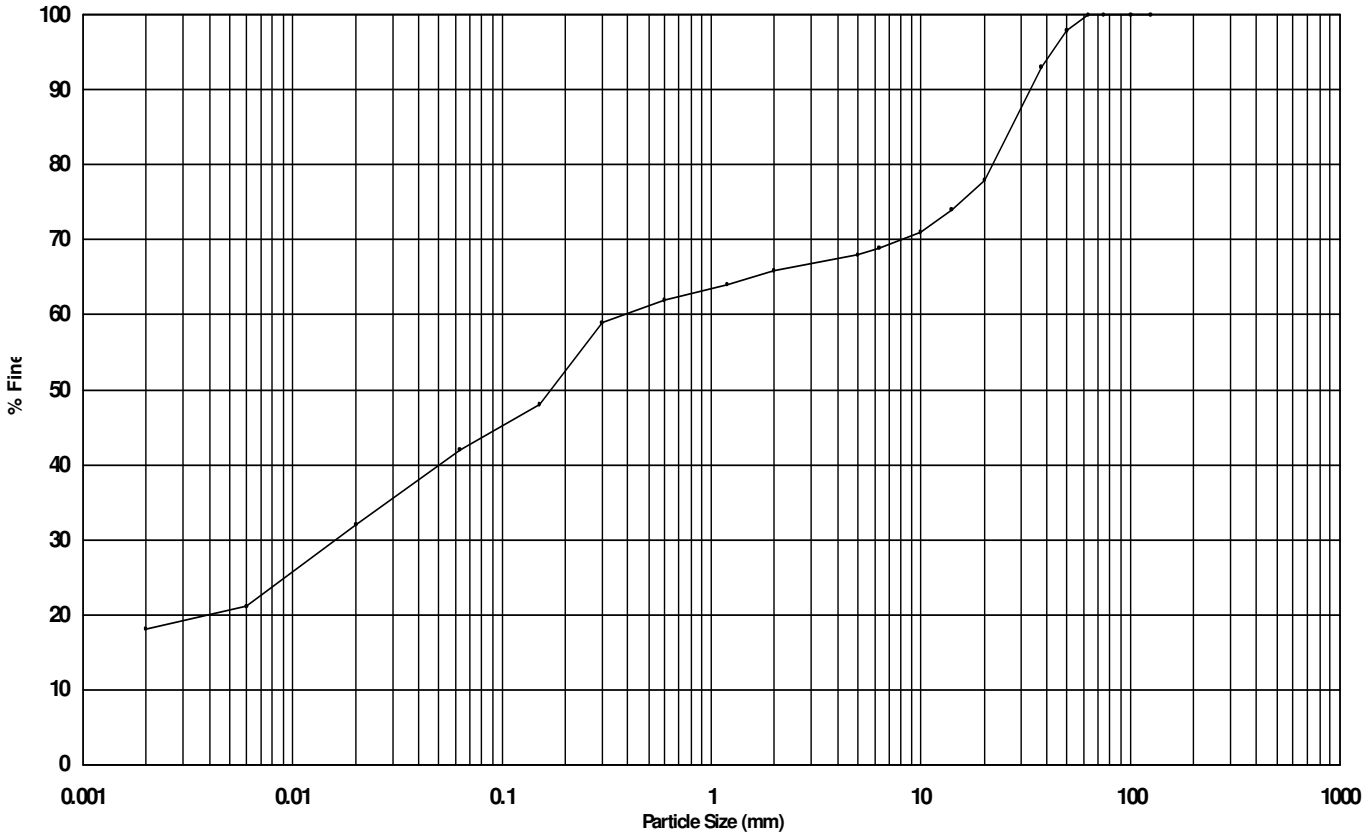
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP72701
Sample Depth 0.50m
Sample Type B
Sample Ref C27042

Sample Description

Orangish brown slightly sandy slightly gravelly CLAY.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	18
SILT	24
SAND	24
GRAVEL	34
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	98
37.5 mm	93
20 mm	78
14 mm	74
10 mm	71
6.3 mm	69
5 mm	68
2 mm	66
1.18 mm	64
600 µm	62
300 µm	59
150 µm	48

Size	% Finer
63 µm	42
20 µm	32
6 µm	21
2 µm	18

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.14
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

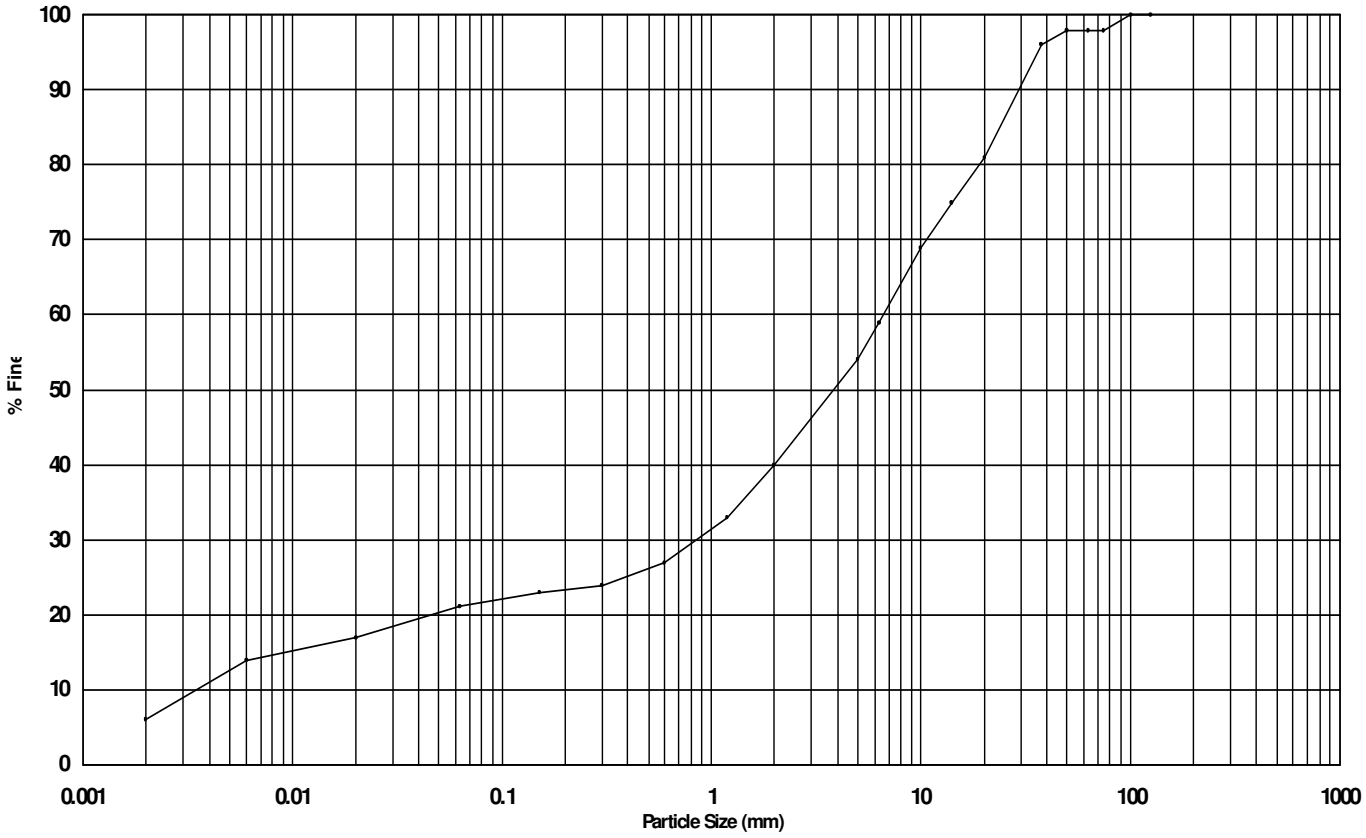
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP72701
Sample Depth 2.50m
Sample Type B
Sample Ref C27057

Sample Description

Light brown very sandy very silty GRAVEL with a low cobble content.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	6
SILT	15
SAND	19
GRAVEL	58
COBBLES	2
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	98
63 mm	98
50 mm	98
37.5 mm	96
20 mm	81
14 mm	75
10 mm	69
6.3 mm	59
5 mm	54
2 mm	40
1.18 mm	33
600 µm	27
300 µm	24
150 µm	23

Size	% Finer
63 µm	21
20 µm	17
6 µm	14
2 µm	6

Uniformity Coefficient
1809.72

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

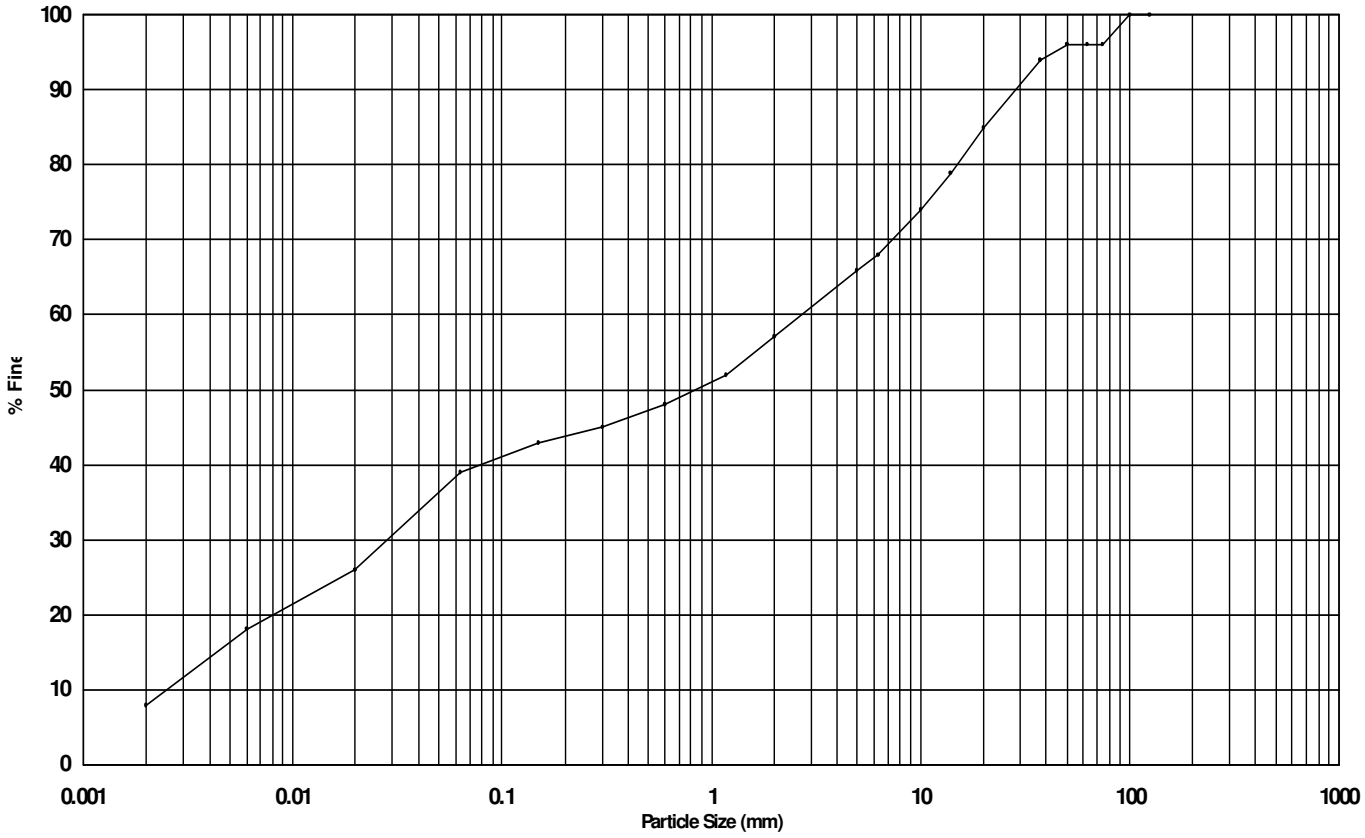
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP72702
Sample Depth 1.00m
Sample Type B
Sample Ref C27046

Sample Description

Light yellowish brown slightly sandy gravelly CLAY with a low cobble content.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	8
SILT	31
SAND	18
GRAVEL	39
COBBLES	4
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	96
63 mm	96
50 mm	96
37.5 mm	94
20 mm	85
14 mm	79
10 mm	74
6.3 mm	68
5 mm	66
2 mm	57
1.18 mm	52
600 µm	48
300 µm	45
150 µm	43

Size	% Finer
63 µm	39
20 µm	26
6 µm	18
2 µm	8

Uniformity Coefficient
1099.19

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

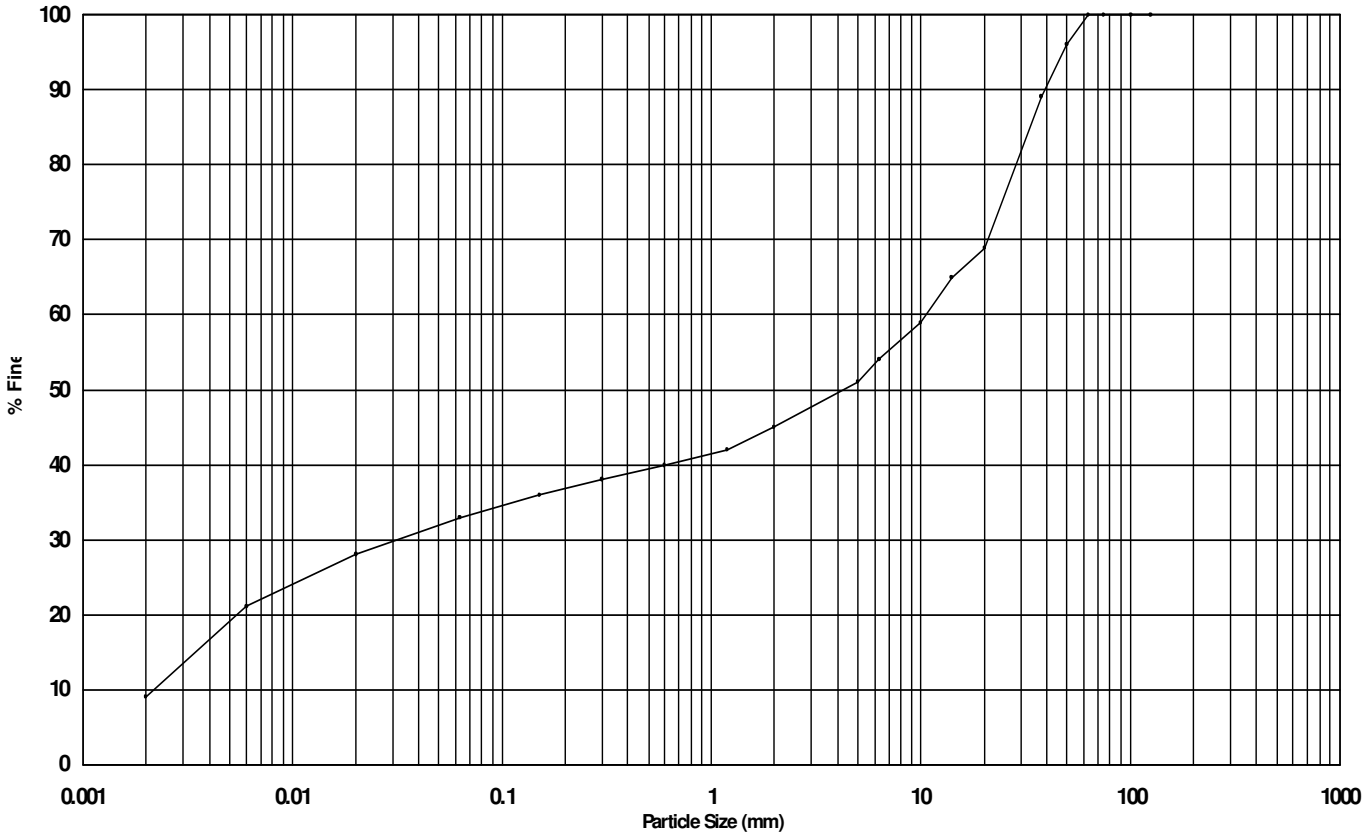
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP72702
Sample Depth 2.50m
Sample Type B
Sample Ref C27038

Sample Description

CHALK, composed of white, locally cream, sandy very silty GRAVEL.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	9
SILT	24
SAND	12
GRAVEL	55
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	96
37.5 mm	89
20 mm	69
14 mm	65
10 mm	59
6.3 mm	54
5 mm	51
2 mm	45
1.18 mm	42
600 µm	40
300 µm	38
150 µm	36

Size	% Finer
63 µm	33
20 µm	28
6 µm	21
2 µm	9

Uniformity Coefficient
4702.47

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

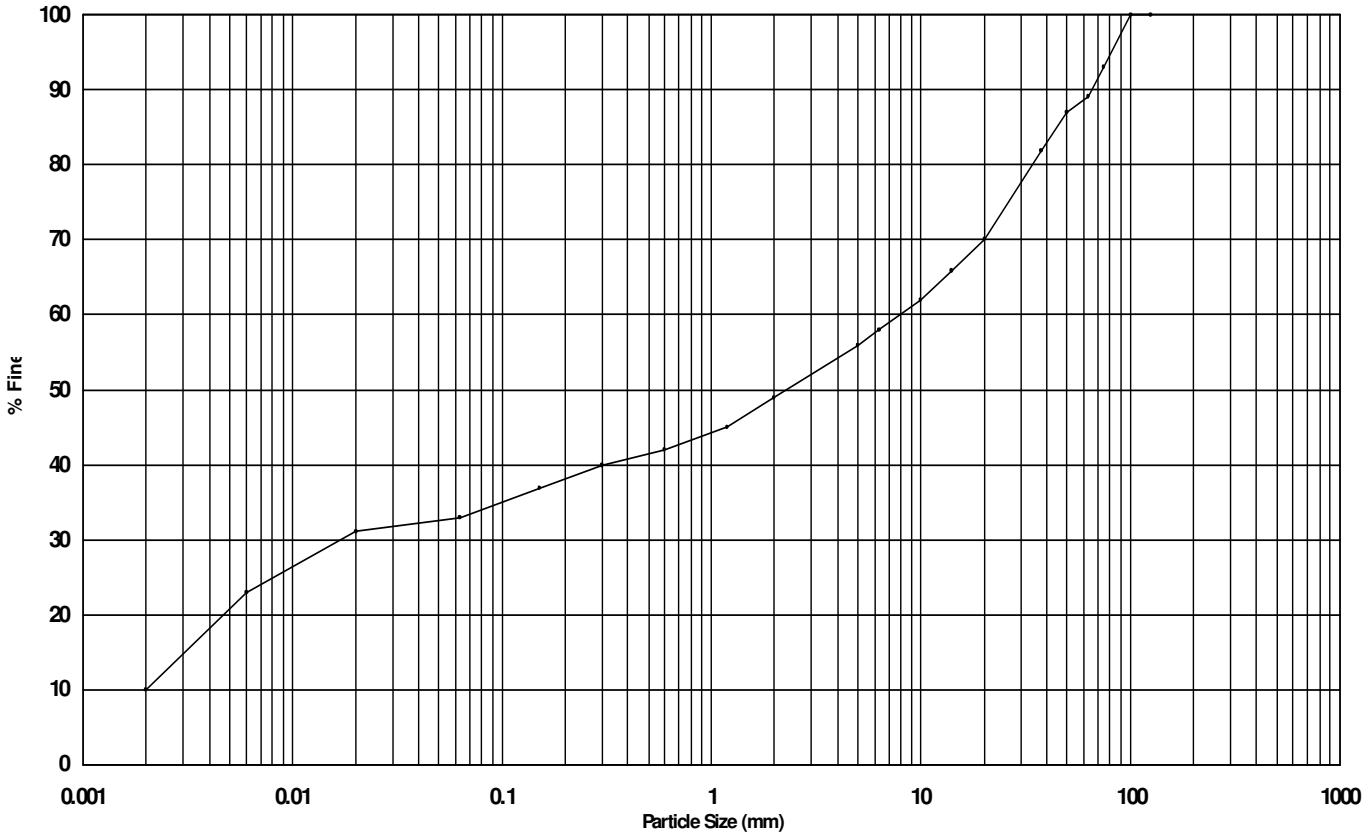
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP72703
Sample Depth	2.00m
Sample Type	B
Sample Ref	C27044

Sample Description

CHALK, recovered as sandy very silty GRAVEL with a medium cobble content.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	10
SILT	23
SAND	16
GRAVEL	40
COBBLES	11
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	93
63 mm	89
50 mm	87
37.5 mm	82
20 mm	70
14 mm	66
10 mm	62
6.3 mm	58
5 mm	56
2 mm	49
1.18 mm	45
600 µm	42
300 µm	40
150 µm	37

Size	% Finer
63 µm	33
20 µm	31
6 µm	23
2 µm	10

Uniformity Coefficient
3719.61

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

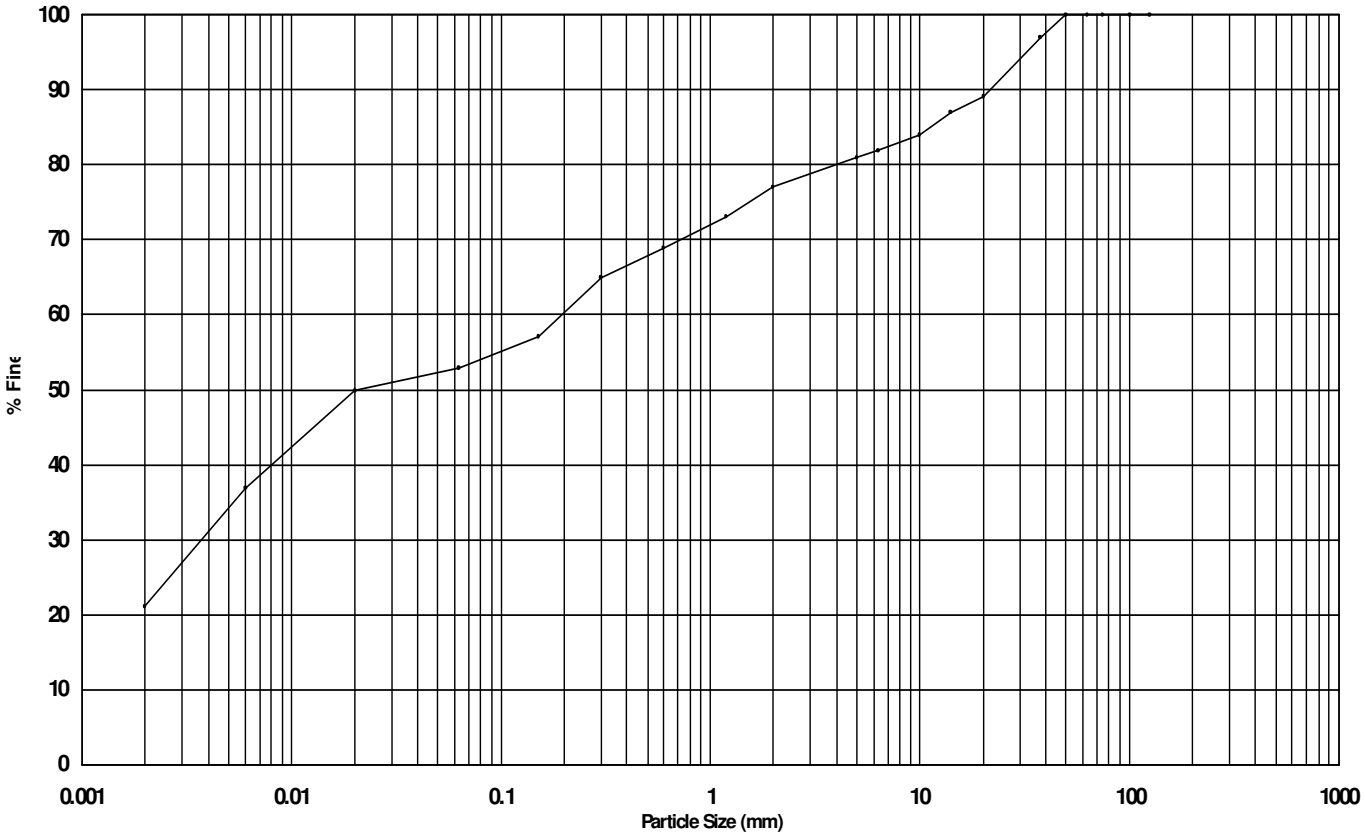
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP72704
Sample Depth 0.50m
Sample Type B
Sample Ref C27043

Sample Description

Light brown slightly sandy slightly gravelly CLAY.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	21
SILT	32
SAND	24
GRAVEL	23
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	97
20 mm	89
14 mm	87
10 mm	84
6.3 mm	82
5 mm	81
2 mm	77
1.18 mm	73
600 µm	69
300 µm	65
150 µm	57

Size	% Finer
63 µm	53
20 µm	50
6 µm	37
2 µm	21

Uniformity Coefficient
Not Available

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

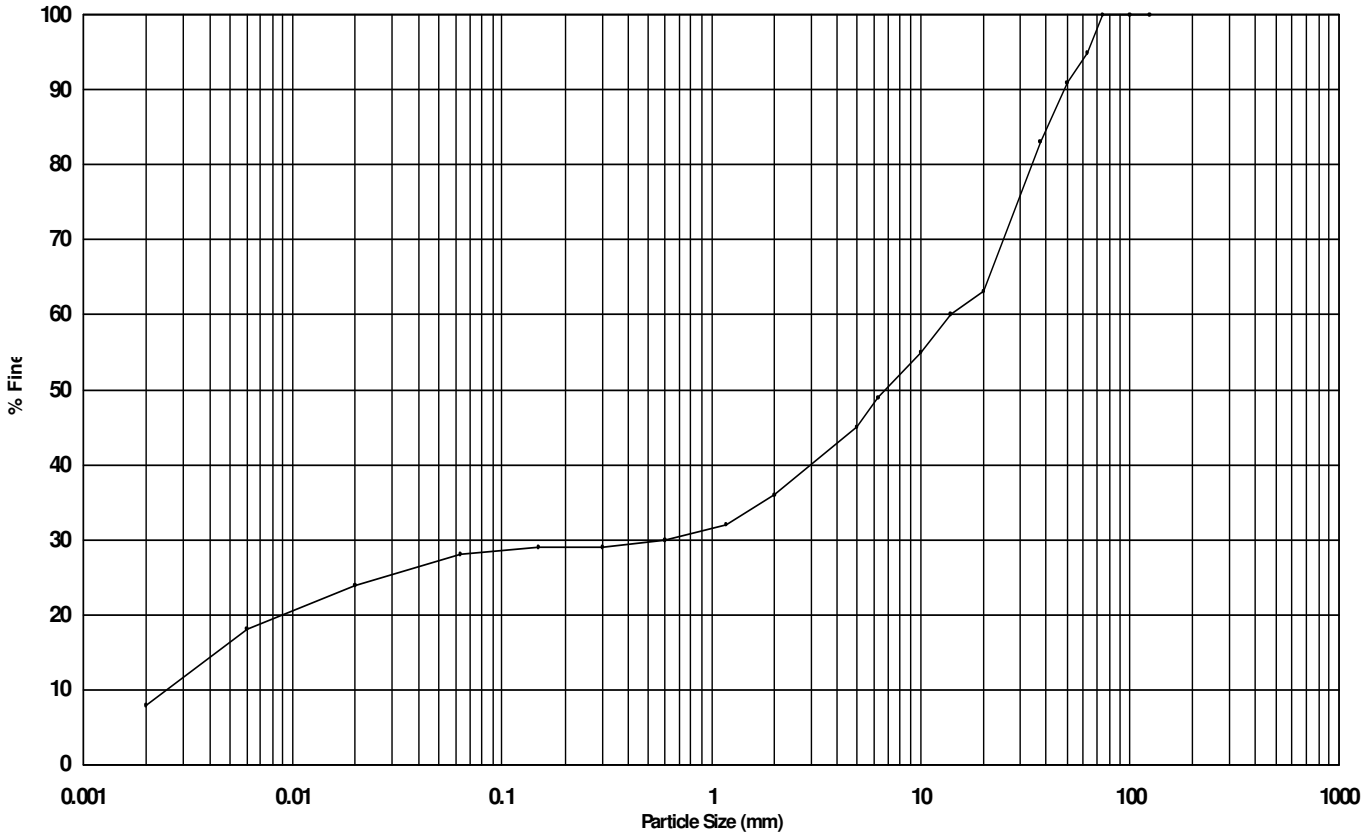
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP72704
Sample Depth 2.00m
Sample Type B
Sample Ref C27040

Sample Description

CHALK, recovered as sandy very silty GRAVEL with a low cobble content.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	8
SILT	20
SAND	8
GRAVEL	59
COBBLES	5
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	95
50 mm	91
37.5 mm	83
20 mm	63
14 mm	60
10 mm	55
6.3 mm	49
5 mm	45
2 mm	36
1.18 mm	32
600 µm	30
300 µm	29
150 µm	29

Size	% Finer
63 µm	28
20 µm	24
6 µm	18
2 µm	8

Uniformity Coefficient
5869.61

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

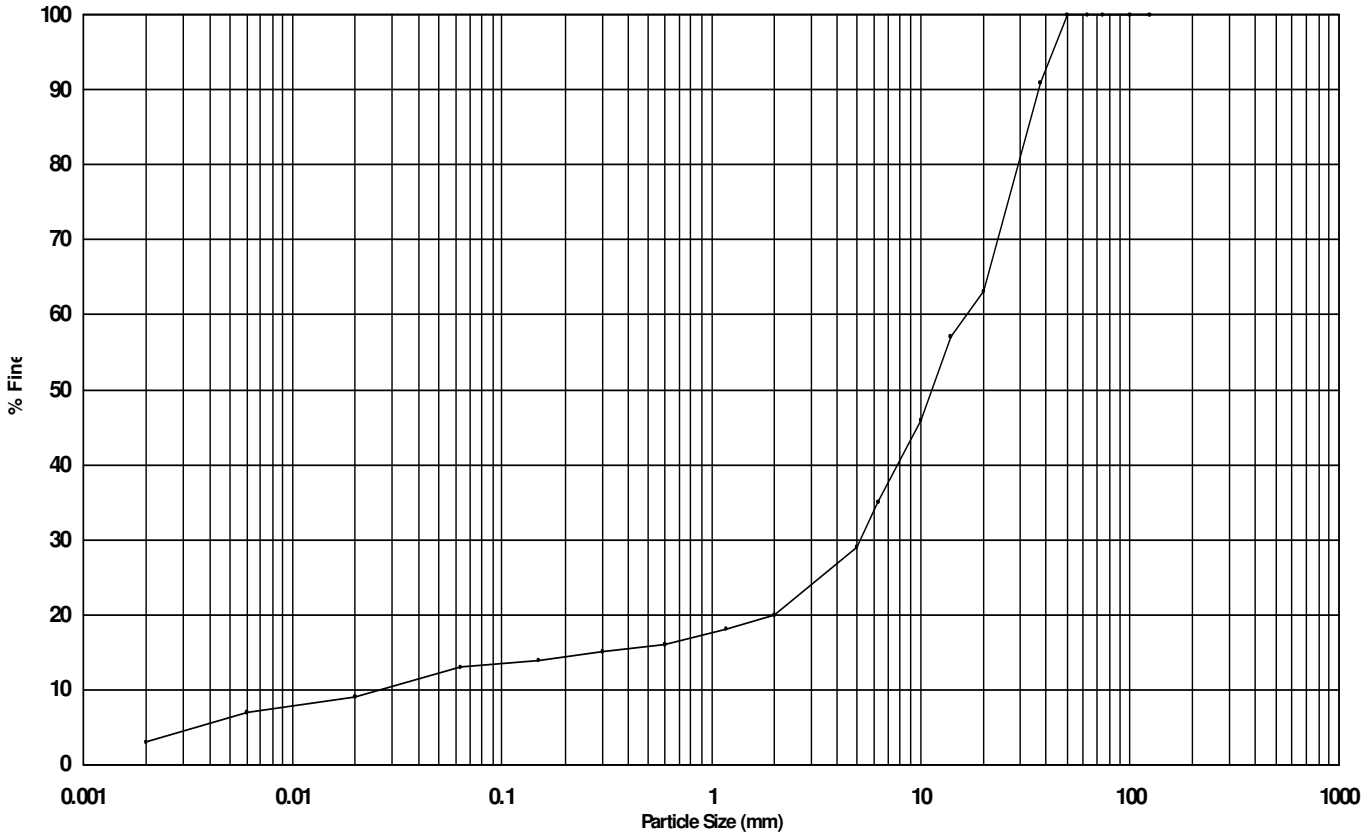
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP72705
Sample Depth	0.60m
Sample Type	B
Sample Ref	C27065

Sample Description

CHALK, composed of sandy silty GRAVEL.



Classification		Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
	CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	3
SILT	10
SAND	7
GRAVEL	80
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	91
20 mm	63
14 mm	57
10 mm	46
6.3 mm	35
5 mm	29
2 mm	20
1.18 mm	18
600 µm	16
300 µm	15
150 µm	14

Size	% Finer
63 µm	13
20 µm	9
6 µm	7
2 µm	3

Uniformity Coefficient
680.92

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

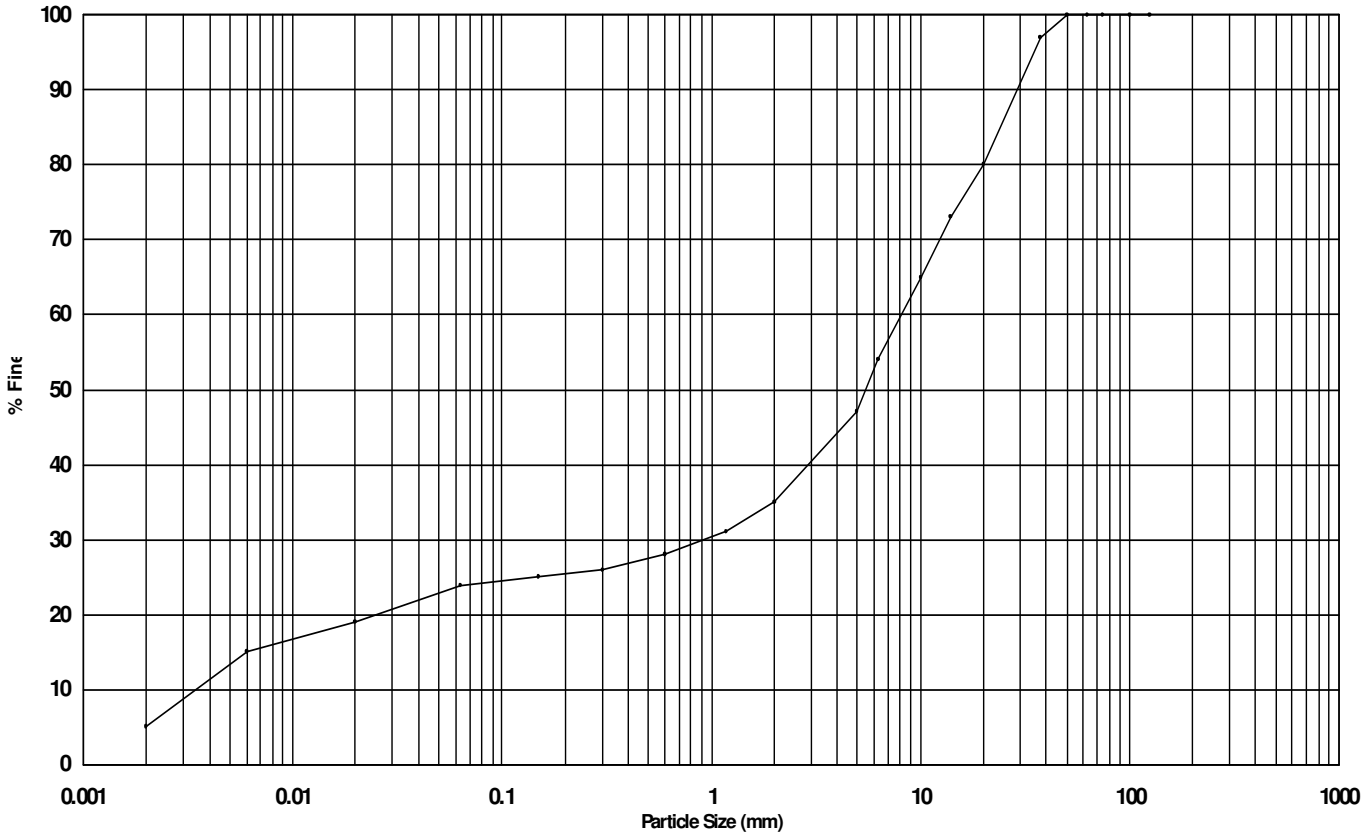
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP72705
Sample Depth 2.40m
Sample Type B
Sample Ref C27064

Sample Description

CHALK, recovered as sandy silty GRAVEL.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	5
SILT	19
SAND	11
GRAVEL	65
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	97
20 mm	80
14 mm	73
10 mm	65
6.3 mm	54
5 mm	47
2 mm	35
1.18 mm	31
600 µm	28
300 µm	26
150 µm	25

Size	% Finer
63 µm	24
20 µm	19
6 µm	15
2 µm	5

Uniformity Coefficient
2296.55

Sieving Method
Wet sieve

Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks AGS Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - MCV, Compaction, CBR

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					MCV		Compaction					CBR				
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	MCV	w %	Type	w (Opt) %	ρ_d Mg/m^3	γ_b Mg/m^3	γ_d (Max) Mg/m^3	Type	Top CBR %	Top w %	Bottom CBR %	Bottom w %
STP7010 1	0.60 (0.60)	B	C27571	CHALK, recovered as sandy silty GRAVEL with a low cobble content.	11.3 17.0* 14.8 15.6	21.2 15.9 13.6 6.2										
STP7010 1	1.00 (1.00)	B	C27570	CHALK.			2.5kg	(17.0) 7.0 9.2 12.1 15.9 29.8 23.4*	2.70m	 1.58 1.65 1.70 1.79 1.84 *1.88	(1.55) 1.48 1.51 1.52 1.54 1.42 *1.52					
STP7010 2	2.00 (2.00)	B	C27576	CHALK, recovered as sandy very silty GRAVEL with a medium cobble content.	15.2* 15.6 15.0 15.8	23.5 15.4 9.6 5.0										
STP7140 1	1.00 (1.00)	B	C26866	CHALK.			2.5kg	(15.8) 6.2 14.8 5.2 7.2 16.7* 28.8	2.65a	 1.66 1.82 1.62 1.66 *1.85 1.87	(1.60) 1.56 1.58 1.54 1.55 *1.58 1.45					
STP7140 2	0.60 (0.60)	B	C27557	CHALK.	17.8 16.0* 11.8 12.7	20.4 12.4 10.1 4.4										
STP7140 3	1.10 (1.10)	B	C26862	CHALK.			2.5kg	(19.0) 8.4 10.6 13.9 21.0 18.2* 23.7	2.65a	 1.63 1.70 1.81 1.94 *1.91 1.94	(1.62) 1.50 1.53 1.59 1.60 *1.61 1.57					
STP7140 4	2.00 (2.00)	B	C27542	CHALK.	2.8 16.7* 15.8 13.9	25.9 21.2 20.3 12.4										
STP7140 5	1.20 (1.20)	B	C26871	CHALK.			2.5kg	(13.3) 18.5* 3.2 4.9 8.4 18.0 17.0	2.65a	 *1.86 1.61 1.68 1.79 1.90 1.97	(1.73) *1.57 1.56 1.60 1.65 1.61 1.68					

Remarks AGS

Particle Density - a=assumed, m=measured

* = at natural moisture content NST - Not suitable for Test

= stabilised, see relevant test plot for details

For Standards followed see Laboratory Test Certficate

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LABORATORY RESULTS - MCV, Compaction, CBR

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					MCV		Compaction					CBR				
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	MCV	w %	Type	w (Opt) %	ρ_d Mg/m^3	γ_b Mg/m^3	γ_d (Max) Mg/m^3	Type	Top CBR %	Top w %	Bottom CBR %	Bottom w %
STP7160 2	1.00 (1.00)	B	C27036	Soft light yellowish brown slightly sandy slightly gravelly CLAY.			2.5kg	(11.0)	2.70m		(1.61)					
								15.4*		*1.82	*1.58					
								2.9		1.60	1.56					
								6.1		1.66	1.56					
								8.5		1.73	1.59					
								18.7		1.83	1.54					
								22.4		1.82	1.49					
STP7160 2	2.00 (2.00)	B	C27037	CHALK.	14.6*	23.7										
					16.4	15.8										
					18.2	10.9										
					15.9	7.0										
STP7160 3	1.20 (1.20)	B	C27798	CHALK.	17.8*	15.4										
					15.6	12.8										
					14.8	10.4										
					14.2	5.2										
STP7160 4	0.60 (0.60)	B	C27799	CHALK.	14.6*	25.9										
					15.0	15.9										
					15.2	10.6										
					17.1	4.4										
STP7160 4	2.00 (2.00)	B	C27790	CHALK, recovered as sandy very silty GRAVEL with a medium cobble content.			2.5kg	(13.5)	2.68m		(1.64)					
								22.2*		*1.90	*1.55					
								3.3		1.51	1.47					
								27.2		1.82	1.43					
								20.2		1.89	1.57					
								8.5		1.72	1.59					

Remarks AGS

Particle Density - a=assumed, m=measured

* = at natural moisture content NST - Not suitable for Test

= stabilised, see relevant test plot for details

For Standards followed see Laboratory Test Certficate

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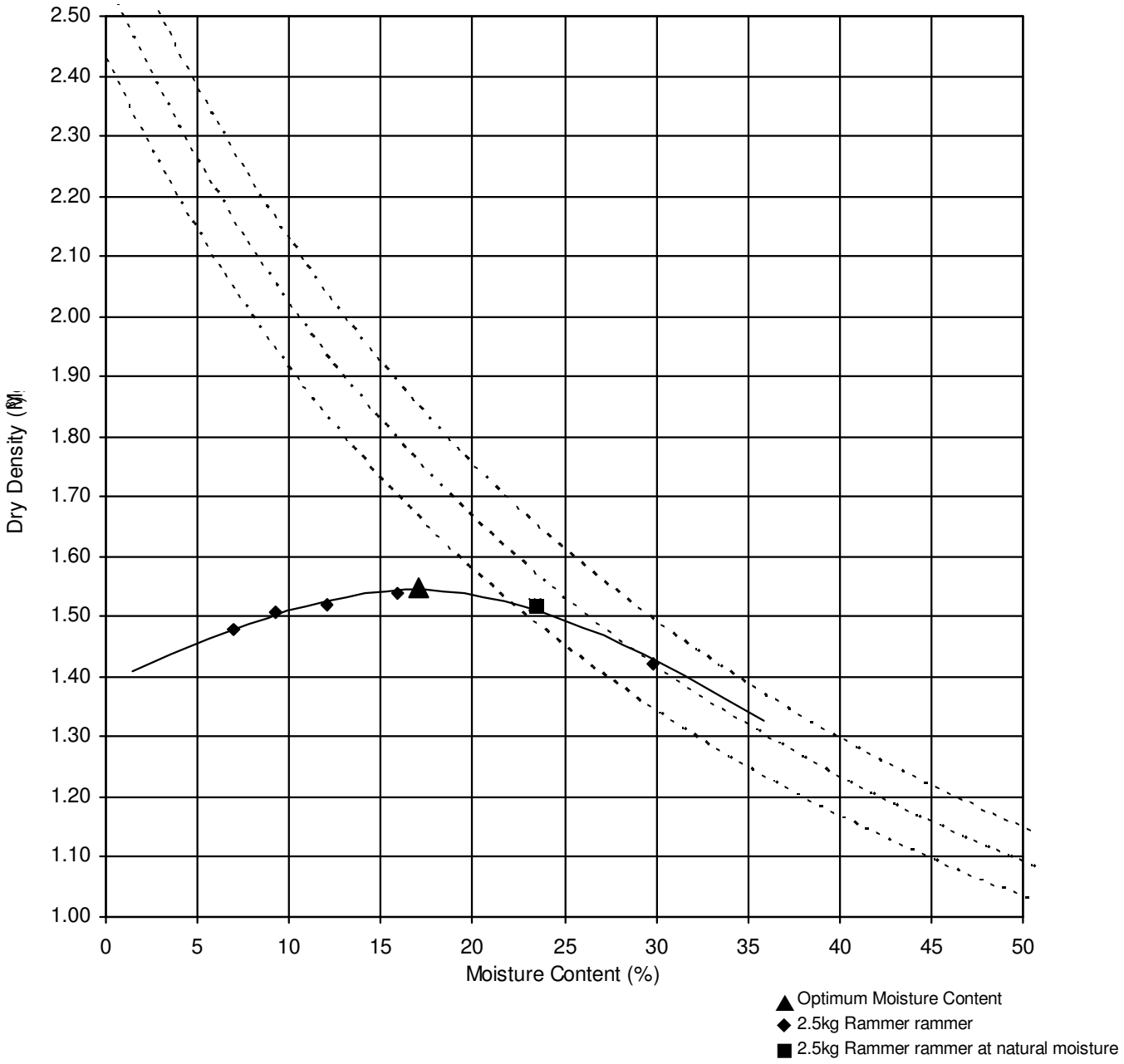
LABORATORY RESULTS - *Compaction*

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP70101
Sample Depth	1.00m
Sample Type	B
Sample Ref	C27570



Optimum Moisture Content	17.0	
Maximum Dry Density	1.55	Mg/m^3
Particle Density	2.70 (Meas)	Mg/m^3
Preparation	Single Sample 2.5kg Rammer	

Particles retained on	37.5mm sieve	19 %
	20mm sieve	25 %
Description	CHALK.	

Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

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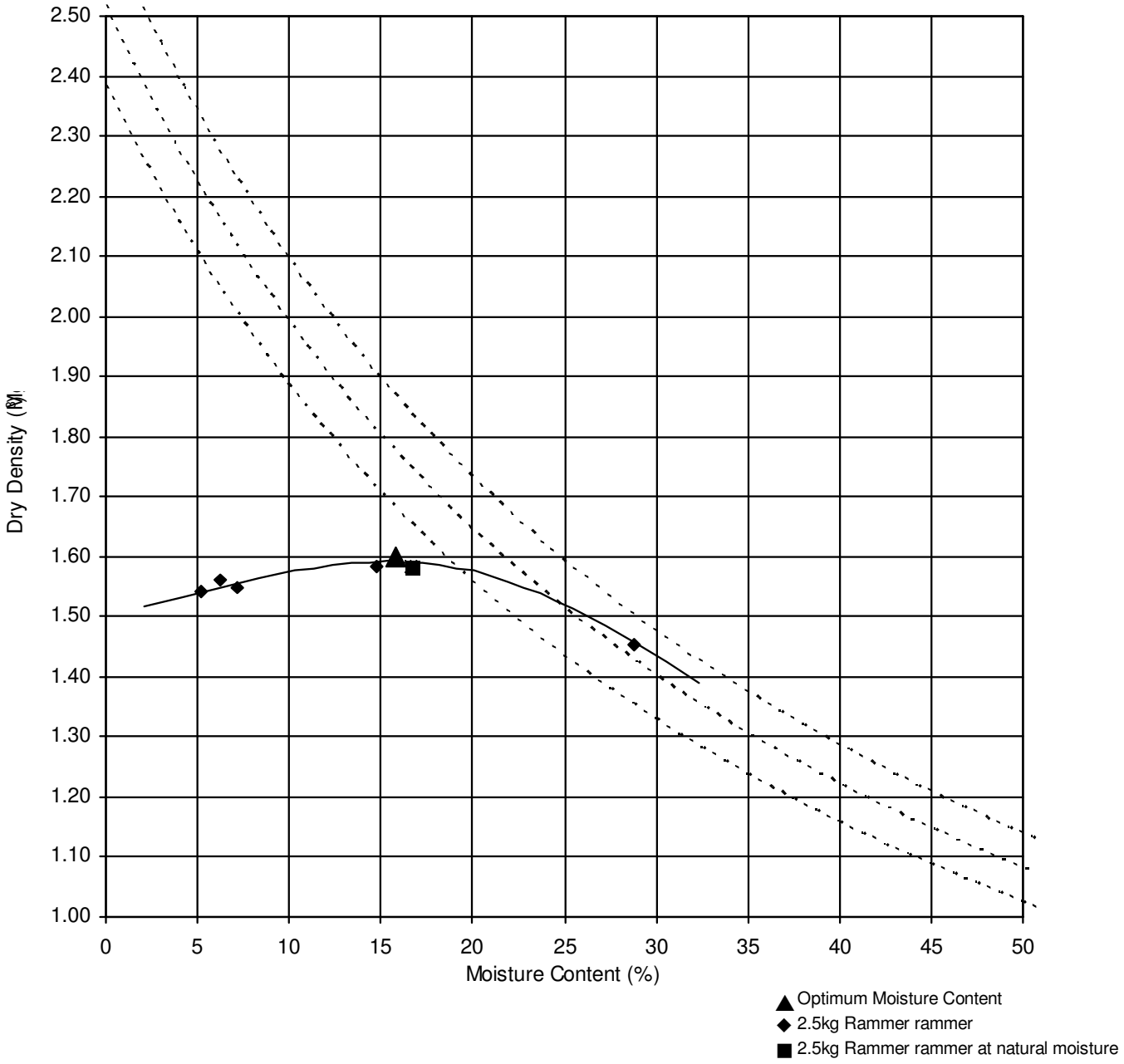
LABORATORY RESULTS - *Compaction*

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71401
Sample Depth	1.00m
Sample Type	B
Sample Ref	C26866



Optimum Moisture Content	15.8	
Maximum Dry Density	1.60	Mg/m^3
Particle Density	2.65 (Assumed)	Mg/m^3
Preparation	Single Sample 2.5kg Rammer	

Particles retained on	37.5mm sieve	25 %
	20mm sieve	28 %
Description	CHALK.	

Remarks AGS BS1377 Part 4 1990 : Clause 3.3 and 3.4

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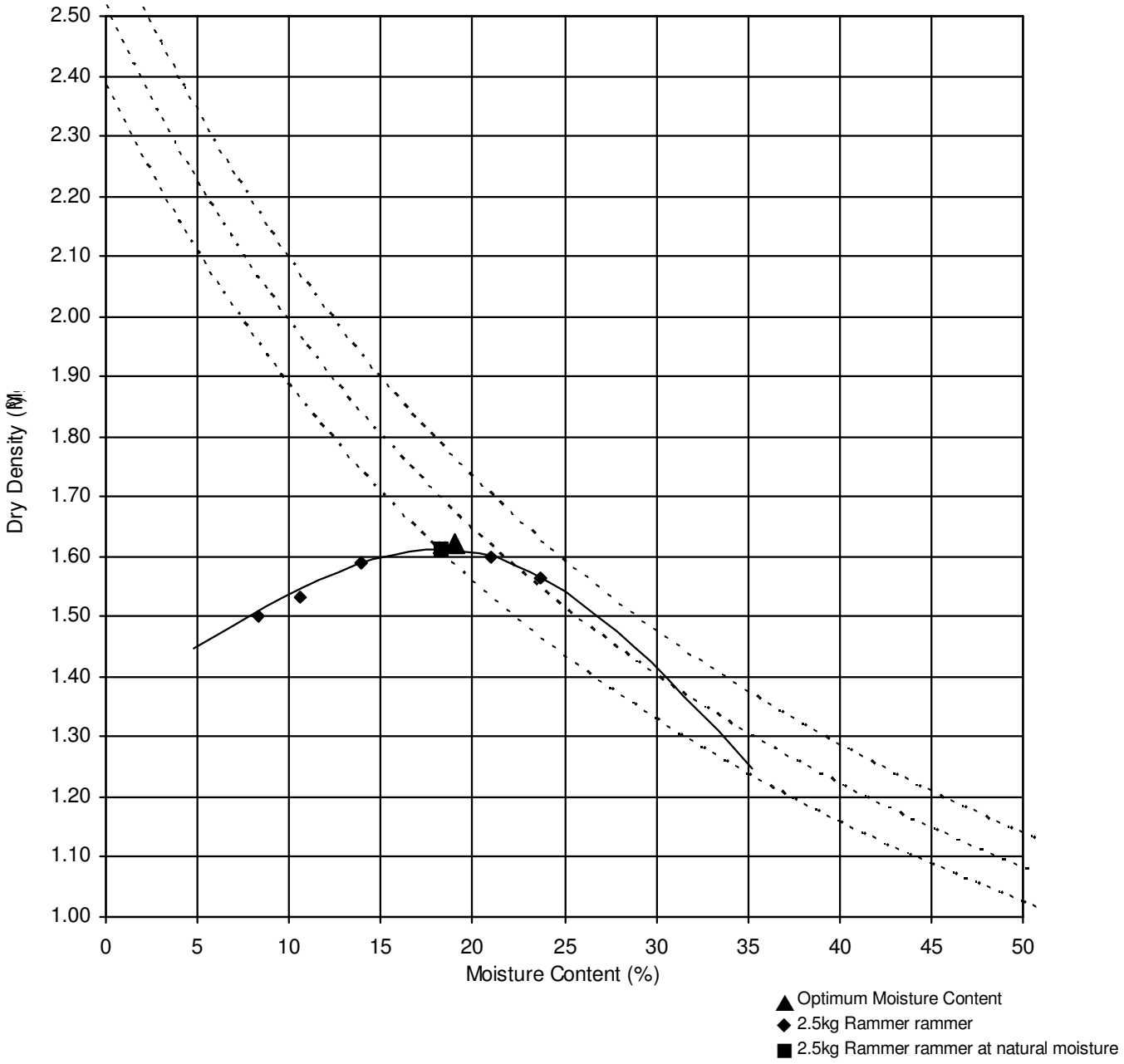
LABORATORY RESULTS - *Compaction*

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71403
Sample Depth	1.10m
Sample Type	B
Sample Ref	C26862



Optimum Moisture Content	19.0	
Maximum Dry Density	1.62	Mg/m^3
Particle Density	2.65 (Assumed)	Mg/m^3
Preparation	Single Sample 2.5kg Rammer	

Particles retained on	37.5mm sieve	39 %
	20mm sieve	19 %
Description	CHALK.	

Remarks AGS BS1377 Part 4 1990 : Clause 3.3 and 3.4

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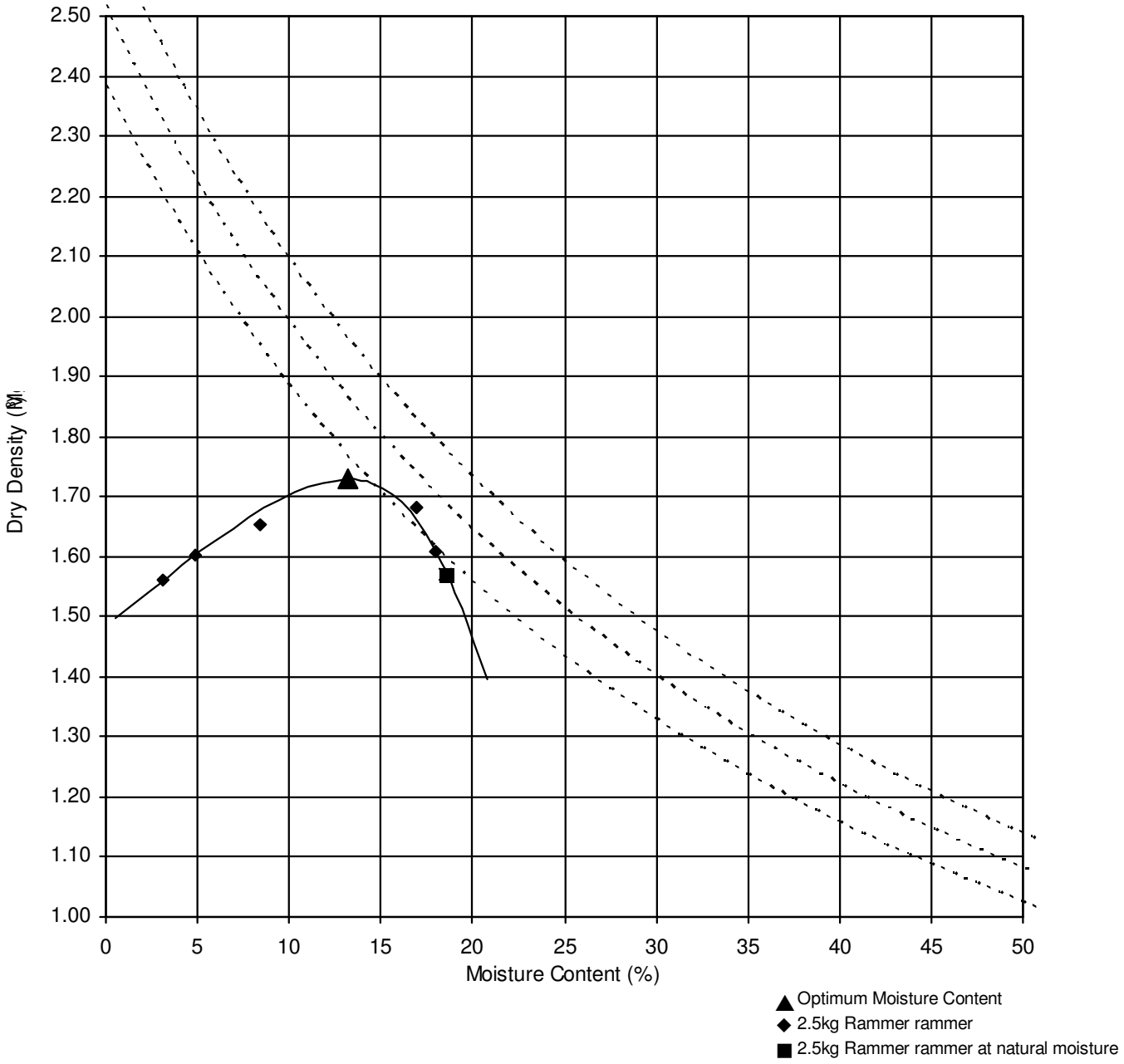
LABORATORY RESULTS - *Compaction*

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71405
Sample Depth	1.20m
Sample Type	B
Sample Ref	C26871



Optimum Moisture Content	13.3	
Maximum Dry Density	1.73	Mg/m^3
Particle Density	2.65 (Assumed)	Mg/m^3
Preparation	Single Sample 2.5kg Rammer	

Particles retained on	37.5mm sieve	0 %
	20mm sieve	20 %
Description	CHALK.	

Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

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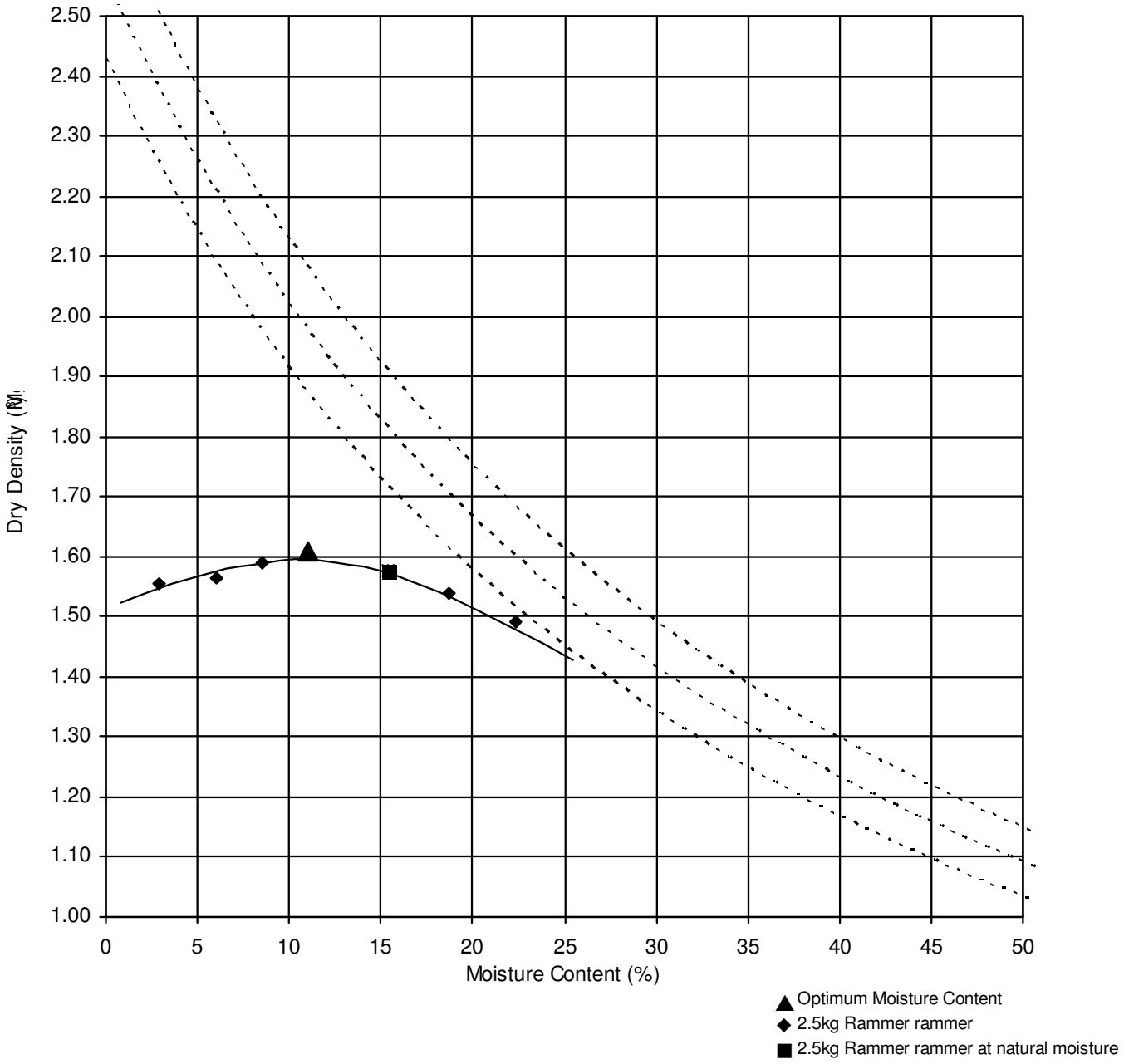
LABORATORY RESULTS - *Compaction*

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71602
Sample Depth	1.00m
Sample Type	B
Sample Ref	C27036



Optimum Moisture Content	11.0	
Maximum Dry Density	1.61	Mg/m^3
Particle Density	2.70 (Meas)	Mg/m^3
Preparation	Single Sample 2.5kg Rammer	

Particles retained on	37.5mm sieve	6 %
	20mm sieve	25 %
Description	Soft light yellowish brown slightly sandy slightly gravelly CLAY.	

Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

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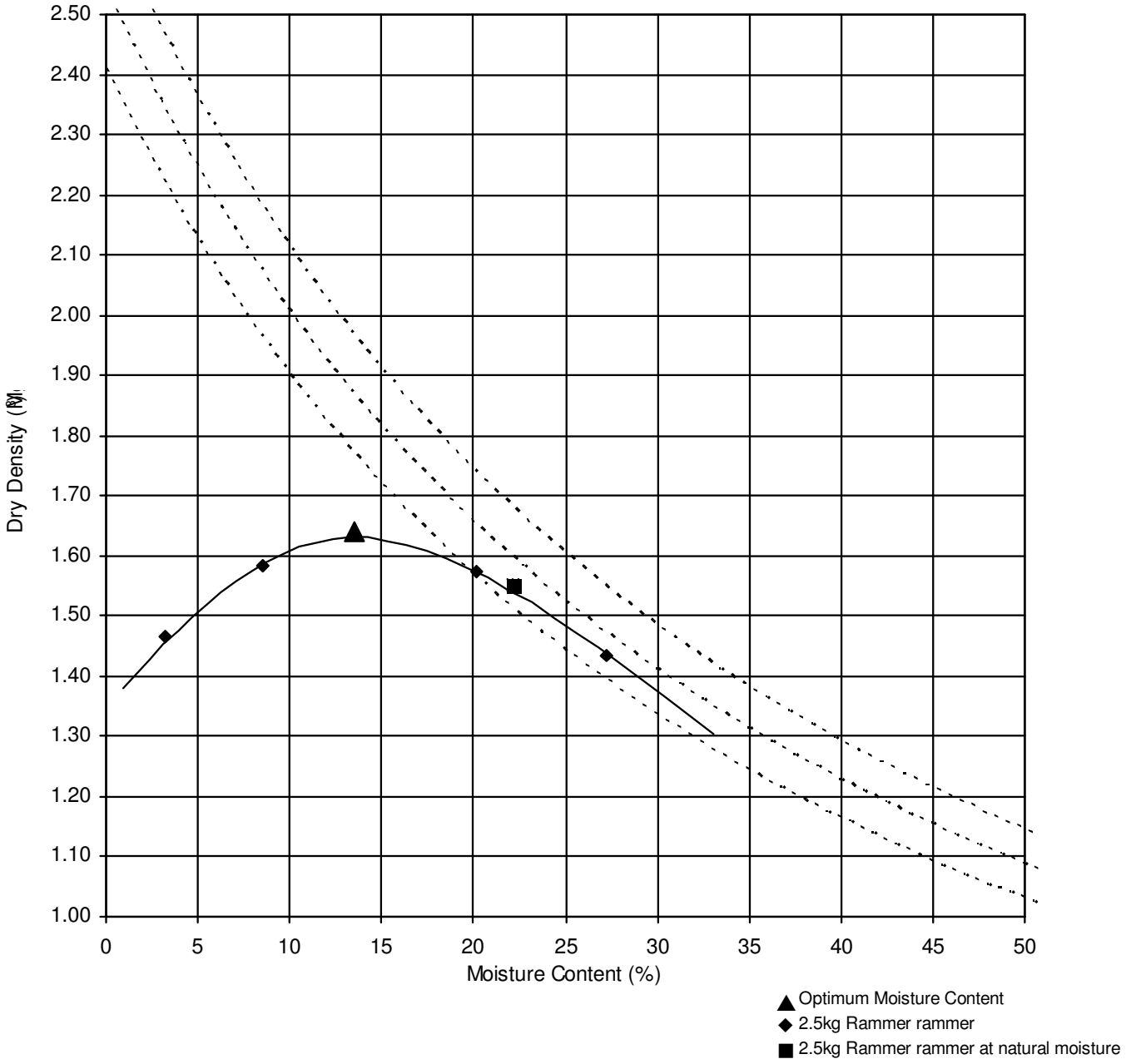
LABORATORY RESULTS - *Compaction*

Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole	STP71604
Sample Depth	2.00m
Sample Type	B
Sample Ref	C27790



Optimum Moisture Content	13.5	
Maximum Dry Density	1.64	Mg/m^3
Particle Density	2.68 (Meas)	Mg/m^3
Preparation	Single Sample 2.5kg Rammer	

Particles retained on	37.5mm sieve	28 %
	20mm sieve	27 %
Description	CHALK, recovered as sandy very silty GRAVEL with a medium cobble content.	

Remarks AGS BS1377 Part 4 1990 : Clause 3.3 and 3.4

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LABORATORY RESULTS - Moisture Condition Value Calibration

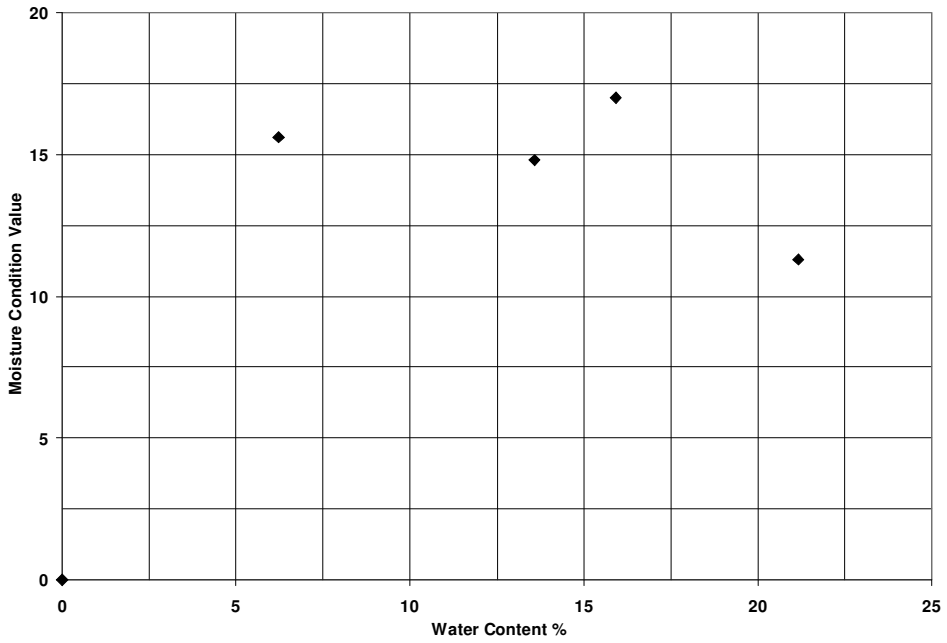
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP70101
Sample Depth 0.60m
Sample Type B
Sample Ref C27571

Sample Description

CHALK, recovered as sandy silty GRAVEL with a low cobble content.



Water Content %	MCV
6.2	15.6
13.5	14.8
15.9	17.0
21.1	11.3

Test Type	Calibration
Method	BS1377 Part 4 1990 : Clause 5.0
Material retained on 20mm sieve (%)	40

Remarks

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LABORATORY RESULTS - Moisture Condition Value Calibration

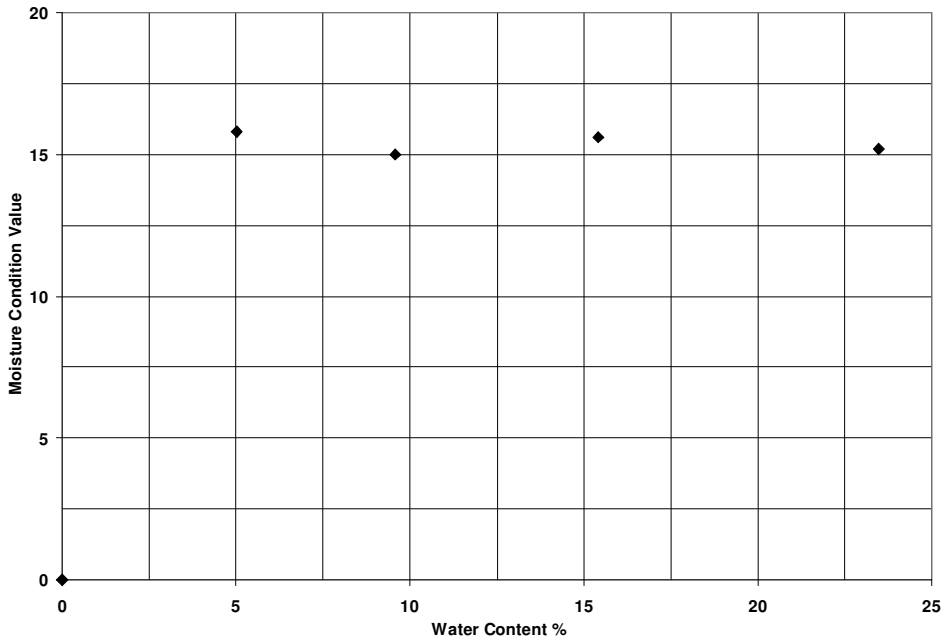
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP70102
Sample Depth 2.00m
Sample Type B
Sample Ref C27576

Sample Description

CHALK, recovered as sandy very silty GRAVEL with a medium cobble content.



Water Content %	MCV
5.0	15.8
9.5	15.0
15.4	15.6
23.4	15.2

Test Type	Calibration
Method	BS1377 Part 4 1990 : Clause 5.0
Material retained on 20mm sieve (%)	40

Remarks

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LABORATORY RESULTS - Moisture Condition Value Calibration

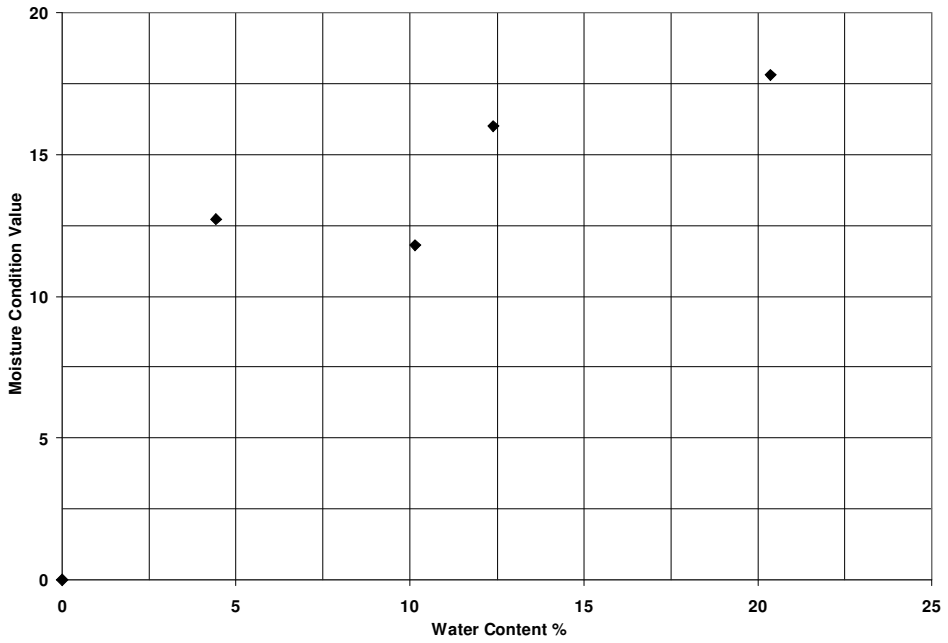
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71402
Sample Depth 0.60m
Sample Type B
Sample Ref C27557

Sample Description

CHALK.



Water Content %	MCV
4.4	12.7
10.1	11.8
12.3	16.0
20.3	17.8

Test Type	Calibration
Method	BS1377 Part 4 1990 : Clause 5.0
Material retained on 20mm sieve (%)	20

Remarks

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LABORATORY RESULTS - Moisture Condition Value Calibration

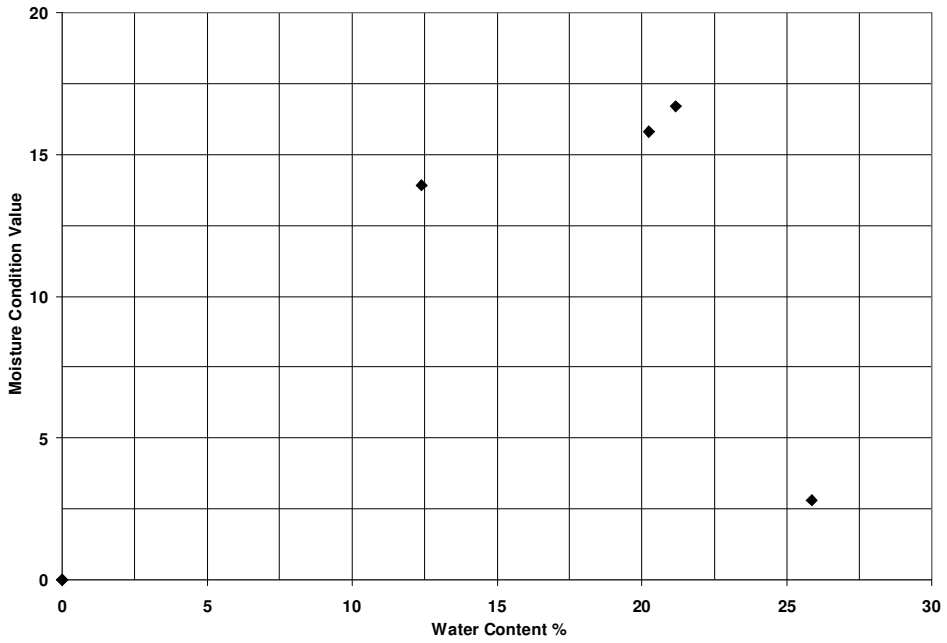
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71404
Sample Depth 2.00m
Sample Type B
Sample Ref C27542

Sample Description

CHALK.



Water Content %	MCV
12.3	13.9
20.2	15.8
21.1	16.7
25.8	2.8

Test Type Calibration
Method BS1377 Part 4 1990 : Clause 5.0

Material retained on 20mm sieve (%) 32

Remarks

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LABORATORY RESULTS - Moisture Condition Value Calibration

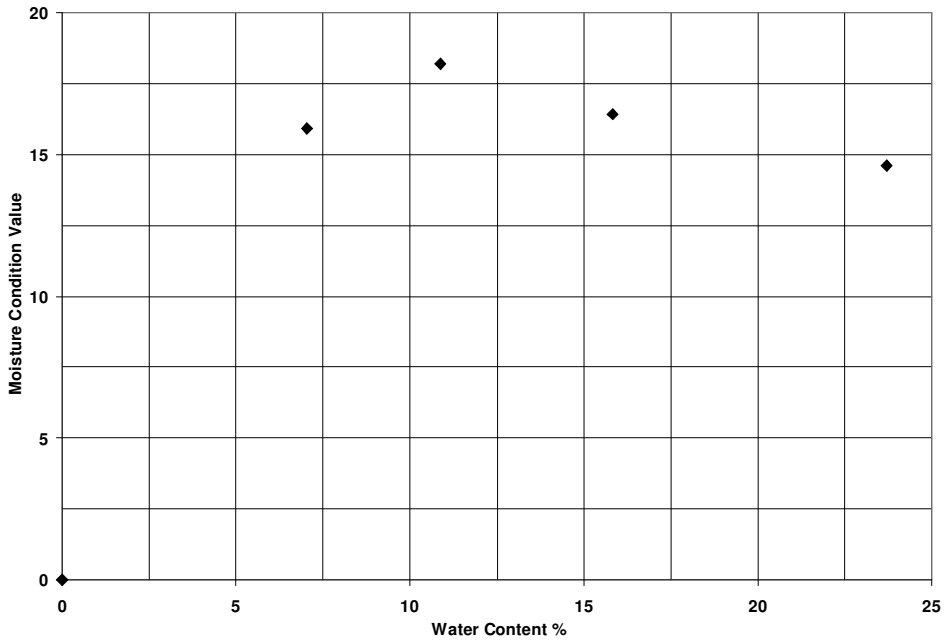
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71602
Sample Depth 2.00m
Sample Type B
Sample Ref C27037

Sample Description

CHALK.



Water Content %	MCV
7.0	15.9
10.8	18.2
15.8	16.4
23.7	14.6

Test Type Calibration
Method BS1377 Part 4 1990 : Clause 5.0

Material retained on 20mm sieve (%) 0

Remarks

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LABORATORY RESULTS - Moisture Condition Value Calibration

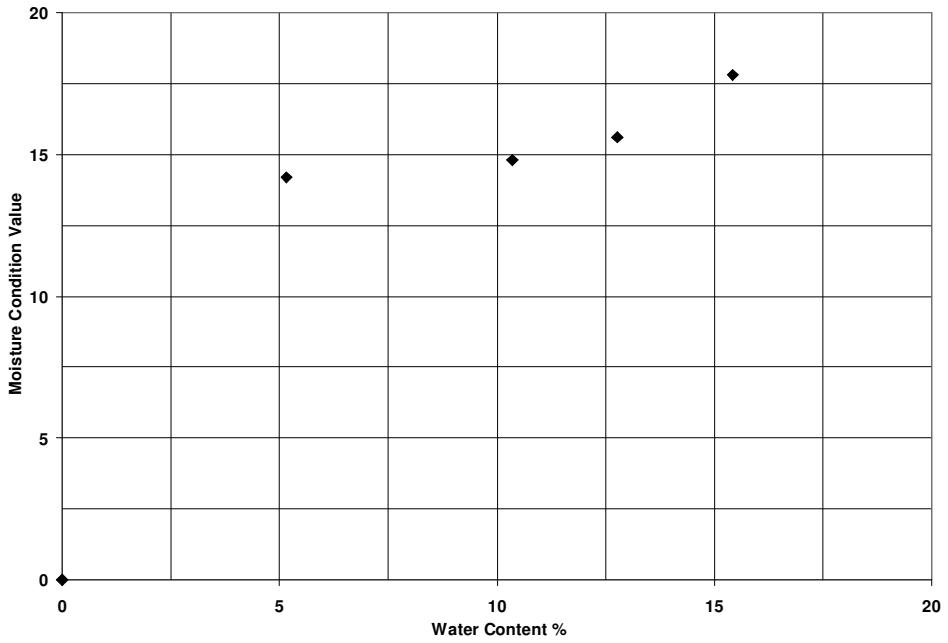
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71603
Sample Depth 1.20m
Sample Type B
Sample Ref C27798

Sample Description

CHALK.



Water Content %	MCV
5.1	14.2
10.3	14.8
12.7	15.6
15.4	17.8

Test Type Calibration
Method BS1377 Part 4 1990 : Clause 5.0

Material retained on 20mm sieve (%) 59

Remarks

21/11/2019

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LABORATORY RESULTS - Moisture Condition Value Calibration

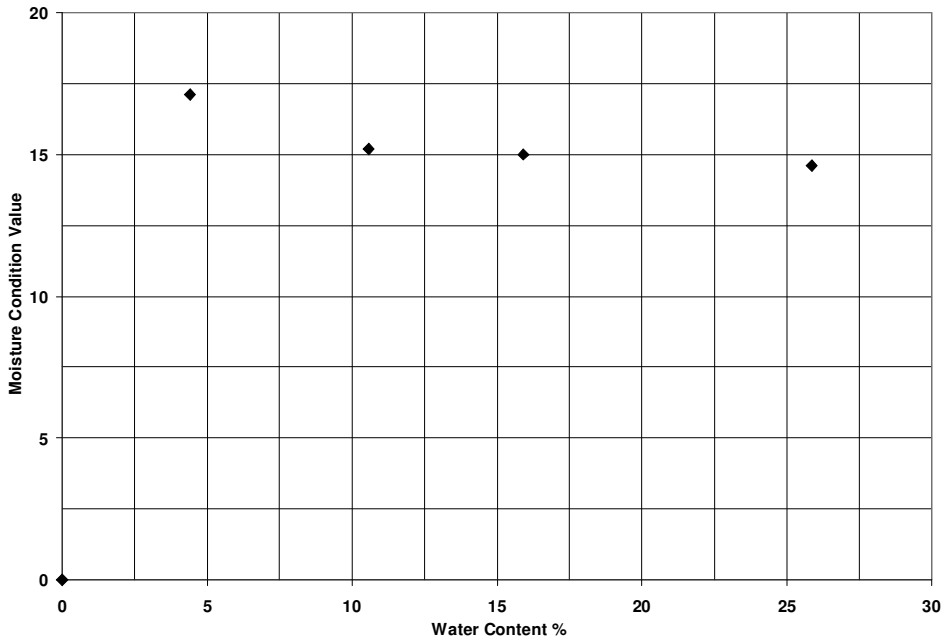
Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II)

Project No: PC197626

Hole STP71604
Sample Depth 0.60m
Sample Type B
Sample Ref C27799

Sample Description

CHALK.



Water Content %	MCV
4.4	17.1
10.5	15.2
15.9	15.0
25.8	14.6

Test Type Calibration
Method BS1377 Part 4 1990 : Clause 5.0

Material retained on 20mm sieve (%) 15

Remarks

21/11/2019

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LABORATORY RESULTS - Point Load Strength Determination

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					w	W	D	Fail Load	Test Type/ Direction	De	De^2	Is	F	Is_{50}
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	%	mm	mm	kN		mm	mm^2	MN/m^2		MN/m^2
R71201	2.68-2.78 (2.68-2.78)	C	C28092	CHALK.	23.6	102	54	0.77	A/PD	83.74	7013	0.110	1.261	0.139
						102	56	0.82	A/PD	85.28	7273	0.112	1.272	0.143
R71202	6.55-6.62 (6.55-6.62)	C	C27900	CHALK.	24.8	90	47	0.21	I/R	73.39	5386	0.039	1.189	0.046
						70	37	0.20	I/R	57.43	3298	0.059	1.064	0.063
R71204	2.90-2.95 (2.90-2.95)	C	C27889	CHALK.	23.0	100	61	1.73	A/PD	88.13	7767	0.223	1.291	0.287
R71205	3.54-3.64 (3.54-3.64)	C	C28419	CHALK.	23.8	101	101	0.31	D/PL	101.00	10201	0.031	1.372	0.042
						101	62	1.48	A/PD	89.29	7973	0.185	1.298	0.240
						101	58	0.83	A/PD	86.36	7459	0.112	1.279	0.143
R71205	9.58-9.70 (9.58-9.70)	C	C28424	CHALK.	20.6	101	101	1.22	D/PL	101.00	10201	0.120	1.372	0.164
						101	61	1.74	A/PD	88.57	7844	0.222	1.293	0.287
						101	56	1.27	A/PD	84.86	7201	0.176	1.269	0.224
R71205	12.26-12.41 (12.26-12.41)	C	C28422	CHALK.	22.6	94	95	0.90	D/PL	95.00	9025	0.099	1.335	0.133
						95	87	1.27	A/PD	102.58	10523	0.120	1.382	0.166
						95	58	1.10	A/PD	83.76	7016	0.156	1.261	0.197
R71205	14.80-15.00 (14.80-15.00)	C	C28421	CHALK.	21.8	101	101	1.55	D/PL	101.00	10201	0.152	1.372	0.209
						101	101	1.00	D/PL	101.00	10201	0.098	1.372	0.134
						101	83	1.45	A/PD	103.31	10674	0.135	1.386	0.188
						101	79	1.23	A/PD	100.79	10159	0.121	1.371	0.166
						101	55	0.84	A/PD	84.10	7073	0.119	1.264	0.150
R71206	6.00-6.12 (6.00-6.12)	C	C28294	CHALK.	23.8	101	100	1.04	D/PL	100.00	10000	0.104	1.366	0.142
						100	74	1.30	A/PD	97.07	9422	0.138	1.348	0.186
						100	48	1.01	A/PD	78.18	6112	0.166	1.223	0.203
R71207	4.22-4.36 (4.22-4.36)	C	C28427	CHALK.	25.9	101	59	0.75	A/PD	87.10	7587	0.099	1.284	0.127
						95	82	0.73	I/R	99.59	9919	0.073	1.364	0.100
R71208	6.80-6.92 (6.80-6.92)	C	C28105	CHALK.	24.8	96	95	0.73	D/PL	95.00	9025	0.081	1.335	0.108
						95	59	0.79	A/PD	84.48	7137	0.111	1.266	0.141
						95	77	1.06	A/PD	96.51	9314	0.114	1.344	0.153
R71209	5.57-5.73 (5.57-5.73)	C	C27896	CHALK.	18.6	100	82	1.49	A/PD	102.18	10441	0.143	1.379	0.197

Remarks AGS

Test Type D - Diametral, A - Axial, I - Lump or Irregular Test
Direction PL - parallel to planes of weakness, R - Random or unknown orientation, PD - perpendicular to planes of weakness
Fail Load UF - unacceptable failure
For Standards followed see Laboratory Test Certificate

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LABORATORY RESULTS - Point Load Strength Determination

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					w	W	D	Fail Load	Test Type/ Direction	De	De^2	Is	F	Is_{50}
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	%	mm	mm	kN		mm	mm^2	MN/m^2		MN/m^2
R71211	7.49-7.58 (7.49-7.58)	C	C28050	CHALK.	25.5	100	99	0.72	D/PL	99.00	9801	0.073	1.360	0.100
						99	64	1.24	A/PD	89.82	8067	0.153	1.302	0.200
						99	59	0.69	A/PD	86.24	7437	0.093	1.278	0.118
R71212	3.40-3.46 (3.40-3.46)	C	C28098	CHALK.	23.2	101	69	1.50	A/PD	94.20	8873	0.169	1.330	0.225
R71802	8.40-8.48 (8.40-8.48)	C	C27119	CHALK.	20.6	100	100	0.13	D/PL	100.00	10000	0.013	1.366	0.018
						100	57	0.25	A/PD	85.19	7257	0.034	1.271	0.043
						100	51	0.55	A/PD	80.58	6494	0.084	1.240	0.105
R71802	11.91-12.00 (11.91-12.00)	C	C27114	CHALK.	26.0	100	100	0.47	D/PL	100.00	10000	0.047	1.366	0.064
						100	62	0.67	A/PD	88.85	7894	0.084	1.295	0.109
						100	49	0.68	A/PD	78.99	6239	0.109	1.229	0.134
R71802	19.65-19.80 (19.65-19.80)	C	C27113	CHALK.	23.2	98	96	1.47	D/PL	96.00	9216	0.159	1.341	0.213
						96	82	1.81	A/PD	100.11	10023	0.181	1.367	0.247
						96	76	1.71	A/PD	96.38	9290	0.184	1.344	0.248
R71802	35.09-35.33 (35.09-35.33)	C	C28056	CHALK.	25.2	100	100	1.49	D/PL	100.00	10000	0.149	1.366	0.204
						100	100	1.64	D/PL	100.00	10000	0.164	1.366	0.225
						100	79	1.77	A/PD	100.29	10059	0.176	1.368	0.240
						100	80	1.46	A/PD	100.93	10186	0.143	1.372	0.196
						100	77	1.56	A/PD	99.01	9804	0.160	1.360	0.217
R71803	5.68-5.74 (5.68-5.74)	C	C28081	CHALK.	23.3	100	91	0.75	A/PD	107.64	11586	0.065	1.412	0.092
R71803	13.08-13.20 (13.08-13.20)	C	C28080	CHALK.	25.4	100	100	0.52	D/PL	100.00	10000	0.052	1.366	0.071
						100	79	0.73	A/PD	100.29	10059	0.072	1.368	0.099
						100	41	0.36	A/PD	72.25	5220	0.069	1.180	0.081
R71803	33.82-34.20 (33.82-34.20)	C	C28089	CHALK.	24.2	100	88	1.82	A/PD	105.85	11205	0.162	1.401	0.227
R71803	42.60-43.10 (42.60-43.10)	C	C28091	CHALK.	21.9	100	100	1.24	D/PL	100.00	10000	0.124	1.366	0.170
						100	100	1.46	D/PL	100.00	10000	0.146	1.366	0.200
						100	82	1.58	A/PD	102.18	10441	0.152	1.379	0.209
						100	71	1.33	A/PD	95.08	9040	0.147	1.335	0.196
						100	66	1.25	A/PD	91.67	8403	0.149	1.314	0.195
R71804	9.83-10.00 (9.83-10.00)	C	C27107	CHALK.	28.1	101	100	0.36	D/PL	100.00	10000	0.036	1.366	0.049
						100	61	1.13	A/PD	88.13	7767	0.145	1.291	0.187
						100	58	0.42	I/R	85.93	7385	0.057	1.276	0.073

Remarks AGS

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LABORATORY RESULTS - Point Load Strength Determination

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					w	W	D	Fail Load	Test Type/ Direction	De	De^2	Is	F	Is_{50}
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	%	mm	mm	kN		mm	mm^2	MN/m^2		MN/m^2
R71804	19.77-20.27 (19.77-20.27)	C	C27105	CHALK.	27.1	100	100	1.06	D/PL	100.00	10000	0.106	1.366	0.145
						100	80	0.86	A/PD	100.93	10186	0.085	1.372	0.116
						100	90	1.16	A/PD	107.05	11459	0.101	1.409	0.142
R71804	26.50-26.97 (26.50-26.97)	C	C28116	CHALK.	27.6	100	100	0.70	D/PL	100.00	10000	0.070	1.366	0.095
						100	91	1.41	A/PD	107.64	11586	0.122	1.412	0.172
						100	59	1.17	A/PD	86.67	7512	0.156	1.281	0.200
R71804	36.21-36.51 (36.21-36.51)	C	C28120	CHALK.	23.9	100	100	0.54	D/PL	100.00	10000	0.054	1.366	0.074
						100	99	2.08	A/PD	112.27	12605	0.165	1.439	0.237
						100	60	0.99	A/PD	87.40	7639	0.129	1.286	0.166
R71806	5.50-5.69 (5.50-5.69)	C	C27079	CHALK.	26.1	100	100	1.09	D/PL	100.00	10000	0.109	1.366	0.149
						100	87	1.73	A/PD	105.25	11077	0.156	1.398	0.218
						100	81	1.53	A/PD	101.55	10313	0.149	1.376	0.205
R71806	9.51-9.60 (9.51-9.60)	C	C27082	CHALK.	25.9	100	70	1.30	A/PD	94.41	8913	0.146	1.331	0.194
						100	81	0.92	A/PD	101.55	10313	0.090	1.376	0.123
R71806	20.34-20.50 (20.34-20.50)	C	C27135	CHALK.	26.3	100	100	1.29	D/PL	100.00	10000	0.129	1.366	0.176
						100	92	1.75	A/PD	108.23	11714	0.149	1.416	0.211
						100	87	1.36	A/PD	105.25	11077	0.123	1.398	0.172
R71806	29.87-30.12 (29.87-30.12)	C	C27134	CHALK.	23.1	100	100	1.95	D/PL	100.00	10000	0.195	1.366	0.266
						100	100	1.83	D/PL	100.00	10000	0.183	1.366	0.251
						100	79	2.15	A/PD	100.29	10059	0.214	1.368	0.293
						100	71	2.24	A/PD	95.08	9040	0.248	1.335	0.331
						100	70	2.25	A/PD	94.41	8913	0.253	1.331	0.337
R71807	1.40-1.50 (1.40-1.50)	C	C26738	CHALK.	24.3	40	30	0.37	I/R	39.09	1528	0.243	0.895	0.218
						50	30	0.31	I/R	43.70	1910	0.162	0.941	0.153
						50	34	1.51	I/R	46.52	2165	0.698	0.968	0.675
R71807	7.15-7.30 (7.15-7.30)	C	C26724	CHALK.	26.0	100	99	0.74	D/PL	99.00	9801	0.076	1.360	0.103
						99	89	1.93	A/PD	105.92	11219	0.172	1.402	0.241
						99	69	1.28	A/PD	93.26	8697	0.147	1.324	0.195
R71807	13.15-13.30 (13.15-13.30)	C	C26726	CHALK.	24.6	95	96	0.85	D/PL	96.00	9216	0.092	1.341	0.123
						96	91	1.73	A/PD	105.47	11123	0.156	1.399	0.218
						96	59	1.51	A/PD	84.92	7212	0.209	1.269	0.266
R71807	19.08-19.47 (19.08-19.47)	C	C26737	CHALK.	24.4	100	100	1.16	D/PL	100.00	10000	0.116	1.366	0.159
						100	74	0.82	A/PD	97.07	9422	0.087	1.348	0.117
						100	39	0.52	A/PD	70.47	4966	0.105	1.167	0.122

Remarks AGS

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LABORATORY RESULTS - Point Load Strength Determination

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					w	W	D	Fail Load	Test Type/ Direction	De	De^2	Is	F	Is_{50}
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	%	mm	mm	kN		mm	mm^2	MN/m^2		MN/m^2
R71808	11.62-11.70 (11.62-11.70)	C	C27085	CHALK.	24.7	100	91	0.46	A/PD	107.64	11586	0.040	1.412	0.056
R71808	21.94-22.05 (21.94-22.05)	C	C27091	CHALK.	26.7	100	100	0.87	D/PL	100.00	10000	0.087	1.366	0.118
					26.7	100	70	1.27	A/PD	94.41	8913	0.142	1.331	0.190
R71808	23.20-23.33 (23.20-23.33)	C	C27088	CHALK.	25.6	100	100	0.60	D/PL	100.00	10000	0.060	1.366	0.082
					25.6	100	59	0.68	A/PD	86.67	7512	0.091	1.281	0.117
R71808	38.70-38.80 (38.70-38.80)	C	C27129	CHALK.	23.0	100	102	0.31	D/PL	102.00	10404	0.030	1.378	0.041
					23.0	102	59	0.94	A/PD	87.53	7662	0.122	1.287	0.158
					23.0	102	57	0.82	A/PD	86.04	7403	0.111	1.277	0.141
R71810	2.51-2.64 (2.51-2.64)	C	C26421	CHALK.	22.7	100	100	0.33	D/PL	100.00	10000	0.033	1.366	0.045
						100	62	0.75	A/PD	88.85	7894	0.096	1.295	0.124
						90	58	0.39	A/PD	81.52	6646	0.059	1.246	0.073
R71810	12.56-12.71 (12.56-12.71)	C	C26422	CHALK.	23.4	90	88	0.25	D/PL	88.00	7744	0.032	1.290	0.041
						88	61	0.75	A/PD	82.67	6835	0.110	1.254	0.138
						88	68	0.71	A/PD	87.29	7619	0.093	1.285	0.119
R71810	36.32-36.50 (36.32-36.50)	C	C26743	CHALK.	23.2	100	99	0.73	D/PL	99.00	9801	0.075	1.360	0.102
						99	89	0.75	A/PD	105.92	11219	0.067	1.402	0.094
						99	83	0.71	A/PD	102.28	10462	0.067	1.380	0.093
R71810	44.21-44.80 (44.21-44.80)	C	C26721	CHALK.	18.4	100	1000	2.04	A/PD	252.31	63662	0.032	2.072	0.066
						100	91	2.43	A/PD	107.64	11586	0.210	1.412	0.297
						100	80	2.26	A/PD	100.93	10186	0.222	1.372	0.305
R71811	11.30-11.40 (11.30-11.40)	C	C27095	CHALK.	28.0	100	100	0.56	D/PL	100.00	10000	0.056	1.366	0.076
						100	61	0.64	A/PD	88.13	7767	0.082	1.291	0.106
						100	50	0.43	A/PD	79.79	6366	0.068	1.234	0.083
R71811	20.38-20.50 (20.38-20.50)	C	C27100	CHALK.	25.2	88	88	0.87	D/PL	88.00	7744	0.113	1.290	0.145
						88	70	0.74	A/PD	88.56	7843	0.094	1.293	0.122
						88	58	0.65	A/PD	80.61	6499	0.100	1.240	0.124
R71811	35.27-35.50 (35.27-35.50)	C	C27098	CHALK.	24.7	100	100	0.78	D/PL	100.00	10000	0.078	1.366	0.106
						100	100	1.09	D/PL	100.00	10000	0.109	1.366	0.149
						100	76	1.54	A/PD	98.37	9677	0.159	1.356	0.215
						100	79	1.21	A/PD	100.29	10059	0.120	1.368	0.165
						95	74	1.31	A/PD	94.61	8951	0.147	1.332	0.196

Remarks AGS

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LABORATORY RESULTS - Point Load Strength Determination

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					w	W	D	Fail Load	Test Type/ Direction	De	De^2	Is	F	Is_{50}
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	%	mm	mm	kN		mm	mm^2	MN/m^2		MN/m^2
R71811	43.85-44.08 (43.85-44.08)	C	C28112	CHALK.	21.4	96	95	1.70	D/PL	95.00	9025	0.188	1.335	0.251
						95	95	1.35	D/PL	95.00	9025	0.149	1.335	0.199
						95	80	2.07	A/PD	98.37	9677	0.214	1.356	0.290
						95	74	2.10	A/PD	94.61	8951	0.235	1.332	0.313
						95	74	1.71	A/PD	94.61	8951	0.191	1.332	0.255
R71812	4.90-4.98 (4.90-4.98)	C	C26457	CHALK.	25.1	100	91	1.64	A/PD	107.64	11586	0.142	1.412	0.200
R71812	14.50-14.77 (14.50-14.77)	C	C26461	CHALK.	25.2	100	100	0.92	D/PL	100.00	10000	0.092	1.366	0.126
						100	72	1.00	A/PD	95.75	9167	0.110	1.340	0.147
						100	48	1.00	A/PD	78.18	6112	0.164	1.223	0.201
R71812	22.53-22.83 (22.53-22.83)	C	C26763	CHALK.	25.9	100	100	1.17	D/PL	100.00	10000	0.117	1.366	0.160
						100	72	1.72	A/PD	95.75	9167	0.188	1.340	0.252
					25.9	100	49	1.08	A/PD	78.99	6239	0.174	1.229	0.213
R71812	28.12-28.48 (28.12-28.48)	C	C26757	CHALK.	22.0	100	84	2.59	A/PD	103.42	10695	0.243	1.387	0.336
R71814	3.80-3.90 (3.80-3.90)	C	C26439	CHALK.	21.9	90	54	0.47	I/R	78.66	6188	0.076	1.226	0.093
						70	55	0.70	I/R	70.01	4902	0.144	1.164	0.167
						75	54	0.89	I/R	71.81	5157	0.173	1.177	0.204
R71814	8.14-8.24 (8.14-8.24)	C	C26436	CHALK.	23.1	100	99	0.85	D/PL	99.00	9801	0.087	1.360	0.118
						99	54	1.10	A/PD	82.50	6807	0.161	1.253	0.202
						99	49	0.51	A/PD	78.59	6176	0.083	1.226	0.101
R71814	13.20-13.33 (13.20-13.33)	C	C26438	CHALK.	25.6	100	100	1.50	D/PL	100.00	10000	0.150	1.366	0.205
						100	59	1.33	A/PD	86.67	7512	0.177	1.281	0.227
						100	59	1.00	A/PD	86.67	7512	0.133	1.281	0.170
R71814	24.80-25.00 (24.80-25.00)	C	C26441	CHALK.	26.8	100	100	0.55	D/PL	100.00	10000	0.055	1.366	0.076
						100	100	1.23	D/PL	100.00	10000	0.123	1.366	0.167
						100	89	1.25	A/PD	106.45	11332	0.110	1.405	0.155
R71815	14.51-14.62 (14.51-14.62)	C	C26469	CHALK.	24.9	100	100	0.71	D/PL	100.00	10000	0.071	1.366	0.098
						100	64	1.08	A/PD	90.27	8149	0.132	1.305	0.172
						100	61	1.03	A/PD	88.13	7767	0.133	1.291	0.171
R71815	21.70-22.02 (21.70-22.02)	C	C26768	CHALK.	25.4	100	100	1.69	D/PL	100.00	10000	0.169	1.366	0.230
						100	100	1.92	D/PL	100.00	10000	0.192	1.366	0.262
						100	89	1.70	A/PD	106.45	11332	0.150	1.405	0.211
						100	92	1.86	A/PD	108.23	11714	0.159	1.416	0.225

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LABORATORY RESULTS - Point Load Strength Determination

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					w	W	D	Fail Load	Test Type/ Direction	De	De^2	Is	F	Is_{50}
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	%	mm	mm	kN		mm	mm^2	MN/m^2		MN/m^2
R71815	32.10-32.22 (32.10-32.22)	C	C26717	CHALK.	25.1	100	101	1.14	D/PL	101.00	10201	0.112	1.372	0.153
						101	69	1.62	A/PD	94.20	8873	0.183	1.330	0.243
						101	68	1.69	A/PD	93.51	8745	0.193	1.325	0.256
R71815	43.63-43.79 (43.63-43.79)	C	C26719	CHALK.	21.6	100	99	1.93	D/PL	99.00	9801	0.197	1.360	0.268
						99	88	2.56	A/PD	105.32	11092	0.230	1.398	0.322
						99	88	2.52	A/PD	105.32	11092	0.227	1.398	0.318
R71816	6.15-6.23 (6.15-6.23)	C	C26445	CHALK.	27.9	100	84	0.59	A/PD	103.42	10695	0.055	1.387	0.077
R71816	12.34-12.52 (12.34-12.52)	C	C26447	CHALK.	26.1	100	100	0.49	D/PL	100.00	10000	0.049	1.366	0.067
						100	76	0.63	A/PD	98.37	9677	0.065	1.356	0.088
						100	57	0.54	A/PD	85.19	7257	0.075	1.271	0.095
R71816	24.34-24.67 (24.34-24.67)	C	C26476	CHALK.	26.3	100	100	1.11	D/PL	100.00	10000	0.111	1.366	0.151
						100	100	1.23	D/PL	100.00	10000	0.123	1.366	0.168
						100	91	1.90	A/PD	107.64	11586	0.164	1.412	0.232
						100	87	1.52	A/PD	105.25	11077	0.137	1.398	0.192
R71816	29.87-30.21 (29.87-30.21)	C	C26475	CHALK.	26.8	100	100	1.37	D/PL	100.00	10000	0.137	1.366	0.188
						100	100	1.11	D/PL	100.00	10000	0.111	1.366	0.151
						100	91	1.19	A/PD	107.64	11586	0.102	1.412	0.145
						100	67	1.33	A/PD	92.36	8531	0.156	1.318	0.206
R71818	4.45-4.54 (4.45-4.54)	C	C25860	CHALK.	25.2	100	98	0.59	D/PL	98.00	9604	0.061	1.354	0.083
						98	49	0.88	A/PD	78.19	6114	0.144	1.223	0.176
						98	51	1.12	A/PD	79.77	6364	0.175	1.234	0.216
R71818	7.55-7.62 (7.55-7.62)	C	C25862	CHALK.	21.7	98	98	0.74	D/PL	98.00	9604	0.077	1.354	0.105
						98	51	1.13	A/PD	79.77	6364	0.177	1.234	0.219
						98	51	1.04	A/PD	79.77	6364	0.164	1.234	0.202
R71818	10.10-10.17 (10.10-10.17)	C	C25867	CHALK.	21.2	98	48	0.92	A/PD	77.39	5989	0.154	1.217	0.187
R71818	35.50-35.87 (35.50-35.87)	C	C25848	CHALK.	24.6	100	100	1.59	D/PL	100.00	10000	0.159	1.366	0.217
						100	100	1.37	D/PL	100.00	10000	0.137	1.366	0.187
						100	99	2.34	A/PD	112.27	12605	0.186	1.439	0.267
						100	89	2.53	A/PD	106.45	11332	0.223	1.405	0.314
R71819	5.50-5.62 (5.50-5.62)	C	C25855	CHALK.	22.5	110	75	0.88	I/R	102.49	10504	0.083	1.381	0.115
						75	54	0.60	I/R	71.81	5157	0.116	1.177	0.137

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LABORATORY RESULTS - Point Load Strength Determination

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A(II) **Project No:** PC197626

Sample					w	W	D	Fail Load	Test Type/ Direction	De	De^2	Is	F	Is_{50}
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	%	mm	mm	kN		mm	mm^2	MN/m^2		MN/m^2
R71819	8.47-8.60 (8.47-8.60)	C	C25857	CHALK.	22.7	120	78	0.88	I/R	109.17	11918	0.074	1.421	0.105
						94	61	0.85	I/R	85.44	7301	0.116	1.273	0.147
R71819	20.00-20.15 (20.00-20.15)	C	C25851	CHALK.	24.2	99	97	1.03	D/PL	97.00	9409	0.109	1.347	0.147
						97	69	1.12	A/PD	92.31	8522	0.131	1.318	0.173
						97	68	1.21	A/PD	91.64	8398	0.144	1.313	0.189
R71819	30.17-30.47 (30.17-30.47)	C	C25943	CHALK.	24.8	100	100	1.40	D/PL	100.00	10000	0.140	1.366	0.192
						100	100	1.06	D/PL	100.00	10000	0.106	1.366	0.145
						100	79	1.39	A/PD	100.29	10059	0.138	1.368	0.189
						100	69	1.19	A/PD	93.73	8785	0.136	1.327	0.180
R71820	3.72-3.85 (3.72-3.85)	C	C25896	CHALK.	23.5	120	89	1.63	I/R	116.61	13598	0.120	1.464	0.175
R71820	13.41-13.57 (13.41-13.57)	C	C25899	CHALK.	27.1	89	85	0.39	D/PL	85.00	7225	0.054	1.270	0.069
						85	57	0.23	A/PD	78.54	6169	0.037	1.225	0.046
						85	58	0.26	A/PD	79.23	6277	0.041	1.230	0.051
R71820	22.40-22.56 (22.40-22.56)	C	C25937	CHALK.	23.2	100	101	1.22	D/PL	101.00	10201	0.120	1.372	0.164
						101	81	1.42	A/PD	102.06	10416	0.136	1.379	0.188
						101	67	1.30	A/PD	92.82	8616	0.150	1.321	0.199
R71820	33.05-33.25 (33.05-33.25)	C	C25942	CHALK.	23.9	100	101	1.43	D/PL	101.00	10201	0.140	1.372	0.192
						101	89	2.06	A/PD	106.98	11445	0.180	1.408	0.254
						101	88	2.07	A/PD	106.38	11317	0.183	1.405	0.257
STP7140 6	1.20 (1.20)	B	C26837	CHALK.	18.7	50	28	0.34	I/R	42.22	1783	0.190	0.927	0.176
						55	29	0.33	I/R	45.06	2031	0.161	0.954	0.153
						60	27	0.41	I/R	45.42	2063	0.200	0.958	0.191
						60	29	0.33	I/R	47.07	2215	0.149	0.973	0.145
						40	28	0.23	I/R	37.76	1426	0.164	0.881	0.145

Remarks AGS

Test Type D - Diametral, A - Axial, I - Lump or Irregular Test
Direction PL - parallel to planes of weakness, R - Random or unknown orientation, PD - perpendicular to planes of weakness
Fail Load UF - unacceptable failure
For Standards followed see Laboratory Test Certificate

GEOTECHNICS
geotechnical and geoenvironmental specialists

Certificate of Analysis

Certificate Number 19-17731

16-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-17731

Client Reference PC197626

Order No AUTH-OL22710

Contract Title A303 Amesbury to Berwick Down

Description One Soil sample.

Date Received 10-Sep-19

Date Started 10-Sep-19

Date Completed 16-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17731
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1561151
Sample ID	R71818
Depth	1.00
Other ID	
Sample Type	D
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	15

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

Information in Support of the Analytical Results

Our Ref 19-17731
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1561151	R71818 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-17732

16-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-17732

Client Reference PC197626

Order No AUTH-OL22711

Contract Title A303 Amesbury to Berwick Down

Description 2 Soil samples.

Date Received 10-Sep-19

Date Started 10-Sep-19

Date Completed 16-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17732
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1561152	1561153
Sample ID	R71814	R71819
Depth	10.74-10.88	0.50-0.80
Other ID		
Sample Type	SOIL	B
Sampling Date	n/s	n/s
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Inorganics					
pH	DETSC 2008#		pH	8.9	8.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	13	13

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

Information in Support of the Analytical Results

Our Ref 19-17732
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1561152	R71814 10.74-10.88 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1561153	R71819 0.50-0.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-18285

20-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-18285

Client Reference PC197626

Order No AUTH-OL22787

Contract Title A303 Amesbury to Berwick Down

Description One Soil sample.

Date Received 17-Sep-19

Date Started 17-Sep-19

Date Completed 20-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18285
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1564541
Sample ID	R71820
Depth	4.85-5.00
Other ID	
Sample Type	C
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	11.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	37

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

Information in Support of the Analytical Results

Our Ref 19-18285
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1564541	R71820 4.85-5.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-18290
	20-Sep-19
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP
Our Reference	19-18290
Client Reference	PC197626
Order No	AUTH-OL22788
Contract Title	A303 Amesbury to Berwick Down
Description	One Soil sample.
Date Received	17-Sep-19
Date Started	17-Sep-19
Date Completed	20-Sep-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18290
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1564548
Sample ID	R71815
Depth	0.60-0.80
Other ID	
Sample Type	B
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	13

Information in Support of the Analytical Results

Our Ref 19-18290
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1564548	R71815 0.60-0.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-18426

23-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-18426

Client Reference PC197626

Order No AUTH-OL22824

Contract Title A303 Amesbury to Berwick Down

Description One Soil sample.

Date Received 18-Sep-19

Date Started 18-Sep-19

Date Completed 23-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18426
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1565471
Sample ID	R71812
Depth	16.50-16.60
Other ID	
Sample Type	C
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	18

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

Information in Support of the Analytical Results

Our Ref 19-18426
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1565471	R71812 16.50-16.60 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-18428

23-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-18428

Client Reference PC197626

Order No AUTH-OL22825

Contract Title A303 Amesbury to Berwick Down

Description One Soil sample.

Date Received 18-Sep-19

Date Started 18-Sep-19

Date Completed 23-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18428
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1565482
Sample ID	R71807
Depth	3.30-3.40
Other ID	
Sample Type	C
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	19

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

Information in Support of the Analytical Results

Our Ref 19-18428
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1565482	R71807 3.30-3.40 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-18717-1
	14-Oct-19
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP
Our Reference	19-18717-1
Client Reference	PC197626
Order No	AUTH-OL22855
Contract Title	A303 Amesbury to Berwick Down
Description	One Soil sample.
Date Received	20-Sep-19
Date Started	20-Sep-19
Date Completed	14-Oct-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	**This report supersedes 19-18717, amendments.** Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis

Soil Samples

Our Ref 19-18717-1
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1567189
Sample ID	R71806
Depth	9.51-9.60
Other ID	
Sample Type	C
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	12

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

Information in Support of the Analytical Results

Our Ref 19-18717-1
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1567189	R71806 9.51-9.60 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-18938

30-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-18938

Client Reference PC197626

Order No AUTH-OL22885

Contract Title A303 Amesbury to Berwick Down

Description One Soil sample.

Date Received 24-Sep-19

Date Started 24-Sep-19

Date Completed 30-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18938
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1568500
Sample ID	R71808
Depth	1.00
Other ID	
Sample Type	D
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	37

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

Information in Support of the Analytical Results

Our Ref 19-18938
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1568500	R71808 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-18939

30-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-18939

Client Reference PC197626

Order No AUTH-OL22895

Contract Title A303 Amesbury to Berwick Down

Description 3 Soil samples.

Date Received 24-Sep-19

Date Started 24-Sep-19

Date Completed 30-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18939
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1568501	1568503
Sample ID	STPT71401	STP70801
Depth	0.50	1.00
Other ID		
Sample Type	D	D
Sampling Date	n/s	n/s
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Inorganics					
pH	DETSC 2008#		pH	8.2	8.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	15	21

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

Summary of Asbestos Analysis
Soil Samples

Our Ref 19-18939
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1568502	STP70801 1.00	SOIL	NAD	none	A Christodoulou
1568503	STP70801 1.00	SOIL	NAD	none	A Christodoulou

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

Information in Support of the Analytical Results

Our Ref 19-18939
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1568501	STPT71401 0.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1568502	STP70801 1.00 SOIL		PT 1L		
1568503	STP70801 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

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

Disposal

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

Certificate of Analysis

Certificate Number 19-19177

03-Oct-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-19177

Client Reference PC197626

Order No AUTH-OL22943

Contract Title A303 Amesbury to Berwick Down

Description One Soil sample.

Date Received 26-Sep-19

Date Started 26-Sep-19

Date Completed 03-Oct-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis

Soil Samples

Our Ref 19-19177
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1570408
Sample ID	R71213
Depth	1.00
Other ID	
Sample Type	SOIL
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10

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

Information in Support of the Analytical Results

Our Ref 19-19177
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1570408	R71213 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-19806	18-Oct-19
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP	

Our Reference	19-19806
Client Reference	PC197626
Order No	AUTH-OL23011
Contract Title	A303 Amesbury to Berwick Down
Description	3 Soil samples.
Date Received	01-Oct-19
Date Started	03-Oct-19
Date Completed	18-Oct-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-19806
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

			Lab No	1575316	1575317	1575318
			Sample ID	R71211	R71802	R71802
			Depth	4.80-4.90	13.77-13.94	17.90-18.20
			Other ID			
			Sample Type	C	C	C
			Sampling Date	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Inorganics						
pH	DETSC 2008#		pH	8.9	8.9	8.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	110	11

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

Information in Support of the Analytical Results

Our Ref 19-19806
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1575316	R71211 4.80-4.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1575317	R71802 13.77-13.94 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1575318	R71802 17.90-18.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-19807

11-Oct-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-19807

Client Reference PC197626

Order No AUTH-OL23010

Contract Title A303 Amesbury to Berwick Down

Description 3 Soil samples.

Date Received 01-Oct-19

Date Started 03-Oct-19

Date Completed 11-Oct-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
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Summary of Chemical Analysis
Soil Samples

Our Ref 19-19807
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

			Lab No	1575319	1575320	1575321
			Sample ID	STP70102	STP71604	STP72701
			Depth	1.00	3.00	2.50
			Other ID			
			Sample Type	D	D	B
			Sampling Date	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Inorganics						
pH	DETSC 2008#		pH	8.8	8.6	8.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	35	19

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

Information in Support of the Analytical Results

Our Ref 19-19807
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1575319	STP70102 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1575320	STP71604 3.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1575321	STP72701 2.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-20037

18-Oct-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-20037

Client Reference PC197626

Order No AUTH-OL23077

Contract Title A303 Amesbury to Berwick Down

Description 5 Soil samples.

Date Received 07-Oct-19

Date Started 07-Oct-19

Date Completed 18-Oct-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-20037
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

			Lab No	1576790	1576791	1576792	1576793	1576794
			Sample ID	R71202	R71204	R71209	WS71502	WS71504
			Depth	1.00	6.20-6.40	5.57-5.73	2.00-2.90	0.70-1.20
			Other ID					
			Sample Type	D	C	C	B	B
			Sampling Date	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Inorganics								
pH	DETSC 2008#		pH	8.5	8.9	8.8	8.9	8.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	11	12	< 10	11	< 10

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

Information in Support of the Analytical Results

Our Ref 19-20037
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1576790	R71202 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1576791	R71204 6.20-6.40 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1576792	R71209 5.57-5.73 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1576793	WS71502 2.00-2.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1576794	WS71504 0.70-1.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-20039
	15-Oct-19
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP
Our Reference	19-20039
Client Reference	PC197626
Order No	AUTH-OL23078
Contract Title	A303 Amesbury to Berwick Down
Description	4 Core samples.
Date Received	07-Oct-19
Date Started	08-Oct-19
Date Completed	15-Oct-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Core Samples

Our Ref 19-20039
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

			Lab No	1576799	1576800	1576801	1576802
			Sample ID	R71201	R71803	R71810	R71811
			Depth	7.56-7.63	11.70-12.15	33.15-33.50	12.90-13.00
			Other ID				
			Sample Type	C	D	C	C
			Sampling Date	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Inorganics							
pH	DETSC 2008#		pH	8.9	8.7	8.7	8.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	< 10	< 10	< 10

Information in Support of the Analytical Results

Our Ref 19-20039
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1576799	R71201 7.56-7.63 CORE		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1576800	R71803 11.70-12.15 CORE		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1576801	R71810 33.15-33.50 CORE		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1576802	R71811 12.90-13.00 CORE		PG	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub G-Bag

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-20456	21-Oct-19
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP	

Our Reference	19-20456
Client Reference	PC197626
Order No	AUTH-OL23119
Contract Title	A303 Amesbury to Berwick Down
Description	2 Soil samples.
Date Received	11-Oct-19
Date Started	11-Oct-19
Date Completed	21-Oct-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-20456
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1579735	1579736
Sample ID	R71206	R71804
Depth	0.70-1.20	16.08-16.40
Other ID		
Sample Type	B	C
Sampling Date	09/10/19	09/10/19
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Inorganics					
pH	DETSC 2008#		pH	8.9	9.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	18

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

Information in Support of the Analytical Results

Our Ref 19-20456
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1579735	R71206 0.70-1.20 SOIL	09/10/19	PT 1L		
1579736	R71804 16.08-16.40 SOIL	09/10/19	PT 1L		

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-20457

17-Oct-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-20457

Client Reference PC197626

Order No AUTH-OL23120

Contract Title A303 Amesbury to Berwick Down

Description One Soil sample.

Date Received 11-Oct-19

Date Started 11-Oct-19

Date Completed 17-Oct-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-20457
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1579737
Sample ID	R71208
Depth	6.80-6.92
Other ID	
Sample Type	SOIL
Sampling Date	09/10/19
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	21

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

Information in Support of the Analytical Results

Our Ref 19-20457
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1579737	R71208 6.80-6.92 SOIL	09/10/19	PT 1L		

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-20708
	21-Oct-19
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP
Our Reference	19-20708
Client Reference	PC197626
Order No	AUTH-OL23141
Contract Title	A303 AMESBURY TO BERWICK
Description	One Soil sample.
Date Received	14-Oct-19
Date Started	15-Oct-19
Date Completed	21-Oct-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-20708
Client Ref PC197626
Contract Title A303 AMESBURY TO BERWICK

Lab No	1581946
Sample ID	R71205
Depth	1.00
Other ID	
Sample Type	SOIL
Sampling Date	08/10/19
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	12

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

Information in Support of the Analytical Results

Our Ref 19-20708
Client Ref PC197626
Contract A303 AMESBURY TO BERWICK

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1581946	R71205 1.00 SOIL	08/10/19	PT 1L		

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-20709
	21-Oct-19
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP
Our Reference	19-20709
Client Reference	PC197626
Order No	AUTH-OL23142
Contract Title	A303 AMESBURY TO BERWICK
Description	2 Soil samples.
Date Received	14-Oct-19
Date Started	15-Oct-19
Date Completed	21-Oct-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-20709
Client Ref PC197626
Contract Title A303 AMESBURY TO BERWICK

Lab No	1581947	1581948
Sample ID	R71207	R71212
Depth	14.00	11.00
Other ID		
Sample Type	C	C
Sampling Date	n/s	n/s
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Inorganics					
pH	DETSC 2008#		pH	8.9	8.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	11

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

Information in Support of the Analytical Results

Our Ref 19-20709
Client Ref PC197626
Contract A303 AMESBURY TO BERWICK

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1581947	R71207 14.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1581948	R71212 11.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-20835

25-Oct-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-20835

Client Reference PC197626

Order No AUTH-OL23184

Contract Title A303 Amesbury to Berwick Down

Description One Soil sample.

Date Received 16-Oct-19

Date Started 17-Oct-19

Date Completed 25-Oct-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-20835
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down

Lab No	1582903
Sample ID	STP71404
Depth	0.50
Other ID	
Sample Type	B
Sampling Date	15/10/19
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	8.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	17

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

Information in Support of the Analytical Results

Our Ref 19-20835
Client Ref PC197626
Contract A303 Amesbury to Berwick Down

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1582903	STP71404 0.50 SOIL	15/10/19	PT 1L		

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71818	-	25.40-25.83	White CHALK	25	100	2.01	1.60	98.60	257.20	2.6	34.5	4.52		23/09/19	
R71818	-	28.54-28.79	White CHALK	24	98.8	2.03	1.64	99.20	199.50	2.0	28.8	3.73		23/09/19	
R71818	-	33.02-33.37	White CHALK	27	100	2.04	1.61	99.90	267.60	2.7	29.1	3.71		23/09/19	
R71818	-	42.06-42.50	White CHALK	23	98.5	2.04	1.66	99.90	264.90	2.7	41.2	5.26		23/09/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29863

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS AND POISSON'S RATIO

Borehole Ref.:	R71818
Sample Ref.:	-
Depth (m):	25.40-25.83

Description:
White CHALK

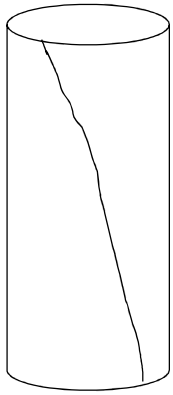
LF0879C (1000kN) compression frame used

Diameter	98.60 mm
Height	257.20 mm
Bulk Density	2.01 Mg/m³
Dry Density	1.60 Mg/m³
Water Content	25 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

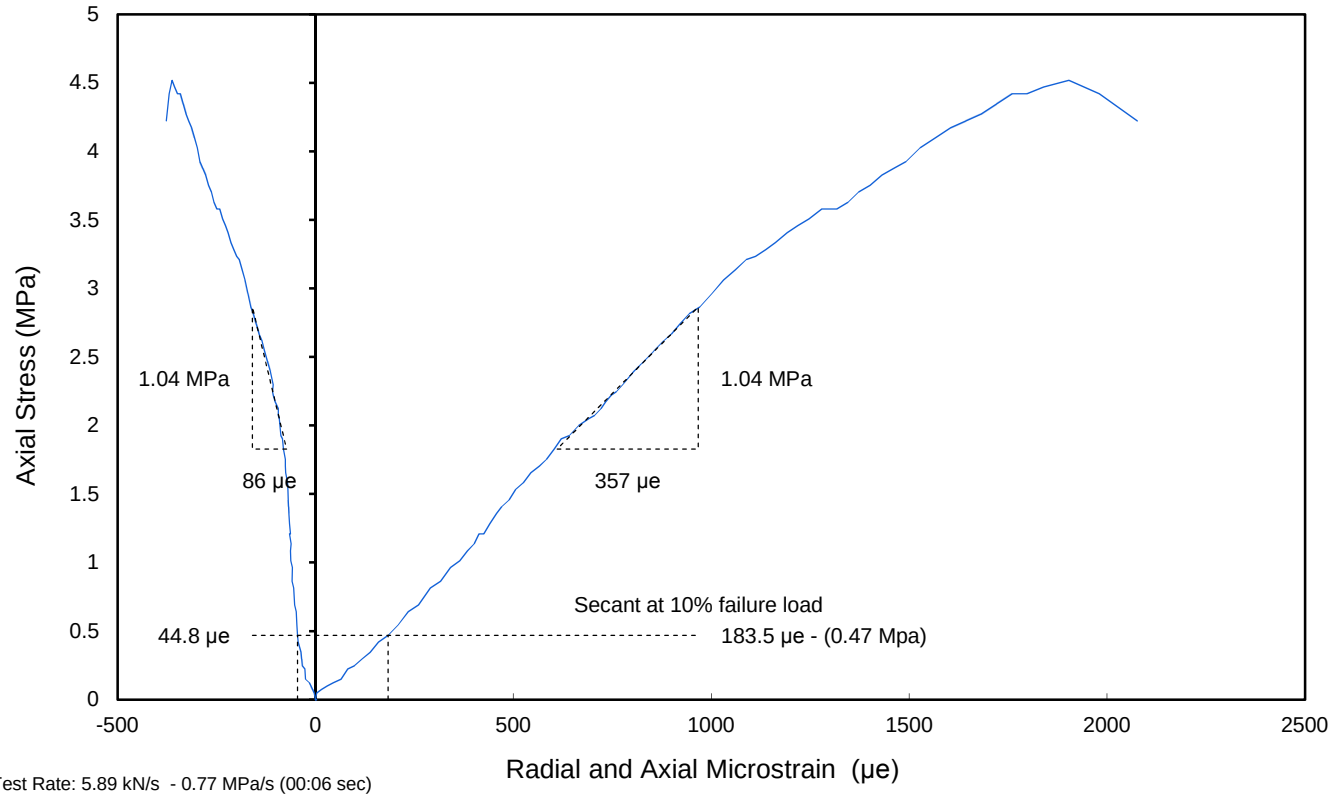
Date tested: 23/09/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 80°

Sample type	C

Test results

Unconfined Compressive Strength	4.52 MPa
Young's Modulus (tangential at 50% failure load)	2.91 GPa
Poisson's Ratio (tangential at 50% failure load)	0.24
Young's Modulus (secant at 10% failure load)	2.56 GPa
Poisson's Ratio (secant at 10% failure load)	0.24



Test Rate: 5.89 kN/s - 0.77 MPa/s (00:06 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29863

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71818
Sample Ref.:	-
Depth (m):	28.54-28.79

Description:
White CHALK

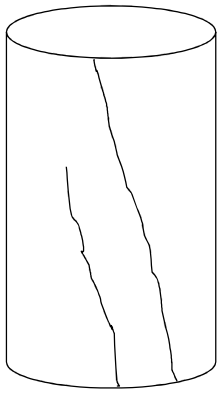
LF0879C (1000kN) compression frame used

Diameter	99.20 mm
Height	199.50 mm
Bulk Density	2.03 Mg/m³
Dry Density	1.64 Mg/m³
Water Content	24 %

Degree of Saturation: 98.8 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 23/09/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 85°

Sample type	C

Test results

Unconfined Compressive Strength	3.73 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29863

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71818
Sample Ref.:	-
Depth (m):	33.02-33.37

Description:
White CHALK

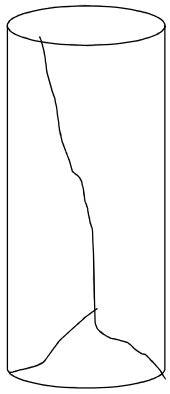
LF0879C (1000kN) compression frame used

Diameter	99.90 mm
Height	267.60 mm
Bulk Density	2.04 Mg/m³
Dry Density	1.61 Mg/m³
Water Content	27 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Y-Shaped



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 80°

Date tested: 23/09/2019

Test results

Unconfined Compressive Strength	3.71 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29863

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71818
Sample Ref.:	-
Depth (m):	42.06-42.50

Description:
White CHALK

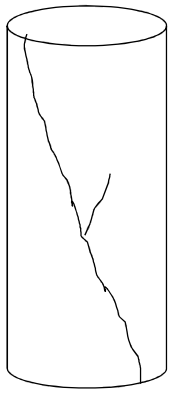
Diameter	99.90 mm
Height	264.90 mm
Bulk Density	2.04 Mg/m³
Dry Density	1.66 Mg/m³
Water Content	23 %

Degree of Saturation: 98.5 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 75°

Sample type	C

Date tested: 23/09/2019

Test results

Unconfined Compressive Strength	5.26 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29863

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71814		17.08-17.29	White CHALK	24	96.8	2.01	1.62	101.20	202.60	2.0	13.1	1.63		23/09/19	
R71814		27.60-27.90	White CHALK	24	100	2.04	1.64	100.80	246.20	2.4	11.6	1.45		23/09/19	
R71814		33.16-33.50	White CHALK	26	97.5	1.97	1.56	101.30	263.20	2.6	32.8	4.07		23/09/19	
R71819		17.20-17.40	White CHALK	24	94.6	1.99	1.61	99.90	183.10	1.8	22.0	2.81		23/09/19	
R71819		25.44-25.64	White CHALK	24	90.4	1.96	1.59	99.70	203.50	2.0	26.7	3.42		23/09/19	
R71819		33.94-34.38	White CHALK	24	100	2.03	1.64	100.30	265.90	2.7	30.1	3.81		23/09/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29864

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71814
Sample Ref.:	-
Depth (m):	17.08-17.29

Description:
White CHALK

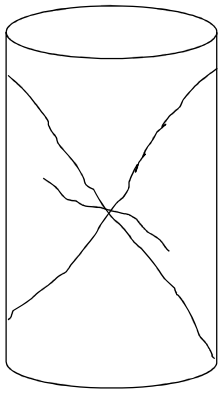
Diameter	101.20 mm
Height	202.60 mm
Bulk Density	2.01 Mg/m³
Dry Density	1.62 Mg/m³
Water Content	24 %

Degree of Saturation: 96.8 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Multiple fracturing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 23/09/2019

Test results

Unconfined Compressive Strength	1.63 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29864

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71814
Sample Ref.:	-
Depth (m):	27.60-27.90

Description:
White CHALK

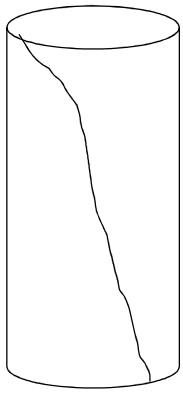
LF0879C (1000kN) compression frame used

Diameter	100.80 mm
Height	246.20 mm
Bulk Density	2.04 Mg/m³
Dry Density	1.64 Mg/m³
Water Content	24 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Date tested: 23/09/2019

Test results

Unconfined Compressive Strength	1.45 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29864

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71814
Sample Ref.:	-
Depth (m):	33.16-33.50

Description:
White CHALK

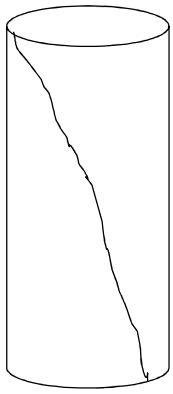
LF0879C (1000kN) compression frame used

Diameter	101.30 mm
Height	263.20 mm
Bulk Density	1.97 Mg/m³
Dry Density	1.56 Mg/m³
Water Content	26 %

Degree of Saturation: 97.5 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Date tested: 23/09/2019

Test results

Unconfined Compressive Strength	4.07 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29864

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71819
Sample Ref.:	-
Depth (m):	17.20-17.40

Description:
White CHALK

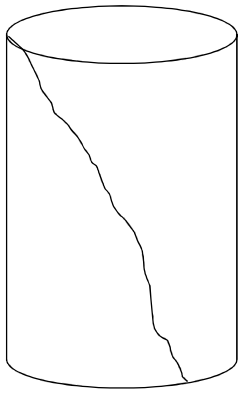
LF0879C (1000kN) compression frame used

Diameter	99.90 mm
Height	183.10 mm
Bulk Density	1.99 Mg/m³
Dry Density	1.61 Mg/m³
Water Content	24 %

Degree of Saturation: 94.6 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 23/09/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	C

Test results

Unconfined Compressive Strength	2.81 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

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C Clergeaud (Snr. Geologist)

Date: 25/09/2019

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71819
Sample Ref.:	-
Depth (m):	25.44-25.64

Description:
White CHALK

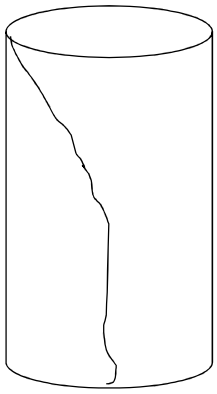
Diameter	99.70 mm
Height	203.50 mm
Bulk Density	1.96 Mg/m³
Dry Density	1.59 Mg/m³
Water Content	24 %

Degree of Saturation: 90.4 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 23/09/2019

Test results

Unconfined Compressive Strength	3.42 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71819
Sample Ref.:	-
Depth (m):	33.94-34.38

Description:
White CHALK

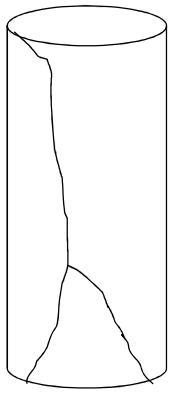
LF0879C (1000kN) compression frame used

Diameter	100.30 mm
Height	265.90 mm
Bulk Density	2.03 Mg/m³
Dry Density	1.64 Mg/m³
Water Content	24 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Y-Shaped



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Date tested: 23/09/2019

Test results

Unconfined Compressive Strength	3.81 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29864

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71815	-	11.65-12.07	White CHALK	26	99.5	1.99	1.58	99.70	254.50	2.6	15.7	2.01		01/10/19	
R71815	-	18.34-18.60	White CHALK	24	100	2.03	1.63	101.10	238.50	2.4	16.7	2.08		01/10/19	
R71815	-	24.85-25.15	White CHALK	26	100	2.01	1.60	100.20	265.90	2.7	25.0	3.17		01/10/19	
R71815	-	37.59-37.89	White CHALK	25	100	2.03	1.62	95.50	265.20	2.8	14.6	2.04		01/10/19	
R71816	-	14.85-15.10	White CHALK	24	100	2.07	1.66	99.90	200.20	2.0	13.8	1.76		01/10/19	
R71816	-	20.50-20.72	White CHALK	26	98.0	1.98	1.58	98.50	196.10	2.0	16.6	2.18		01/10/19	
R71816	-	27.50-27.84	White CHALK	25	97.9	2.00	1.61	99.60	265.40	2.7	28.0	3.59		01/10/19	
R71816	-	33.66-36.12	White CHALK	23	95.9	2.02	1.64	94.50	262.70	2.8	17.4	2.48		01/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29881

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS AND POISSON'S RATIO

Borehole Ref.:	R71815
Sample Ref.:	-
Depth (m):	11.65-12.07

Description:
White CHALK

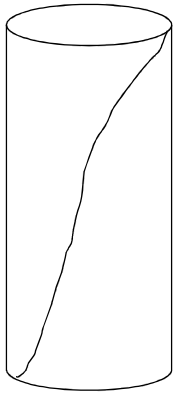
LF0879C (1000kN) compression frame used

Diameter	99.70 mm
Height	254.50 mm
Bulk Density	1.99 Mg/m³
Dry Density	1.58 Mg/m³
Water Content	26 %

Degree of Saturation: 99.5 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

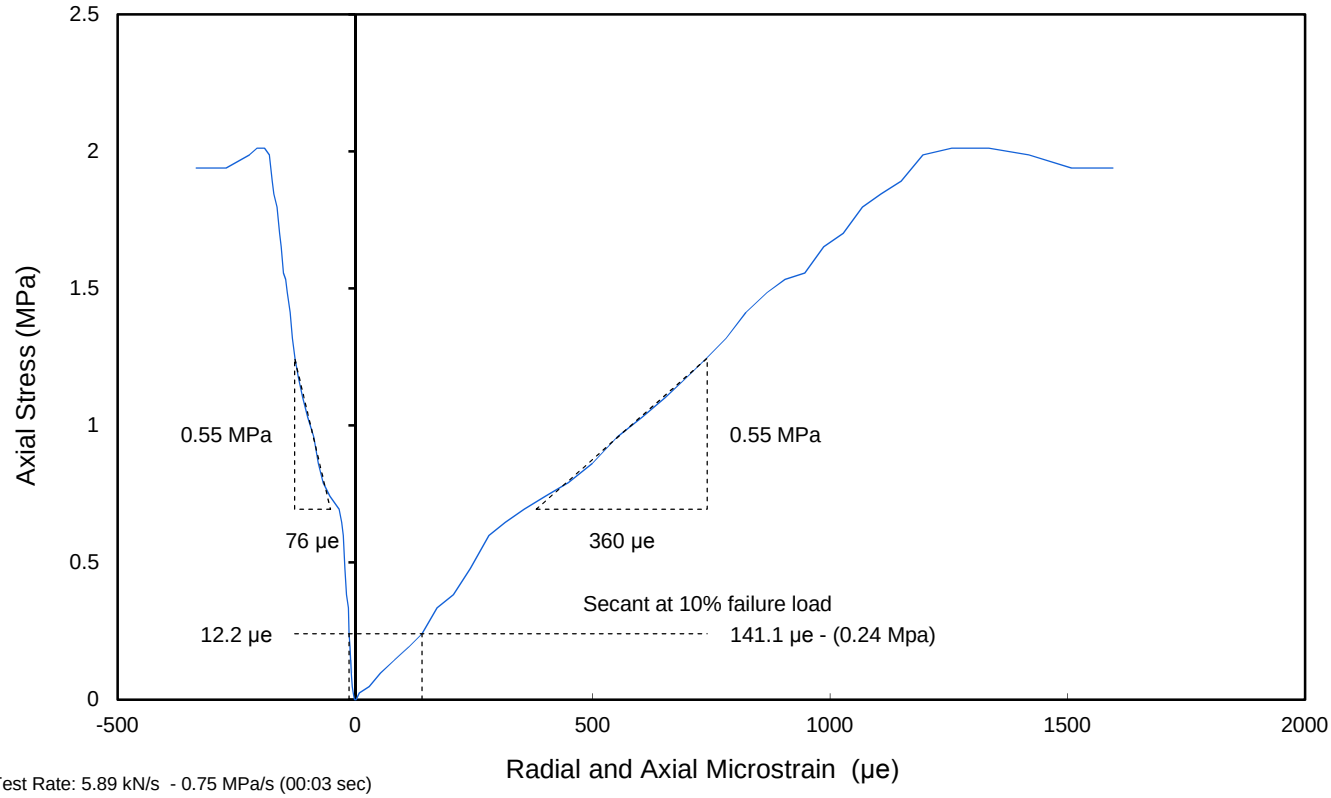
Date tested: 01/10/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 110°

Sample type	C

Test results

Unconfined Compressive Strength	2.01 MPa
Young's Modulus (tangential at 50% failure load)	1.53 GPa
Poisson's Ratio (tangential at 50% failure load)	0.21
Young's Modulus (secant at 10% failure load)	1.7 GPa
Poisson's Ratio (secant at 10% failure load)	0.09



Test Rate: 5.89 kN/s - 0.75 MPa/s (00:03 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29881

Project Name:

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71815
Sample Ref.:	-
Depth (m):	18.34-18.60

Description:
White CHALK

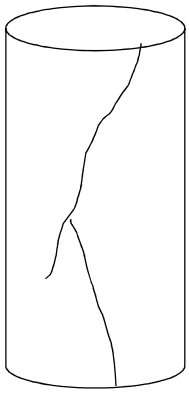
Diameter	101.10 mm
Height	238.50 mm
Bulk Density	2.03 Mg/m³
Dry Density	1.63 Mg/m³
Water Content	24 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 75°

Sample type	C

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	2.08 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29881

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71815
Sample Ref.:	-
Depth (m):	24.85-25.15

Description:
White CHALK

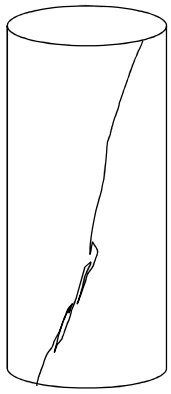
Diameter	100.20 mm
Height	265.90 mm
Bulk Density	2.01 Mg/m³
Dry Density	1.60 Mg/m³
Water Content	26 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 90°

Sample type	**C**

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	3.17 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29881

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71815
Sample Ref.:	-
Depth (m):	37.59-37.89

Description:
White CHALK

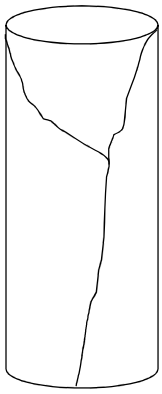
LF0879C (1000kN) compression frame used

Diameter	95.50 mm
Height	265.20 mm
Bulk Density	2.03 Mg/m³
Dry Density	1.62 Mg/m³
Water Content	25 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Y-Shaped



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 80°

Sample type	**C**

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	2.04 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29881

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71816
Sample Ref.:	-
Depth (m):	14.85-15.10

Description:
White CHALK

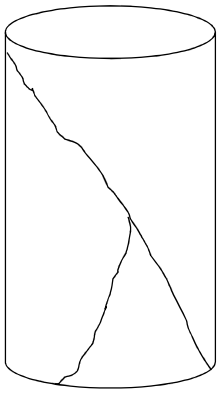
Diameter	99.90 mm
Height	200.20 mm
Bulk Density	2.07 Mg/m³
Dry Density	1.66 Mg/m³
Water Content	24 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Y-Shaped



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 01/10/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 65°

Sample type	**C**

Test results

Unconfined Compressive Strength	1.76 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

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A303 Amesbury to Berwick Down - Phase 7A GI
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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71816
Sample Ref.:	-
Depth (m):	20.50-20.72

Description:
White CHALK

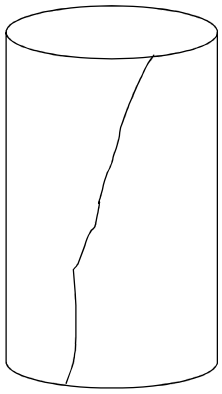
Diameter	98.50 mm
Height	196.10 mm
Bulk Density	1.98 Mg/m³
Dry Density	1.58 Mg/m³
Water Content	26 %

Degree of Saturation: 98.0 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 85°

Sample type	**C**

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	2.18 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29881

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71816
Sample Ref.:	-
Depth (m):	27.50-27.84

Description:
White CHALK

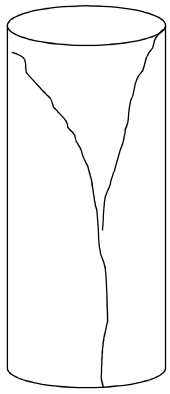
LF0879C (1000kN) compression frame used

Diameter	99.60 mm
Height	265.40 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.61 Mg/m³
Water Content	25 %

Degree of Saturation: 97.9 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Y-Shaped



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 80°

Sample type	**C**

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	3.59 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29881

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71820		10.72-10.94	White CHALK	26	100	2.01	1.59	101.50	202.40	2.0	21.8	2.69		20/09/19	
R71820		14.88-15.10	White CHALK	24	100	2.04	1.65	100.20	202.10	2.0	22.0	2.79		20/09/19	
R71820		20.15-20.45	White CHALK	26	99.6	2.00	1.59	99.10	264.50	2.7	21.2	2.75		20/09/19	
R71820		28.18-28.55	White CHALK	25	100	2.05	1.64	100.00	265.20	2.7	24.5	3.12		20/09/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29915

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS AND POISSON'S RATIO

Borehole Ref.:	R71820
Sample Ref.:	-
Depth (m):	10.72-10.94

Description:
White CHALK

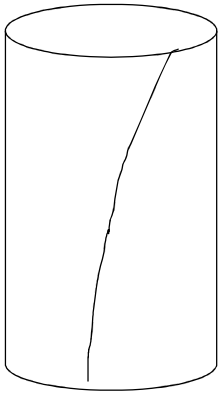
LF0879C (1000kN) compression frame used

Diameter	101.50 mm
Height	202.40 mm
Bulk Density	2.01 Mg/m³
Dry Density	1.59 Mg/m³
Water Content	26 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

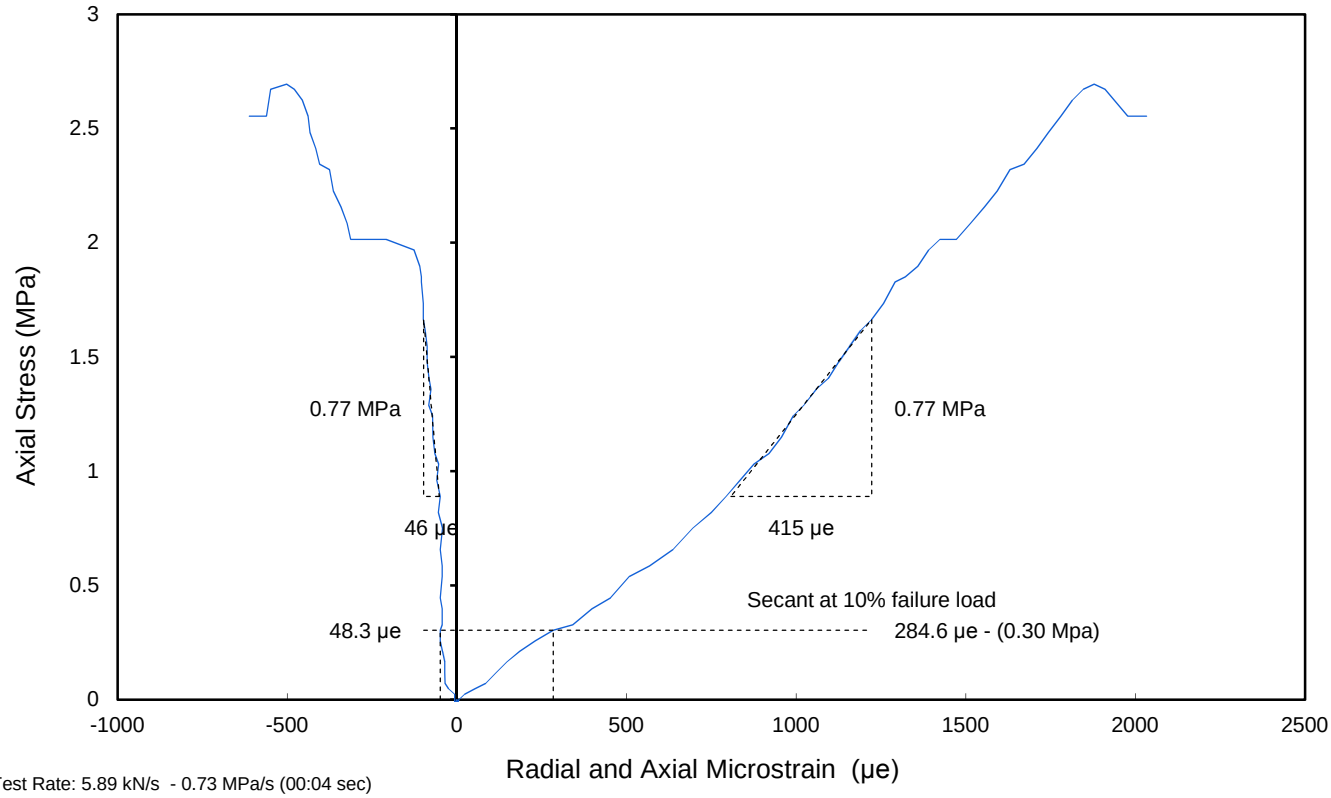
Date tested: 20/09/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 110°

Sample type	C

Test results

Unconfined Compressive Strength	2.69 MPa
Young's Modulus (tangential at 50% failure load)	1.86 GPa
Poisson's Ratio (tangential at 50% failure load)	0.11
Young's Modulus (secant at 10% failure load)	1.07 GPa
Poisson's Ratio (secant at 10% failure load)	0.17



Test Rate: 5.89 kN/s - 0.73 MPa/s (00:04 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29915

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71820
Sample Ref.:	-
Depth (m):	14.88-15.10

Description:
White CHALK

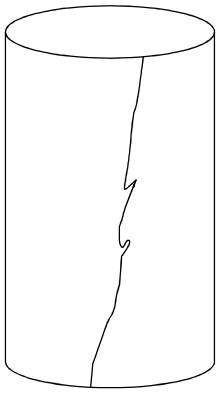
LF0879C (1000kN) compression frame used

Diameter	100.20 mm
Height	202.10 mm
Bulk Density	2.04 Mg/m³
Dry Density	1.65 Mg/m³
Water Content	24 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 95°

Date tested: 20/09/2019

Test results

Unconfined Compressive Strength	2.79 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29915

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71820
Sample Ref.:	-
Depth (m):	20.15-20.45

Description:
White CHALK

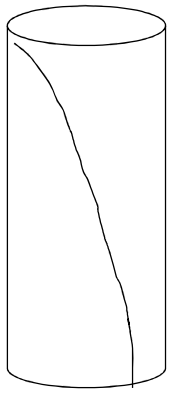
LF0879C (1000kN) compression frame used

Diameter	99.10 mm
Height	264.50 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.59 Mg/m³
Water Content	26 %

Degree of Saturation: 99.6 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 85°

Date tested: 20/09/2019

Test results

Unconfined Compressive Strength	2.75 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29915

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71820
Sample Ref.:	-
Depth (m):	28.18-28.55

Description:
White CHALK

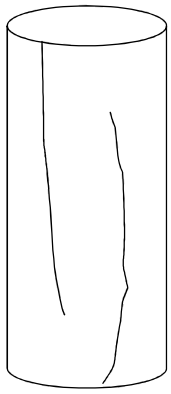
LF0879C (1000kN) compression frame used

Diameter	100.00 mm
Height	265.20 mm
Bulk Density	2.05 Mg/m³
Dry Density	1.64 Mg/m³
Water Content	25 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 85°

Date tested: 20/09/2019

Test results

Unconfined Compressive Strength	3.12 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29915

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71812	-	10.28-10.53	White CHALK	24	100	2.03	1.63	99.70	210.30	2.1	15.6	2		01/10/19	
R71812	-	17.50-17.70	White CHALK	25	98.0	2.00	1.61	97.30	198.50	2.0	20.2	2.72		01/10/19	
R71812	-	25.00-25.35	White CHALK	25	99.9	2.01	1.60	99.60	256.60	2.6	14.8	1.9		01/10/19	
R71812	-	33.48-33.92	White CHALK	23	96.1	2.02	1.64	99.20	252.10	2.5	36.5	4.72		01/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29916

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71812
Sample Ref.:	-
Depth (m):	10.28-10.53

Description:
White CHALK

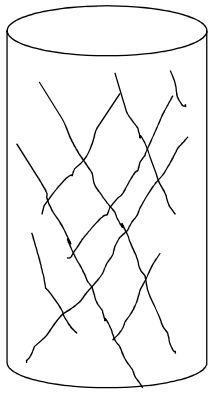
LF0879C (1000kN) compression frame used

Diameter	99.70 mm
Height	210.30 mm
Bulk Density	2.03 Mg/m³
Dry Density	1.63 Mg/m³
Water Content	24 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Explosive



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	2 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29916

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS AND POISSON'S RATIO

Borehole Ref.:	R71812
Sample Ref.:	-
Depth (m):	17.50-17.70

Description:
White CHALK

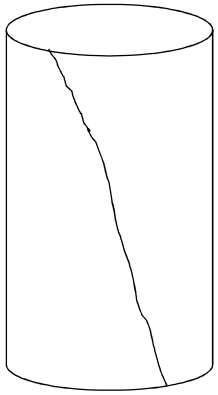
LF0879C (1000kN) compression frame used

Diameter	97.30 mm
Height	198.50 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.61 Mg/m³
Water Content	25 %

Degree of Saturation: 98.0 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

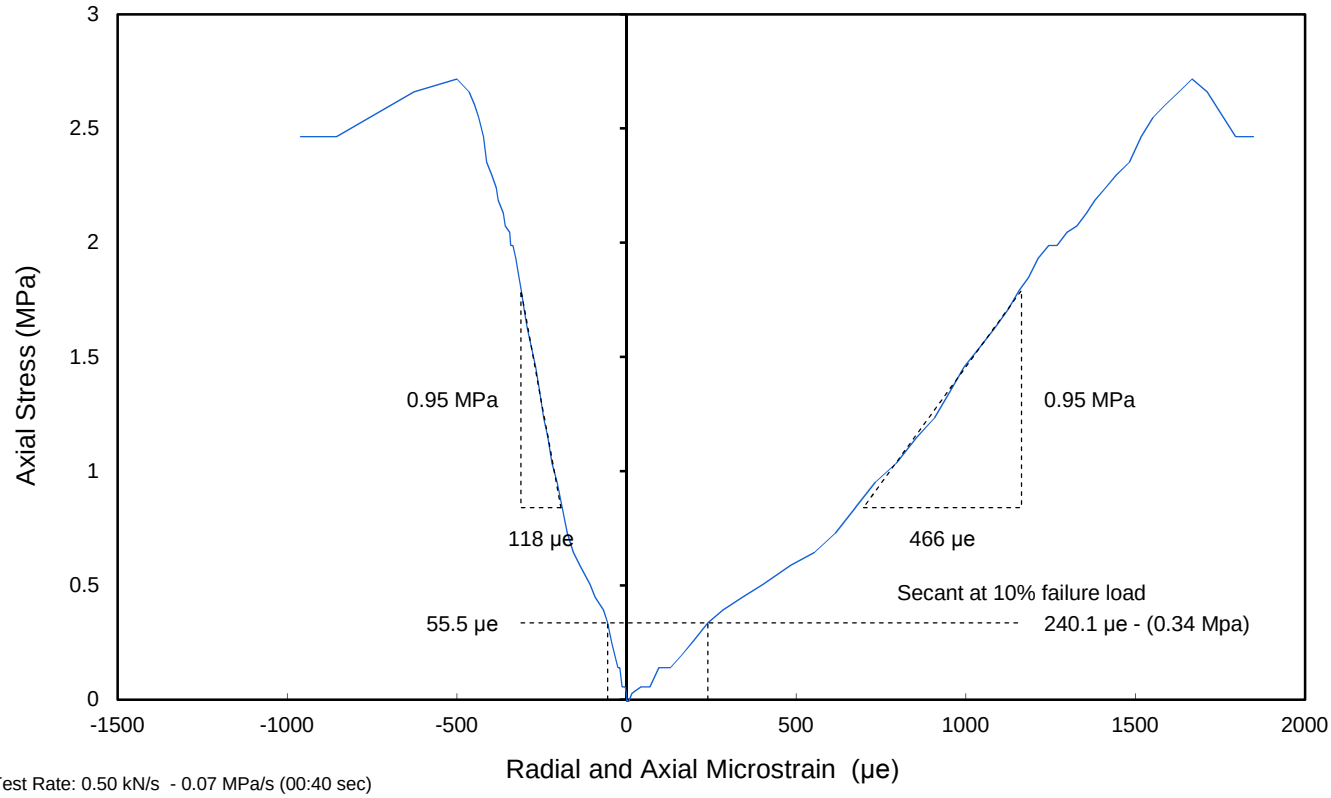
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 60°

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	2.72 MPa
Young's Modulus (tangential at 50% failure load)	2.04 GPa
Poisson's Ratio (tangential at 50% failure load)	0.25
Young's Modulus (secant at 10% failure load)	1.4 GPa
Poisson's Ratio (secant at 10% failure load)	0.23

Sample type	**C**



Test Rate: 0.50 kN/s - 0.07 MPa/s (00:40 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29916

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71812
Sample Ref.:	-
Depth (m):	25.00-25.35

Description:
White CHALK

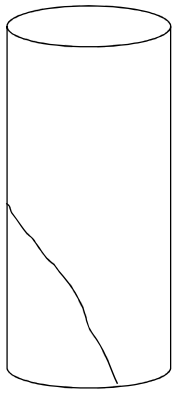
LF0879C (1000kN) compression frame used

Diameter	99.60 mm
Height	256.60 mm
Bulk Density	2.01 Mg/m³
Dry Density	1.60 Mg/m³
Water Content	25 %

Degree of Saturation: 99.9 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 65°

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	1.9 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29916

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71812
Sample Ref.:	-
Depth (m):	33.48-33.92

Description:
White CHALK

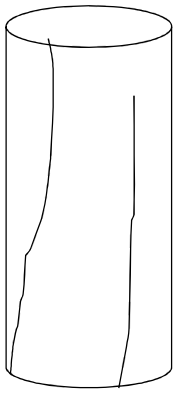
LF0879C (1000kN) compression frame used

Diameter	99.20 mm
Height	252.10 mm
Bulk Density	2.02 Mg/m³
Dry Density	1.64 Mg/m³
Water Content	23 %

Degree of Saturation: 96.1 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 85°

Date tested: 01/10/2019

Test results

Unconfined Compressive Strength	4.72 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 03/10/2019

Project Number:

GEO / 29916

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

BS1377 : Part 2 : 1990 : Clause 3.3

SATURATION MOISTURE CONTENT OF CHALK

Borehole / Trial Pit	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 %	Bulk Density Mg/m³	Dry Density Mg/m³	Saturation Moisture Content %	Porosity %
R71807	16.27-16.64		C	White CHALK	24.2	1.94	1.56	27	42

Notes

Checked and Approved by:

[redacted]

31/10/2019

Project Number:

GEO / 29917

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71807		16.27-16.64	White CHALK	27	99.2	1.98	1.56	100.60	250.80	2.5	19.6	2.47		02/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 04/10/2019

Project Number:

GEO / 29917

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS AND POISSON'S RATIO

Borehole Ref.:	R71807
Sample Ref.:	-
Depth (m):	16.27-16.64

Description:
White CHALK

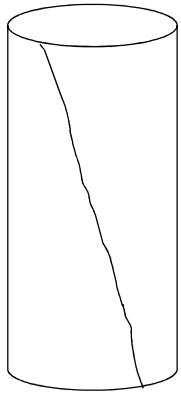
LF0879C (1000kN) compression frame used

Diameter	100.60 mm
Height	250.80 mm
Bulk Density	1.98 Mg/m³
Dry Density	1.56 Mg/m³
Water Content	27 %

Degree of Saturation: 99.2 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

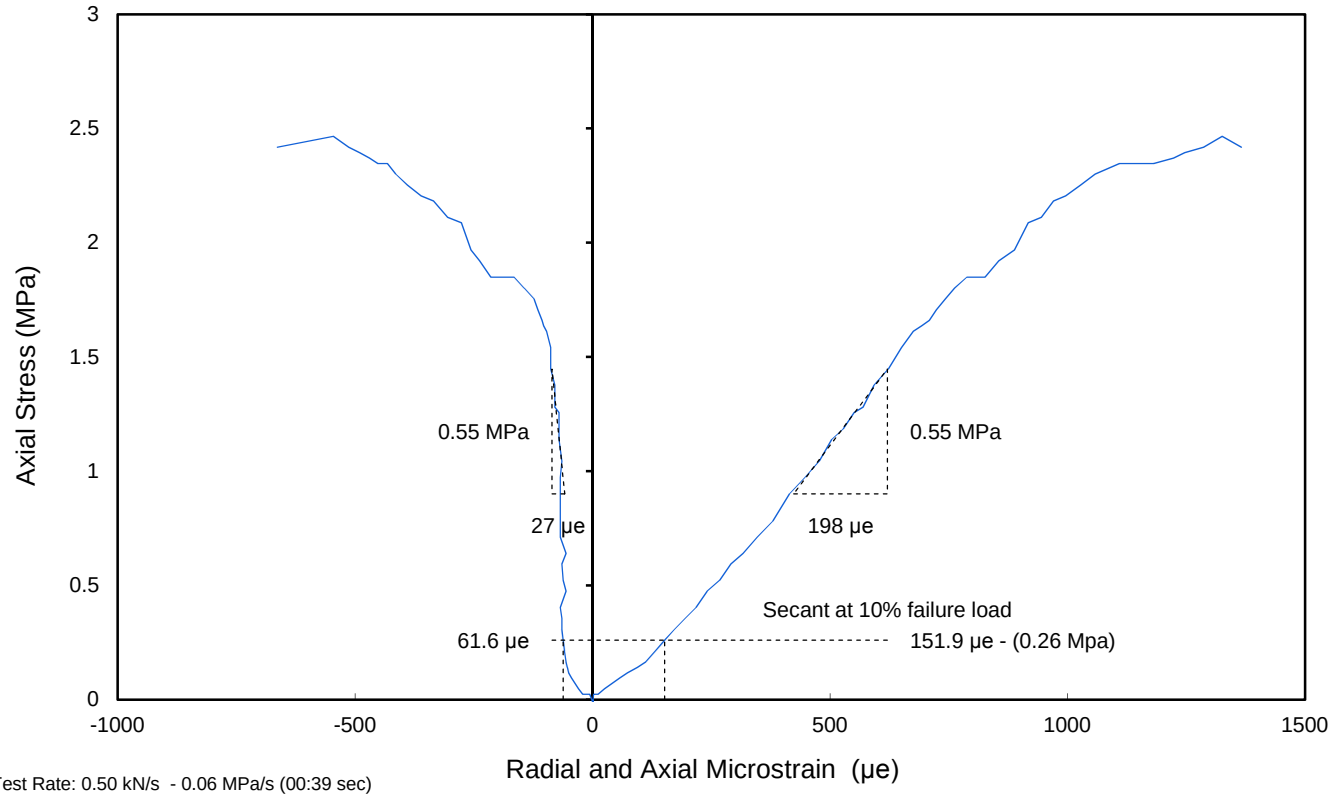
Date tested: 02/10/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	C

Test results

Unconfined Compressive Strength	2.47 MPa
Young's Modulus (tangential at 50% failure load)	2.76 GPa
Poisson's Ratio (tangential at 50% failure load)	0.14
Young's Modulus (secant at 10% failure load)	1.71 GPa
Poisson's Ratio (secant at 10% failure load)	0.41



Test Rate: 0.50 kN/s - 0.06 MPa/s (00:39 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 04/10/2019

Project Number:

GEO / 29917

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71807		25.28-25.74	White CHALK	26	95.7	1.96	1.55	99.80	265.00	2.7	18.4	2.35		23/09/19	
R71807		34.32-34.56	White CHALK	25	95.9	1.98	1.59	99.30	234.60	2.4	6.8	0.878		23/09/19	
R71807		41.26-41.50	White CHALK	22	91.4	1.99	1.63	99.00	246.80	2.5	28.5	3.7		23/09/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29918

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71807
Sample Ref.:	-
Depth (m):	25.28-25.74

Description:
White CHALK

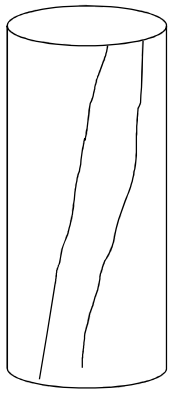
LF0879C (1000kN) compression frame used

Diameter	99.80 mm
Height	265.00 mm
Bulk Density	1.96 Mg/m³
Dry Density	1.55 Mg/m³
Water Content	26 %

Degree of Saturation: 95.7 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 23/09/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	**C**

Test results

Unconfined Compressive Strength	2.35 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29918

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71807
Sample Ref.:	-
Depth (m):	34.32-34.56

Description:
White CHALK

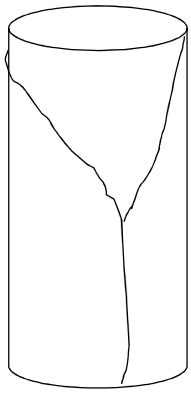
LF0879C (1000kN) compression frame used

Diameter	99.30 mm
Height	234.60 mm
Bulk Density	1.98 Mg/m³
Dry Density	1.59 Mg/m³
Water Content	25 %

Degree of Saturation: 95.9 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Y-Shaped



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Date tested: 23/09/2019

Test results

Unconfined Compressive Strength	0.878 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29918

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71807
Sample Ref.:	-
Depth (m):	41.26-41.50

Description:
White CHALK

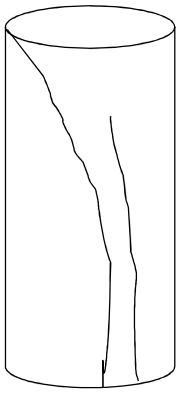
Diameter	99.00 mm
Height	246.80 mm
Bulk Density	1.99 Mg/m³
Dry Density	1.63 Mg/m³
Water Content	22 %

Degree of Saturation: 91.4 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 23/09/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	C

Test results

Unconfined Compressive Strength	3.7 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

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BS1377 : Part 2 : 1990 : Clause 3.3

SATURATION MOISTURE CONTENT OF CHALK

Borehole / Trial Pit	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 %	Bulk Density Mg/m³	Dry Density Mg/m³	Saturation Moisture Content %	Porosity %
R71806	22.00-22.25		C	White CHALK	26.8	1.98	1.56	27	42

Notes

Checked and Approved by: [redacted]

01/10/2019

Project Number:

GEO / 29927

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71806		7.13-7.38	White CHALK	25	100	2.04	1.63	100.00	264.10	2.6	19.2	2.44		24/09/19	
R71806		14.78-15.16	White CHALK	25	78.0	1.81	1.45	98.50	200.00	2.0	14.6	1.92		24/09/19	
R71806		22.00-22.25	White CHALK	24	100.0	2.03	1.63	99.60	261.30	2.6	29.3	3.76		24/09/19	
R71806		38.50-39.04	White CHALK	27	98.1	1.97	1.56	100.10	214.60	2.1	13.1	1.66		24/09/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29927

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71806
Sample Ref.:	-
Depth (m):	7.13-7.38

Description:
White CHALK

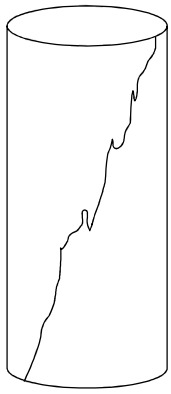
LF0879C (1000kN) compression frame used

Diameter	100.00 mm
Height	264.10 mm
Bulk Density	2.04 Mg/m³
Dry Density	1.63 Mg/m³
Water Content	25 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Date tested: 24/09/2019

Test results

Unconfined Compressive Strength	2.44 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29927

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71806
Sample Ref.:	-
Depth (m):	14.78-15.16

Description:
White CHALK

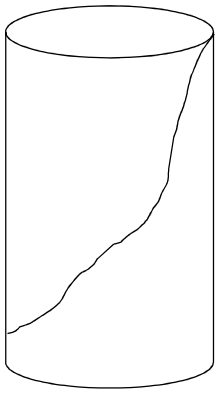
Diameter	98.50 mm
Height	200.00 mm
Bulk Density	1.81 Mg/m³
Dry Density	1.45 Mg/m³
Water Content	25 %

Degree of Saturation: 78.0 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 24/09/2019

Test results

Unconfined Compressive Strength	1.92 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29927

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71806
Sample Ref.:	-
Depth (m):	22.00-22.25

Description:
White CHALK

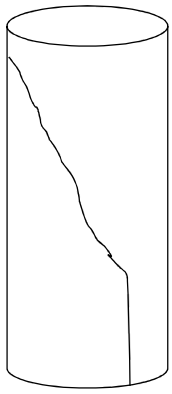
LF0879C (1000kN) compression frame used

Diameter	99.60 mm
Height	261.30 mm
Bulk Density	2.03 Mg/m³
Dry Density	1.63 Mg/m³
Water Content	24 %

Degree of Saturation: 100.0 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 24/09/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	**C**

Test results

Unconfined Compressive Strength	3.76 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29927

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71806
Sample Ref.:	-
Depth (m):	38.50-39.04

Description:
White CHALK

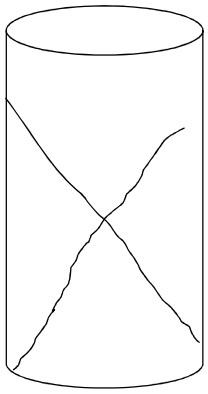
Diameter	100.10 mm
Height	214.60 mm
Bulk Density	1.97 Mg/m³
Dry Density	1.56 Mg/m³
Water Content	27 %

Degree of Saturation: 98.1 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Double shear



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 24/09/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	**C**

Test results

Unconfined Compressive Strength	1.66 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/09/2019

Project Number:

GEO / 29927

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71808	-	24.95-25.12	White CHALK	26	100	2.00	1.59	101.50	227.60	2.2	4.3	0.531		17/10/19	Failed on weakness plane
R71808	-	30.73-30.97	White CHALK	22	88.7	1.98	1.62	102.50	212.50	2.1	22.3	2.7		17/10/19	
R71808	-	32.36	White CHALK	24	100	2.08	1.68	100.60	243.70	2.4	37.4	4.71		17/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29950

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71808
Sample Ref.:	-
Depth (m):	24.95-25.12

Description:
White CHALK

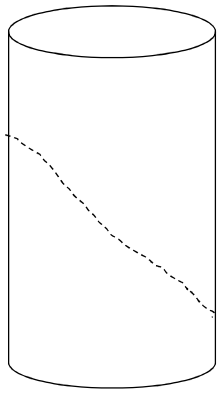
Diameter	101.50 mm
Height	227.60 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.59 Mg/m³
Water Content	26 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 60°

Sample type	C

Date tested: 17/10/2019

Test results

Unconfined Compressive Strength	0.531 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Remarks: Failed on weakness plane

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29950

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71808
Sample Ref.:	-
Depth (m):	30.73-30.97

Description:
White CHALK

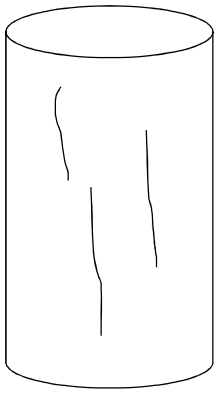
Diameter	102.50 mm
Height	212.50 mm
Bulk Density	1.98 Mg/m³
Dry Density	1.62 Mg/m³
Water Content	22 %

Degree of Saturation: 88.7 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 90°

Sample type	**C**

Date tested: 17/10/2019

Test results

Unconfined Compressive Strength	2.7 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29950

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71808
Sample Ref.:	-
Depth (m):	32.36

Description:
White CHALK

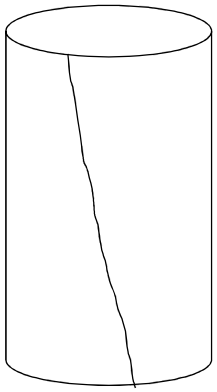
Diameter	100.60 mm
Height	243.70 mm
Bulk Density	2.08 Mg/m³
Dry Density	1.68 Mg/m³
Water Content	24 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 80°

Sample type	C

Date tested: 17/10/2019

Test results

Unconfined Compressive Strength	4.71 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 18/10/2019

Project Number:

GEO / 29950

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
R71213	-	11.67-12.25	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CLAY	25	**92.0**	**85.3**

Note: Tap water used as slaking fluid.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29993

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71213	-	9.23-9.57	White CHALK	26	100	2.00	1.59	100.50	220.60	2.2	29.1	3.67		19/10/19	
R71213	-	14.74-14.98	White CHALK	24	95.5	2.00	1.62	100.50	244.40	2.4	20.6	2.6		19/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29993

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71213
Sample Ref.:	-
Depth (m):	9.23-9.57

Description:
White CHALK

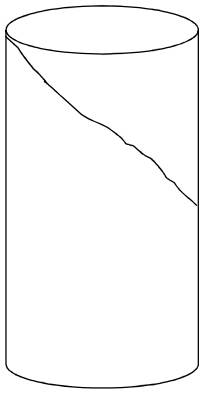
Diameter	100.50 mm
Height	220.60 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.59 Mg/m³
Water Content	26 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 19/10/2019

Test results

Unconfined Compressive Strength	3.67 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29993

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71213
Sample Ref.:	-
Depth (m):	14.74-14.98

Description:
White CHALK

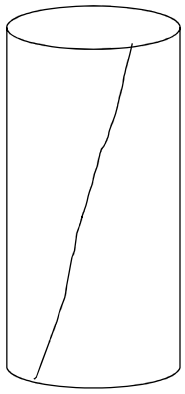
LF0879C (1000kN) compression frame used

Diameter	100.50 mm
Height	244.40 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.62 Mg/m³
Water Content	24 %

Degree of Saturation: 95.5 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 19/10/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: n/a

Sample type	C

Test results

Unconfined Compressive Strength	2.6 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29993

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
R71202	-	8.50-8.70	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	25	**92.7**	**87.5**
R71204	-	14.84-15.04	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	27	**91.8**	**86.1**
R71209	-	8.50-8.70	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	25	**92.1**	**86.1**
WS71501	-	3.00-3.60	White CHALK	21 ± 2	Retained: Retained specimen consist of large and small fragments. Passing: White CHALK	23	**43.0**	**38.4**
WS71502	-	1.20-1.90	White CHALK	21 ± 2	Retained: Retained specimen consist of large and small fragments. Passing: White CHALK	24	**49.2**	**43.0**
WS71503	-	4.30-5.00	White CHALK	21 ± 2	Retained: Retained specimen consist of large and small fragments. Passing: White CHALK	23	**47.7**	**39.0**
WS71504	-	2.00-2.90	White CHALK	21 ± 2	Retained: Retained specimen consist of large and small fragments. Passing: White CHALK	24	**47.9**	**42.9**
WS71505	-	3.00-3.40	White CHALK	21 ± 2	Retained: Retained specimen consist of large and small fragments. Passing: White CHALK	23	**50.2**	**40.3**

Note: Tap water used as slaking fluid.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29994

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71202	-	15.23-15.47	White CHALK	26	98.4	1.98	1.57	100.50	204.80	2.0	7.6	0.958		17/10/19	
R71204	-	12.04-12.35	White CHALK	22	92.2	2.00	1.63	98.60	233.60	2.4	9.3	1.22		17/10/19	Failed on weakness plane
R71209	-	15.06-15.44	White CHALK	27	100	1.99	1.58	95.40	251.40	2.6	10.3	1.44		17/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29994

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71202
Sample Ref.:	-
Depth (m):	15.23-15.47

Description:
White CHALK

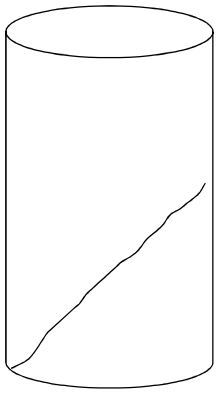
Diameter	100.50 mm
Height	204.80 mm
Bulk Density	1.98 Mg/m³
Dry Density	1.57 Mg/m³
Water Content	26 %

Degree of Saturation: 98.4 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 135°

Date tested: 17/10/2019

Test results

Unconfined Compressive Strength	0.958 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29994

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71204
Sample Ref.:	-
Depth (m):	12.04-12.35

Description:
White CHALK

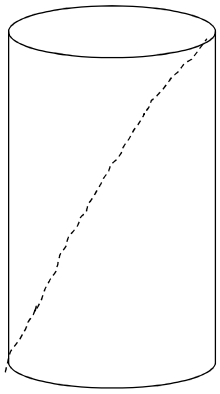
Diameter	98.60 mm
Height	233.60 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.63 Mg/m³
Water Content	22 %

Degree of Saturation: 92.2 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 120°

Sample type	C

Date tested: 17/10/2019

Test results

Unconfined Compressive Strength	1.22 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Remarks: Failed on weakness plane

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29994

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71209
Sample Ref.:	-
Depth (m):	15.06-15.44

Description:
White CHALK

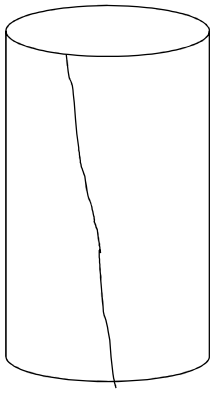
LF0879C (1000kN) compression frame used

Diameter	95.40 mm
Height	251.40 mm
Bulk Density	1.99 Mg/m³
Dry Density	1.58 Mg/m³
Water Content	27 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 85°

Date tested: 17/10/2019

Test results

Unconfined Compressive Strength	1.44 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 24/10/2019

Project Number:

GEO / 29994

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

BH / TP No.	STP71603
Depth (m)	3.00
Sample Type	B

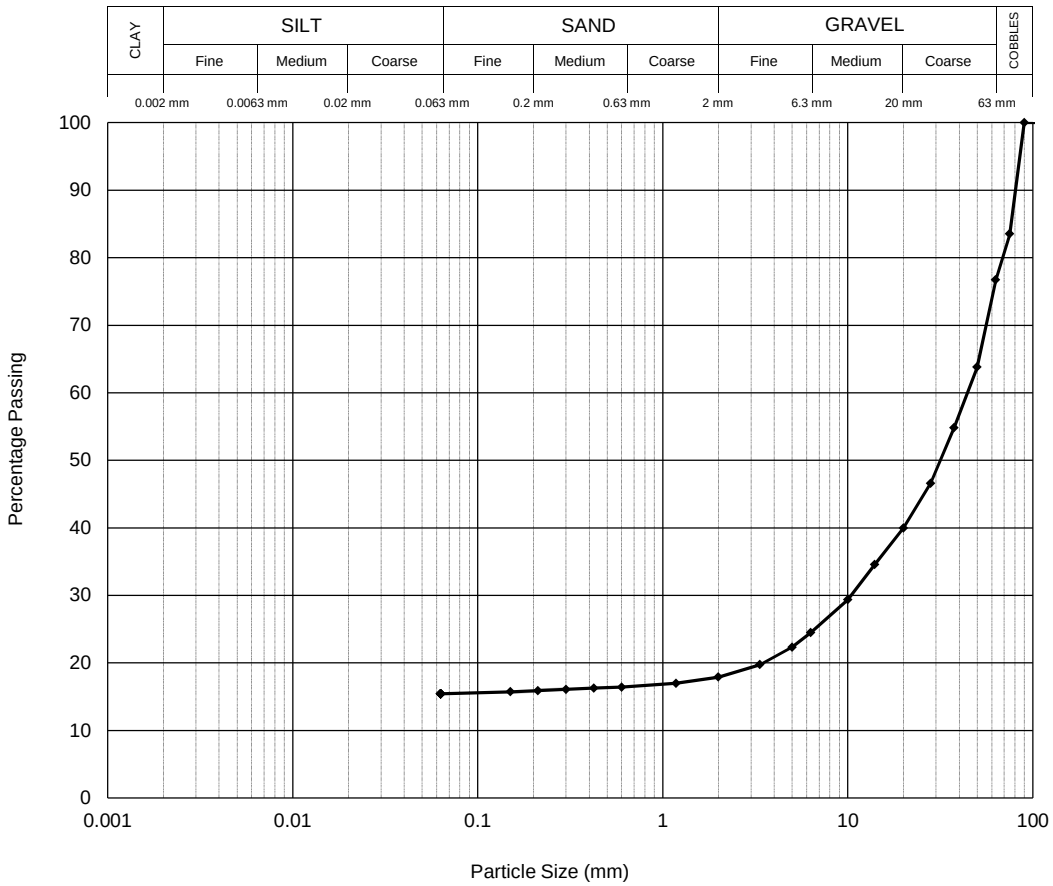
Description

White rock CHALK in a chalk matrix with occassional flint.

Remarks: Insuffcient sample supplied to comply with BS EN ISO 17892-4 : 2016 minimum mass requirements

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	84
63.0 mm	77
50.0 mm	64
37.5 mm	55
28.0 mm	47
20.0 mm	40
14.0 mm	35
10.0 mm	29
6.30 mm	24
5.00 mm	22
3.35 mm	20
2.00 mm	18
1.18 mm	17
600 µm	16
425 µm	16
300 µm	16
212 µm	16
150 µm	16
63 µm	15



Particle Proportions	
Cobbles	23
Gravel	59
Sand	2
Silt & Clay	16

Checked and Approved by

[redacted]

J Sturges - Operations Manager
31/10/2019

Project Number:

GEO / 30003

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
STP70101	-	2.00	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	23	**90.7**	**86.4**
STP70102	-	0.50	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	22	**91.3**	**89.0**
STP71402	-	2.00	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	22	**89.5**	**84.2**
STP71404	-	3.00	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	24	**90.7**	**86.0**
STP71602	-	3.50	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	24	**90.4**	**85.9**
STP71603	-	0.60	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	24	**90.5**	**84.9**
STP71604	-	3.00	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	22	**89.7**	**84.3**

Note: Tap water used as slaking fluid.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/10/2019

Project Number:

GEO / 30003

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
R71211	-	8.95-9.05	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CLAY	25	**92.5**	**87.5**

Note: Tap water used as slaking fluid.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30004

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71211	-	15.06-15.26	White CHALK	26	93.0	1.93	1.53	100.40	202.40	2.0	27.5	3.47		29/10/19	Failed on weakness plane
R71802	-	15.18-15.40	White CHALK	27	97.6	1.97	1.55	98.70	203.40	2.1	16.6	2.17		29/10/19	
R71802	-	24.70-24.95	White CHALK	24	100	2.04	1.65	97.60	204.50	2.1	18.5	2.47		29/10/19	
R71802	-	30.23-30.51	White CHALK	26	97.5	1.98	1.57	99.50	233.70	2.3	24.5	3.15		29/10/19	
R71802	-	40.02-40.40	White CHALK	22	93.4	2.01	1.65	98.60	253.70	2.6	39.7	5.2		29/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30004

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71211
Sample Ref.:	-
Depth (m):	15.06-15.26

Description:
White CHALK

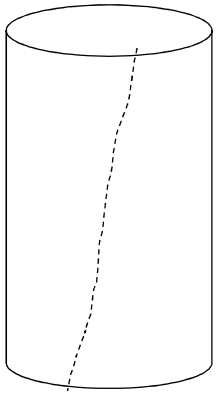
LF0879C (1000kN) compression frame used

Diameter	100.40 mm
Height	202.40 mm
Bulk Density	1.93 Mg/m³
Dry Density	1.53 Mg/m³
Water Content	26 %

Degree of Saturation: 93.0 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

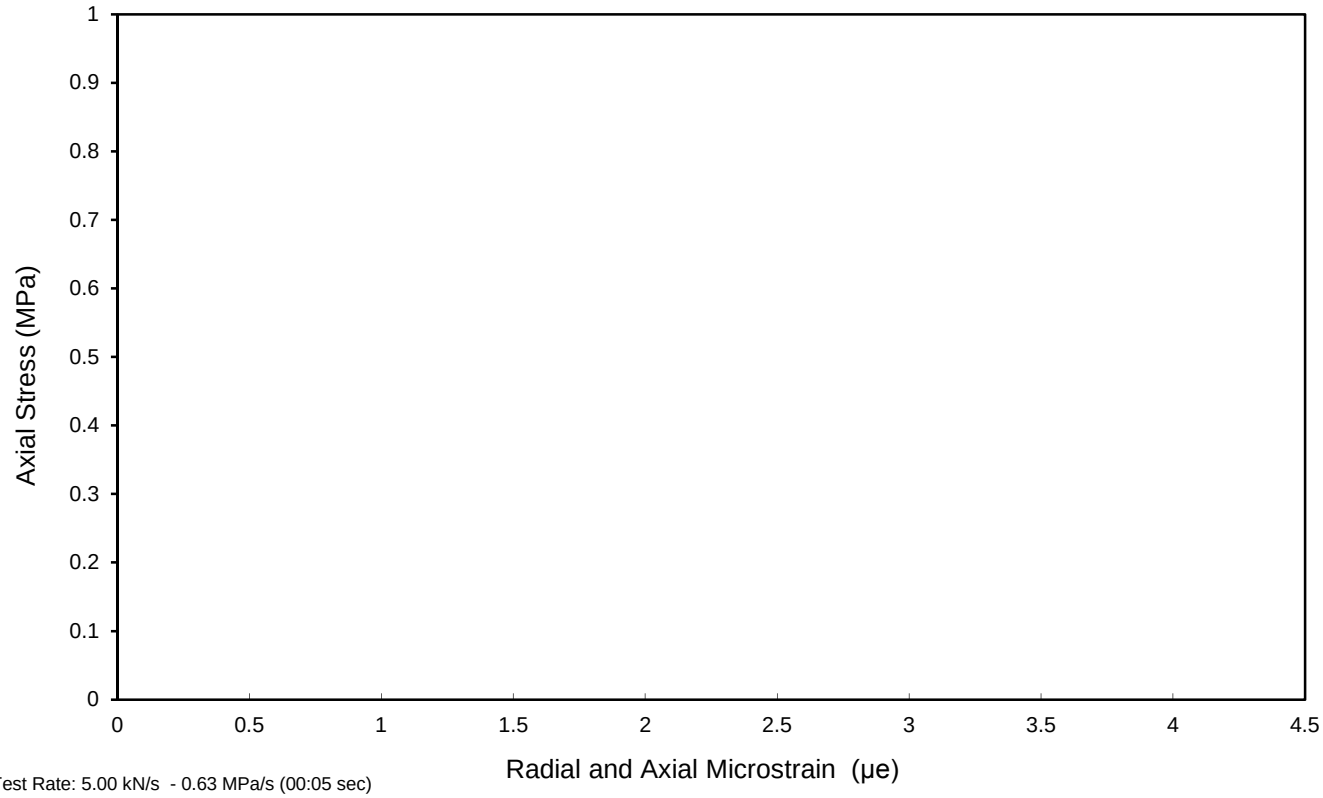
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 105°

Date tested: 29/10/2019

Sample type	C

Test results

Unconfined Compressive Strength	3.47 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.63 MPa/s (00:05 sec)

Remarks: Failed on weakness plane

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30004

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS

Borehole Ref.:	R71802
Sample Ref.:	-
Depth (m):	15.18-15.40

Description:
White CHALK

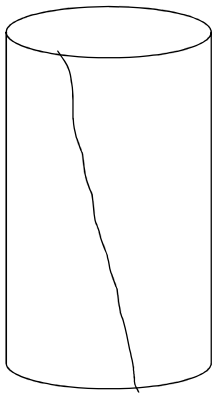
LF0879C (1000kN) compression frame used

Diameter	98.70 mm
Height	203.40 mm
Bulk Density	1.97 Mg/m³
Dry Density	1.55 Mg/m³
Water Content	27 %

Degree of Saturation: 97.6 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

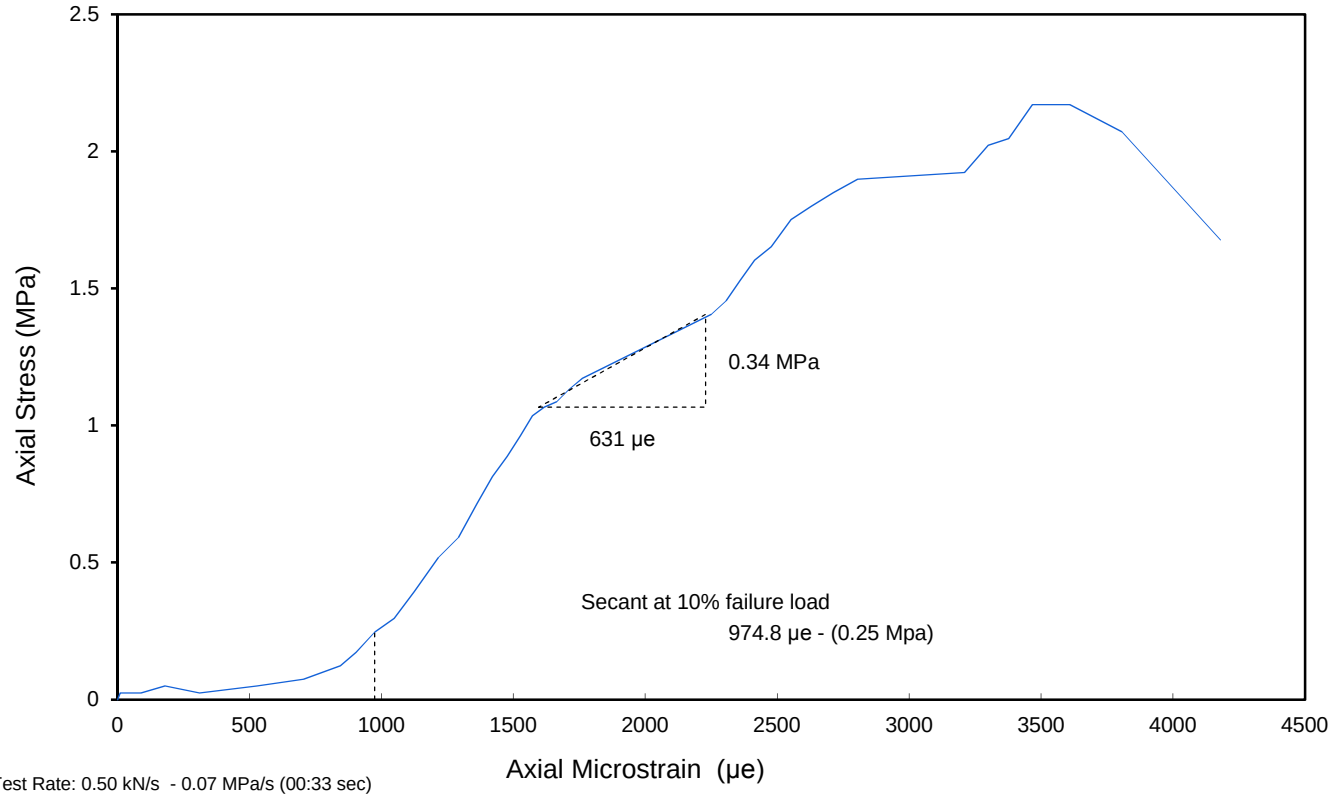
Date tested: 29/10/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 75°

Sample type	C

Test results

Unconfined Compressive Strength	2.17 MPa
Young's Modulus (tangential at 54% failure load)	0.535 GPa
Poisson's Ratio (tangential at 54% failure load)	n/a
Young's Modulus (secant at 10% failure load)	0.253 GPa
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 0.50 kN/s - 0.07 MPa/s (00:33 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30004

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71802
Sample Ref.:	-
Depth (m):	24.70-24.95

Description:
White CHALK

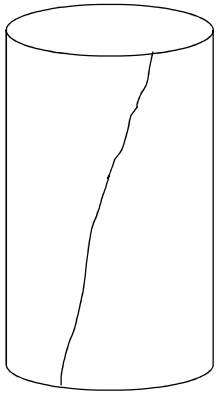
LF0879C (1000kN) compression frame used

Diameter	97.60 mm
Height	204.50 mm
Bulk Density	2.04 Mg/m³
Dry Density	1.65 Mg/m³
Water Content	24 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

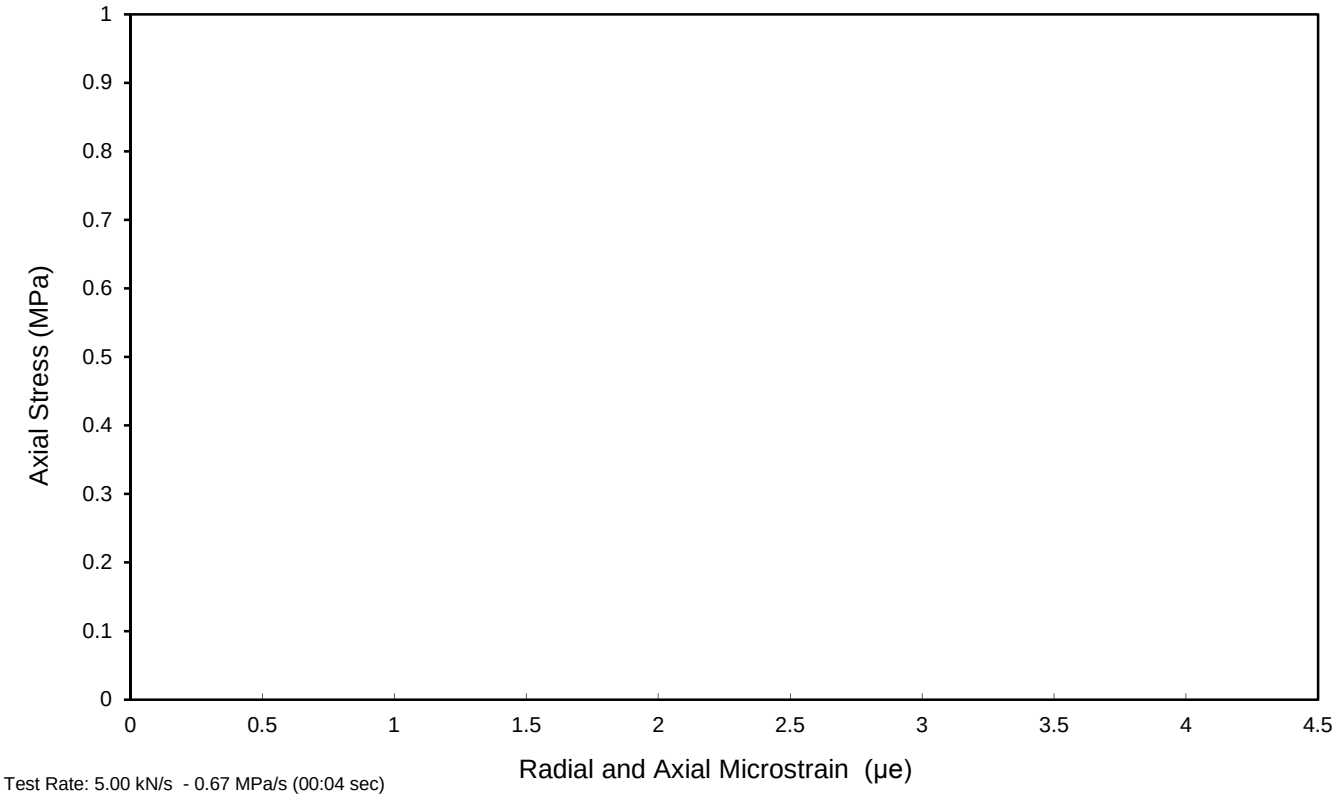
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 105°

Date tested: 29/10/2019

Sample type	C

Test results

Unconfined Compressive Strength	2.47 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.67 MPa/s (00:04 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30004

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71802
Sample Ref.:	-
Depth (m):	30.23-30.51

Description:
White CHALK

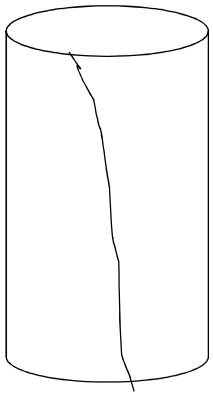
LF0879C (1000kN) compression frame used

Diameter	99.50 mm
Height	233.70 mm
Bulk Density	1.98 Mg/m³
Dry Density	1.57 Mg/m³
Water Content	26 %

Degree of Saturation: 97.5 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

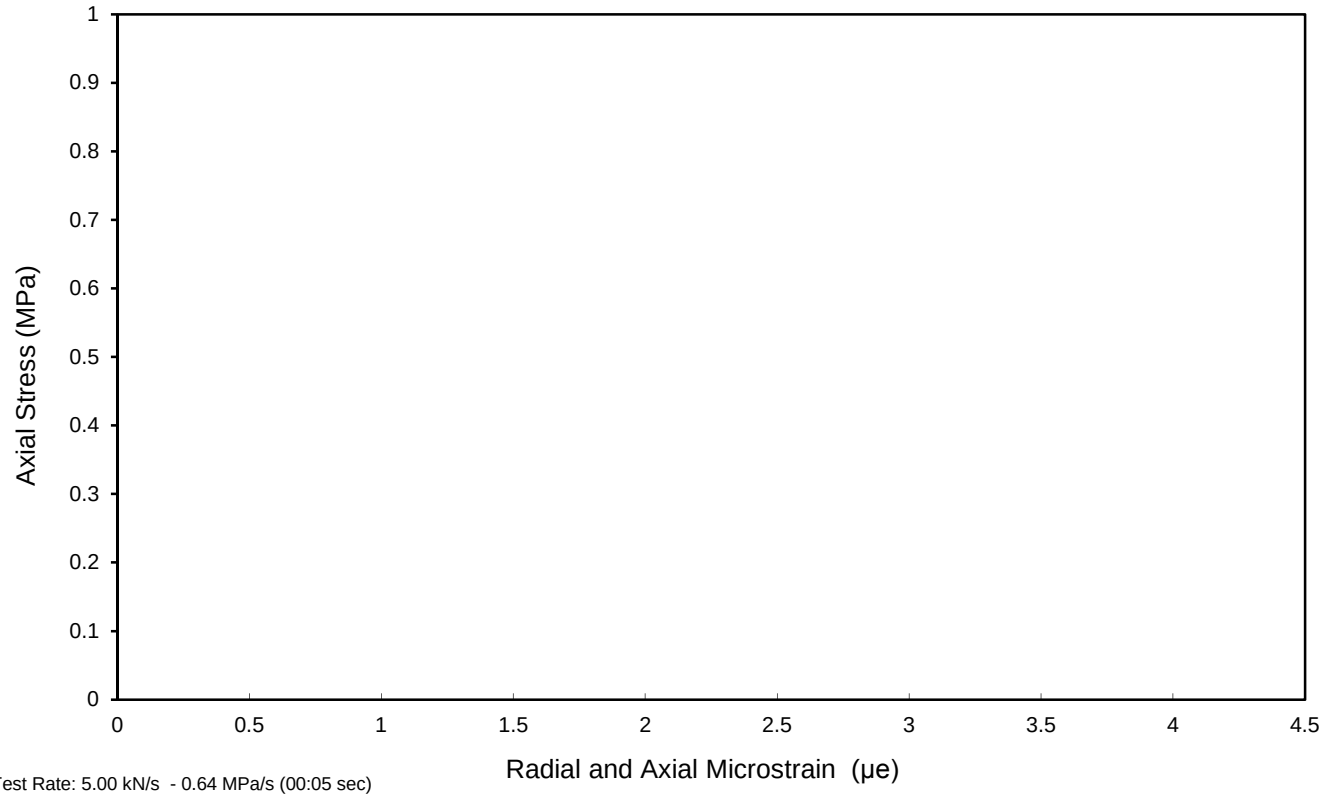
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 80°

Date tested: 29/10/2019

Test results

Unconfined Compressive Strength	3.15 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**



Test Rate: 5.00 kN/s - 0.64 MPa/s (00:05 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30004

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71802
Sample Ref.:	-
Depth (m):	40.02-40.40

Description:
White CHALK

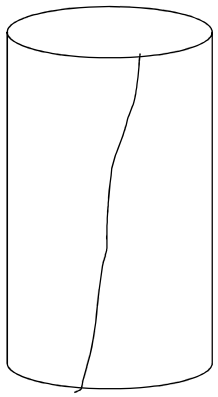
LF0879C (1000kN) compression frame used

Diameter	98.60 mm
Height	253.70 mm
Bulk Density	2.01 Mg/m³
Dry Density	1.65 Mg/m³
Water Content	22 %

Degree of Saturation: 93.4 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

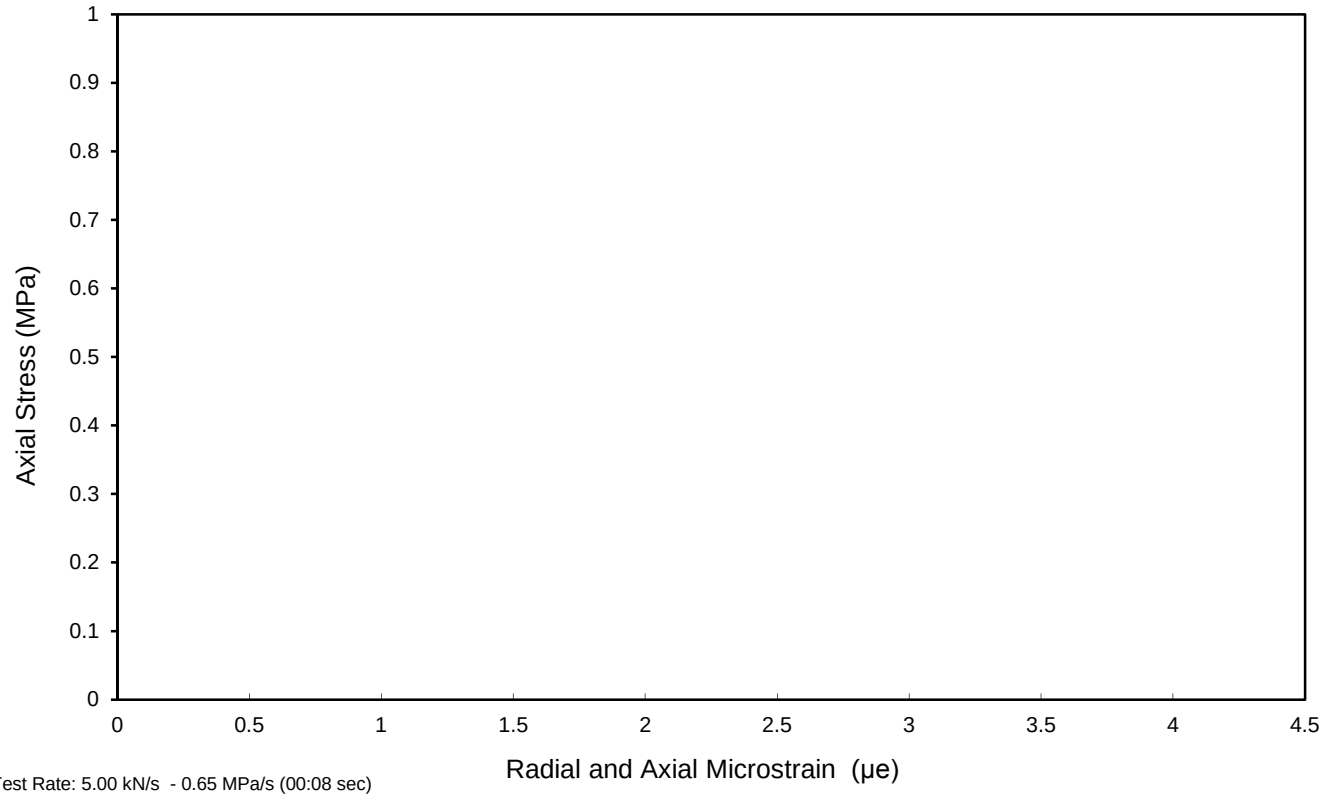
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 105°

Date tested: 29/10/2019

Sample type	C

Test results

Unconfined Compressive Strength	5.2 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.65 MPa/s (00:08 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

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DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
R71201		12.25-12.50	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CLAY	24	**91.7**	**87.1**

Note: Tap water used as slaking fluid.

Checked and Approved by

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details						Density		Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71201		15.40-15.62	White CHALK	23	90.9	1.97	1.60	97.50	212.60	2.2	22.0	2.95		29/10/19	
R71803		17.23-17.43	White CHALK	25	94.5	1.96	1.57	99.60	202.30	2.0	26.1	3.35		29/10/19	
R71803		21.88-22.20	White CHALK	25	65.8	1.66	1.32	99.80	248.70	2.5	24.1	3.08		29/10/19	
R71803		27.25-27.55	White CHALK	25	100	2.06	1.64	99.50	239.60	2.4	27.6	3.55		29/10/19	
R71803		36.32-36.84	White CHALK	26	95.5	1.96	1.55	100.50	251.60	2.5	28.8	3.63		29/01/19	
R71810		16.03-16.28	White CHALK	25	93.6	1.97	1.58	100.80	203.10	2.0	14.9	1.87		29/10/19	Failed on weakness plane
R71810		26.80-27.15	White CHALK	26	98.5	1.99	1.58	99.70	243.60	2.4	26.6	3.41		29/10/19	
R71810		39.00-39.47	White CHALK	24	95.0	2.00	1.61	100.60	247.80	2.5	27.5	3.46		29/10/19	
R71811		16.79-17.02	White CHALK	25	93.2	1.96	1.56	102.30	209.30	2.0	14.1	1.72		29/10/19	Failed on weakness plane
R71811		30.05-30.33	White CHALK	23	88.3	1.96	1.60	100.30	213.40	2.1	35.5	4.49		29/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

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UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71811		40.74-41.10	White CHALK	23	97.6	2.02	1.64	101.40	242.60	2.4	32.0	3.96		29/10/19	
R71811		50.05-50.50	White CHALK	21	95.6	2.05	1.69	101.60	248.70	2.4	50.6	6.24		29/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71201
Sample Ref.:	-
Depth (m):	15.40-15.62

Description:
White CHALK

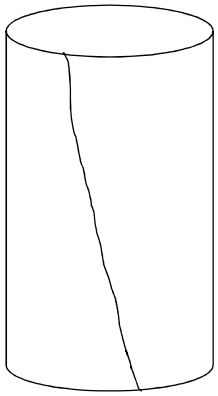
LF0879C (1000kN) compression frame used

Diameter	97.50 mm
Height	212.60 mm
Bulk Density	1.97 Mg/m³
Dry Density	1.60 Mg/m³
Water Content	23 %

Degree of Saturation: 90.9 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

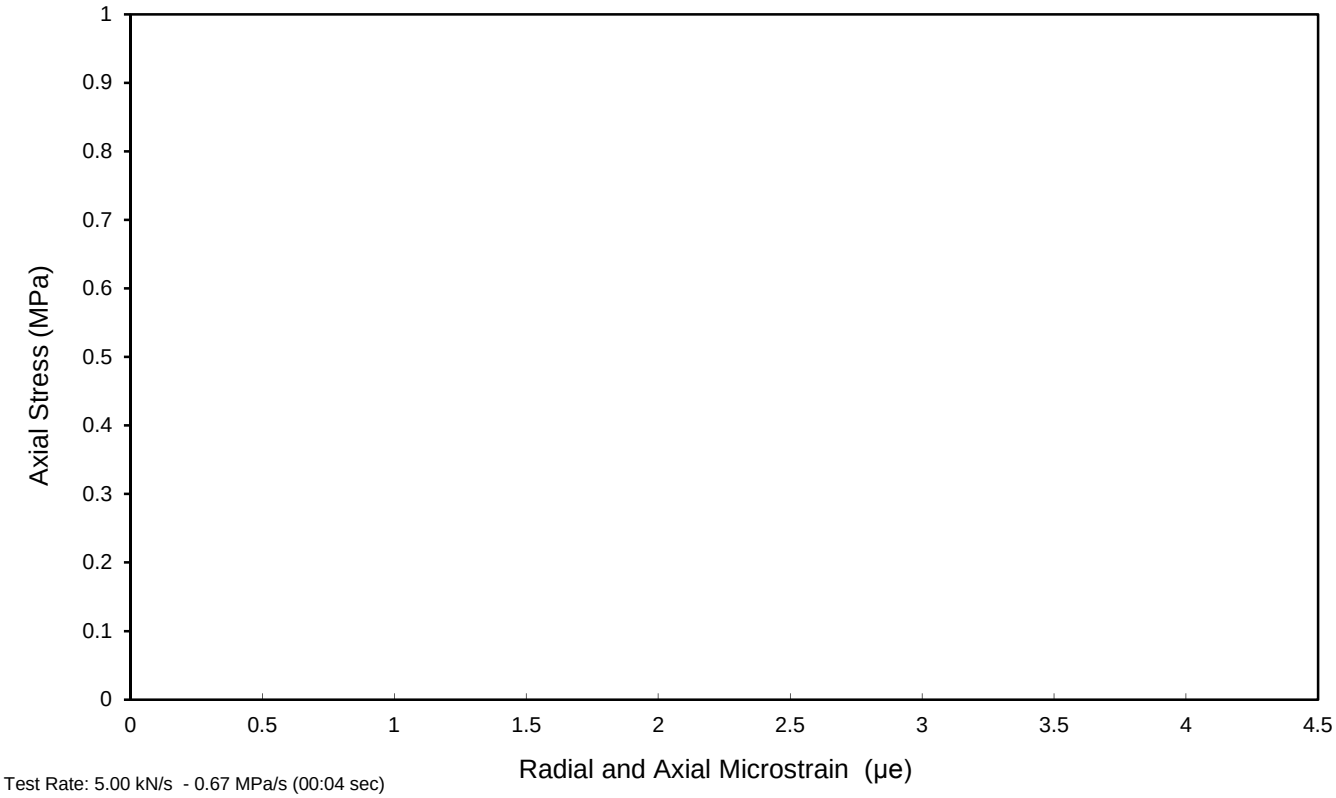
Angle of foliation/Horizontal: 75°
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 29/10/2019

Test results

Unconfined Compressive Strength	2.95 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.67 MPa/s (00:04 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

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Project Name:

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71803
Sample Ref.:	-
Depth (m):	17.23-17.43

Description:
White CHALK

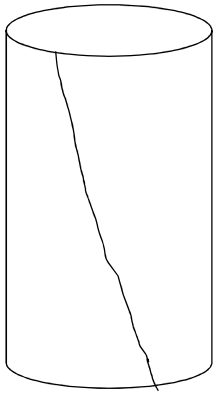
LF0879C (1000kN) compression frame used

Diameter	99.60 mm
Height	202.30 mm
Bulk Density	1.96 Mg/m³
Dry Density	1.57 Mg/m³
Water Content	25 %

Degree of Saturation: 94.5 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

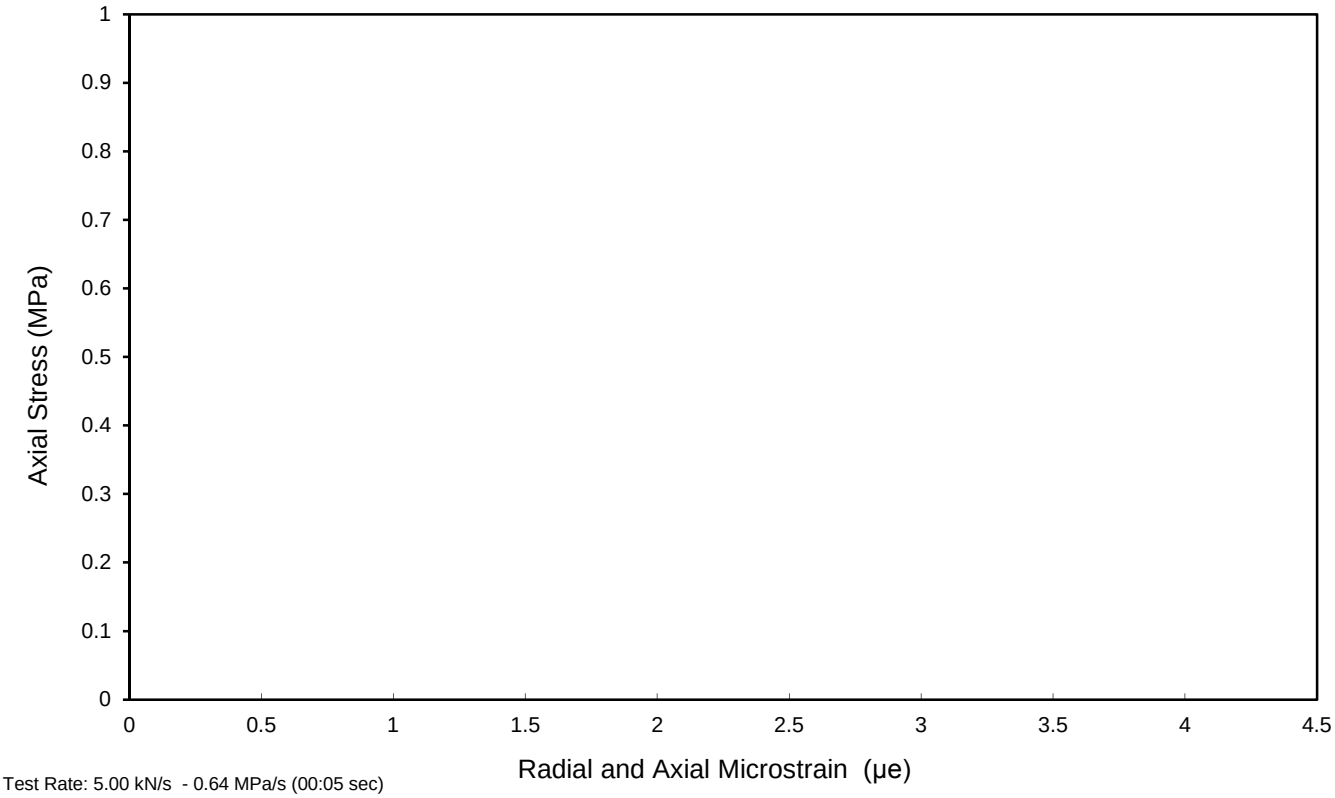
Angle of foliation/Horizontal: 70°
Angle of shear plane/Horizontal: n/a

Date tested: 29/10/2019

Sample type	C

Test results

Unconfined Compressive Strength	3.35 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.64 MPa/s (00:05 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71803
Sample Ref.:	-
Depth (m):	21.88-22.20

Description:
White CHALK

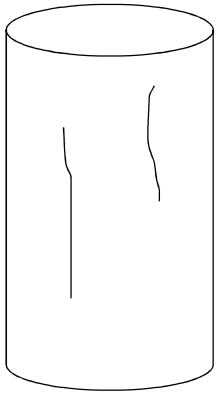
LF0879C (1000kN) compression frame used

Diameter	99.80 mm
Height	248.70 mm
Bulk Density	1.66 Mg/m³
Dry Density	1.32 Mg/m³
Water Content	25 %

Degree of Saturation: 65.8 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

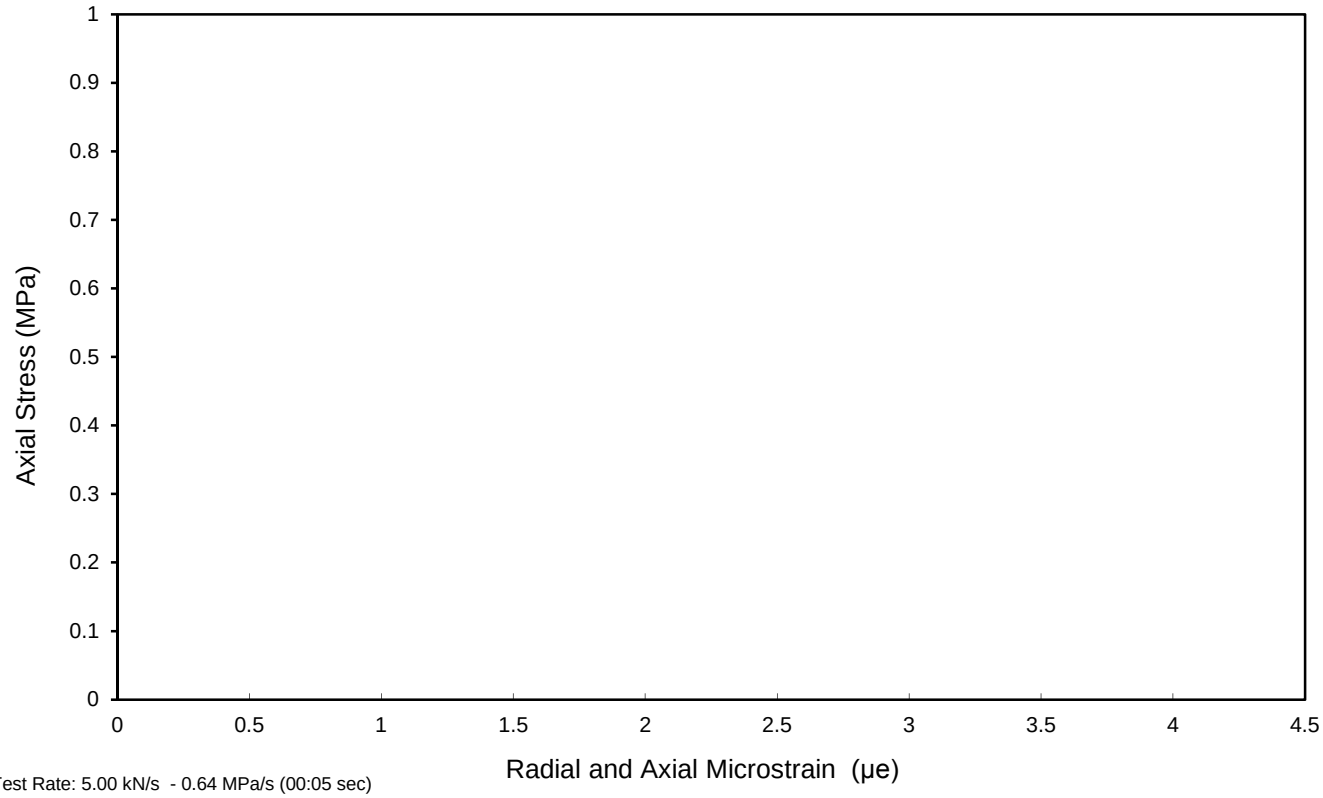
Angle of foliation/Horizontal: 90°
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 29/10/2019

Test results

Unconfined Compressive Strength	3.08 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.64 MPa/s (00:05 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

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A303 Amesbury to Berwick Down - Phase 7A GI

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71803
Sample Ref.:	-
Depth (m):	27.25-27.55

Description:
White CHALK

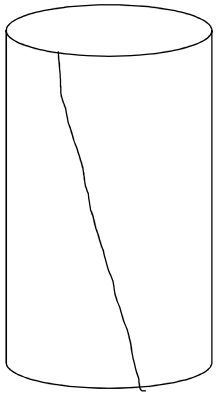
LF0879C (1000kN) compression frame used

Diameter	99.50 mm
Height	239.60 mm
Bulk Density	2.06 Mg/m³
Dry Density	1.64 Mg/m³
Water Content	25 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

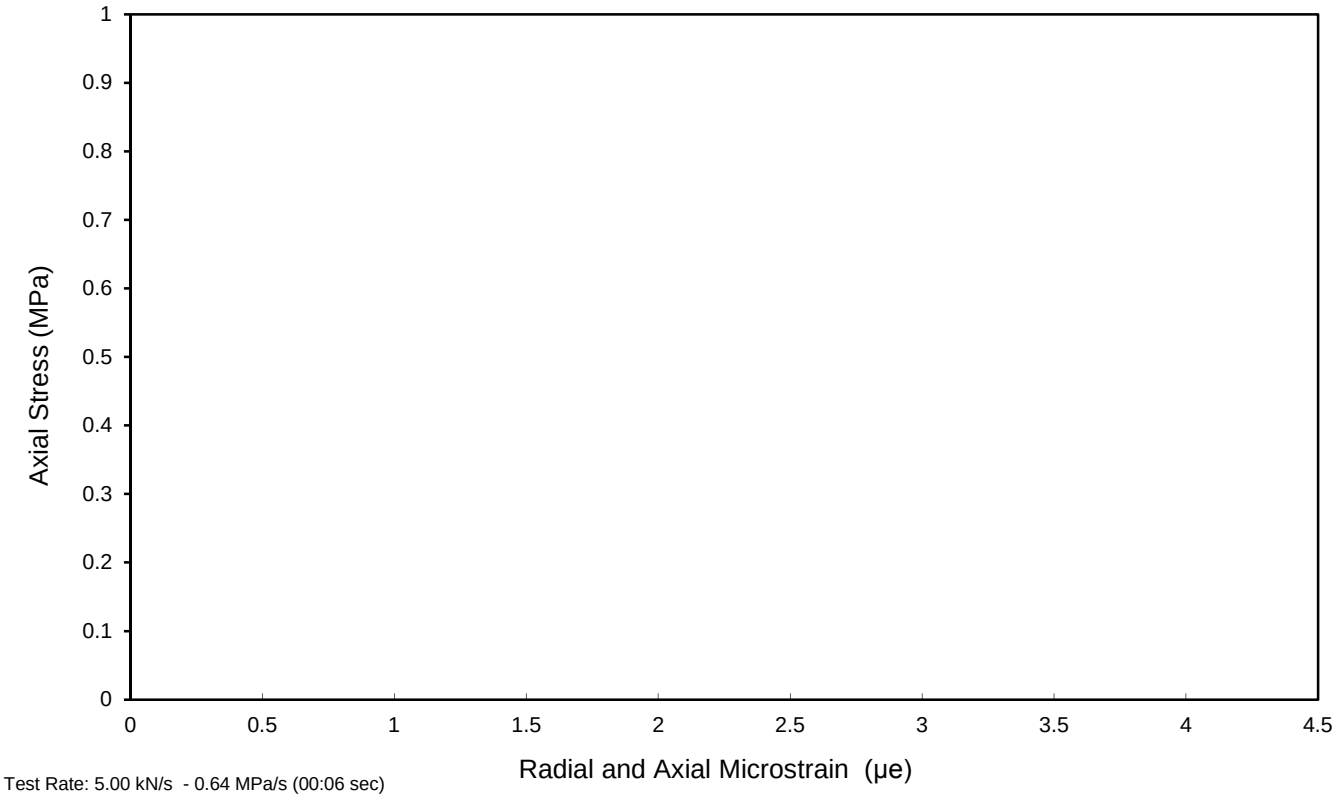
Angle of foliation/Horizontal: 75°
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 29/10/2019

Test results

Unconfined Compressive Strength	3.55 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.64 MPa/s (00:06 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

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Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71803
Sample Ref.:	-
Depth (m):	36.32-36.84

Description:
White CHALK

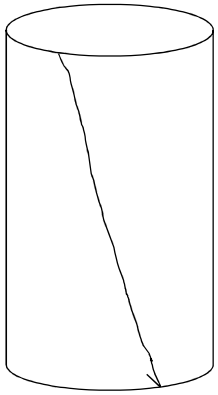
LF0879C (1000kN) compression frame used

Diameter	100.50 mm
Height	251.60 mm
Bulk Density	1.96 Mg/m³
Dry Density	1.55 Mg/m³
Water Content	26 %

Degree of Saturation: 95.5 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

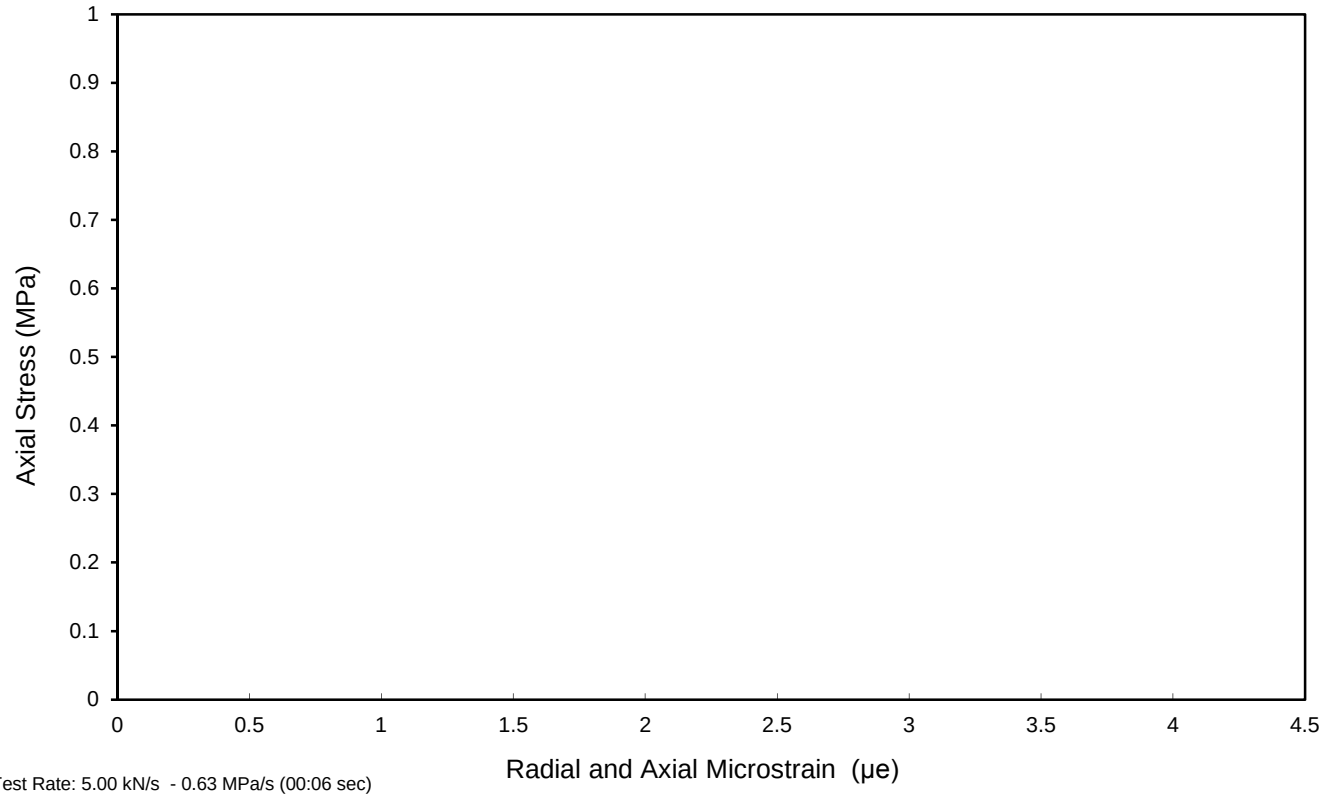
Angle of foliation/Horizontal: 75°
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 29/01/2019

Test results

Unconfined Compressive Strength	3.63 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.63 MPa/s (00:06 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30033

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

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UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71810
Sample Ref.:	-
Depth (m):	16.03-16.28

Description:
White CHALK

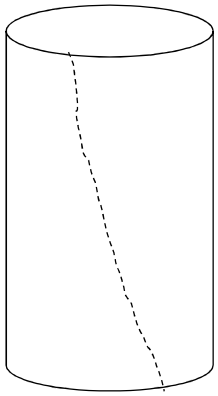
LF0879C (1000kN) compression frame used

Diameter	100.80 mm
Height	203.10 mm
Bulk Density	1.97 Mg/m³
Dry Density	1.58 Mg/m³
Water Content	25 %

Degree of Saturation: 93.6 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

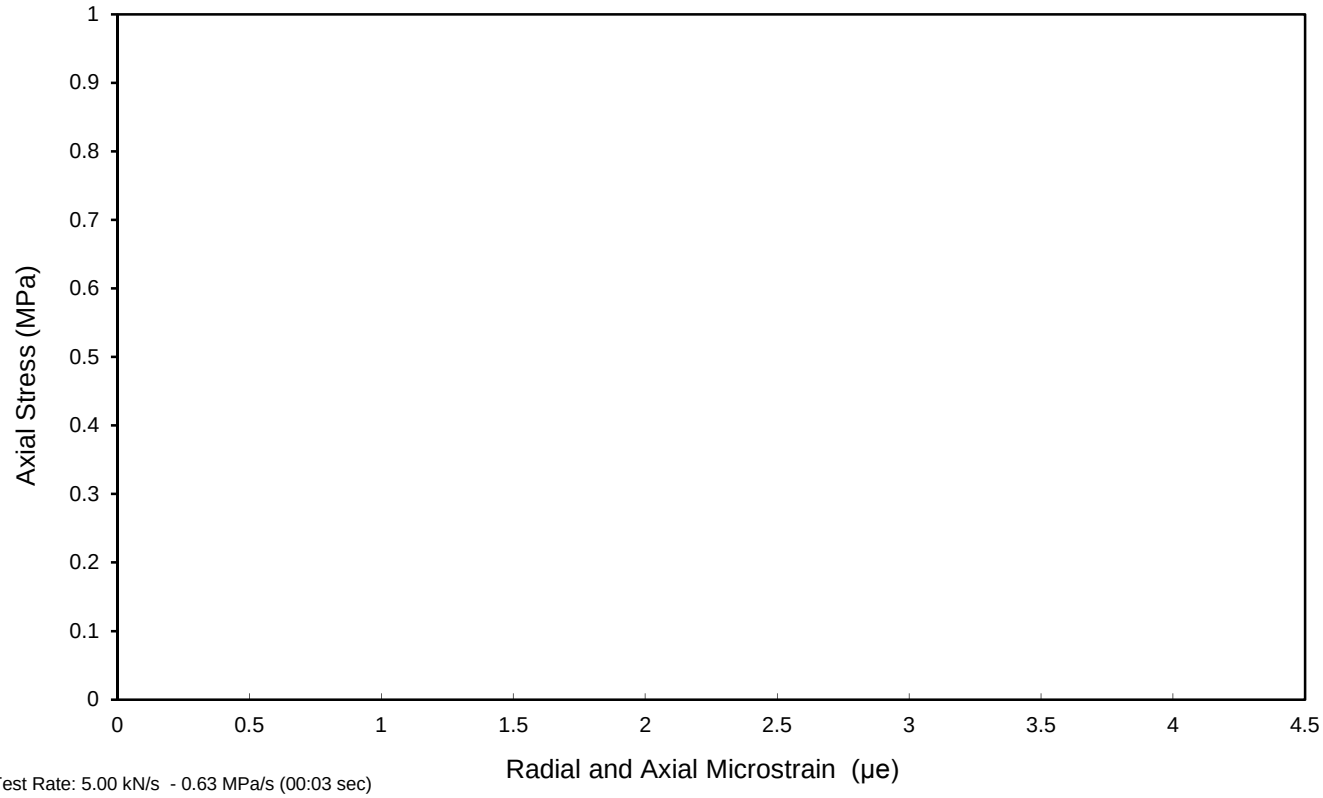
Date tested: 29/10/2019

Angle of foliation/Horizontal: 75°
Angle of shear plane/Horizontal: n/a

Sample type	C

Test results

Unconfined Compressive Strength	1.87 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.63 MPa/s (00:03 sec)

Remarks: Failed on weakness plane

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

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UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS

Borehole Ref.:	R71810
Sample Ref.:	-
Depth (m):	26.80-27.15

Description:
White CHALK

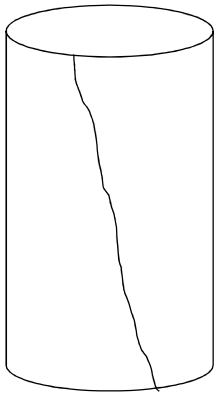
LF0879C (1000kN) compression frame used

Diameter	99.70 mm
Height	243.60 mm
Bulk Density	1.99 Mg/m³
Dry Density	1.58 Mg/m³
Water Content	26 %

Degree of Saturation: 98.5 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

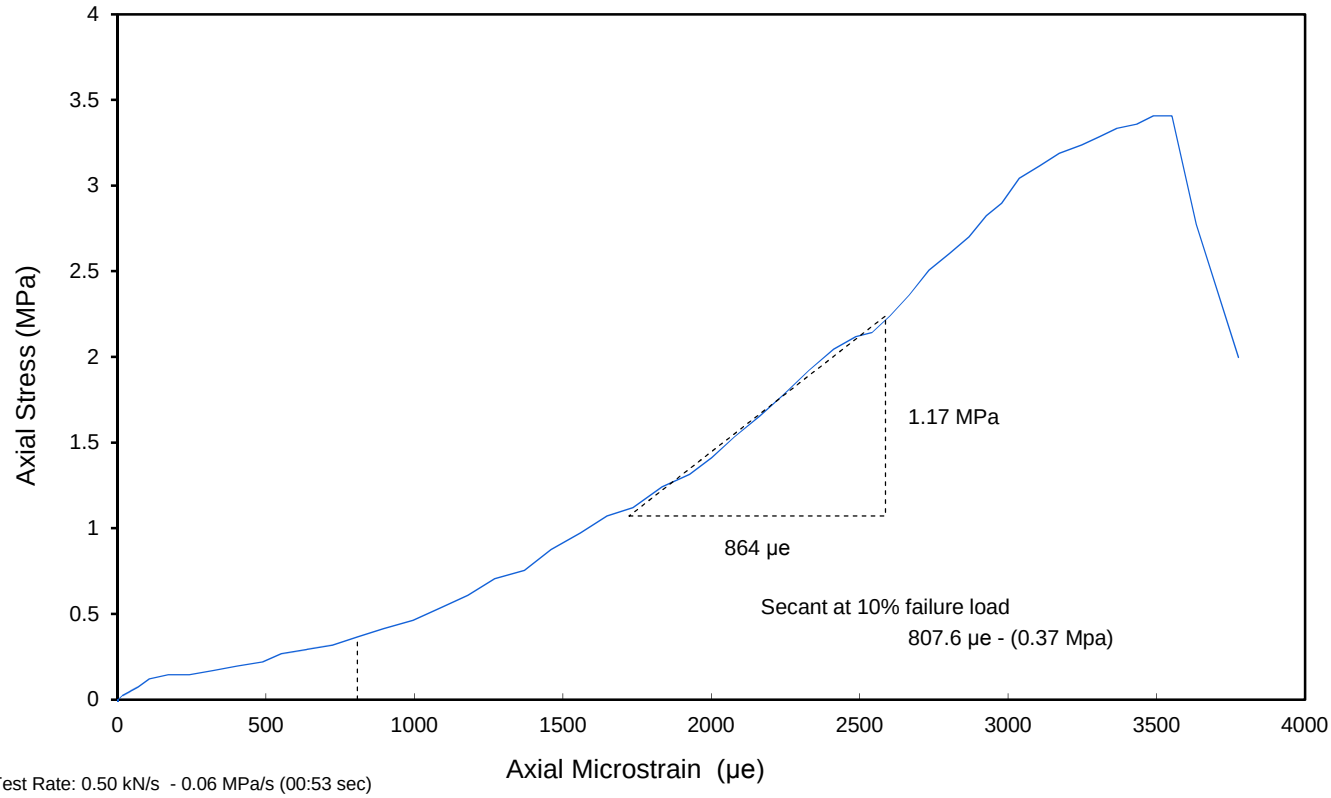
Date tested: 29/10/2019

Angle of foliation/Horizontal: 70°
Angle of shear plane/Horizontal: n/a

Sample type	C

Test results

Unconfined Compressive Strength	3.41 MPa
Young's Modulus (tangential at 50% failure load)	1.35 GPa
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	0.452 GPa
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 0.50 kN/s - 0.06 MPa/s (00:53 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30033

Project Name:

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71810
Sample Ref.:	-
Depth (m):	39.00-39.47

Description:
White CHALK

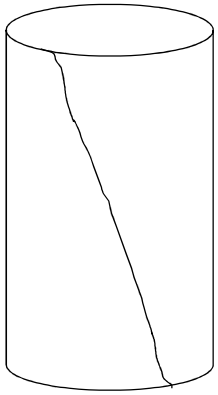
LF0879C (1000kN) compression frame used

Diameter	100.60 mm
Height	247.80 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.61 Mg/m³
Water Content	24 %

Degree of Saturation: 95.0 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

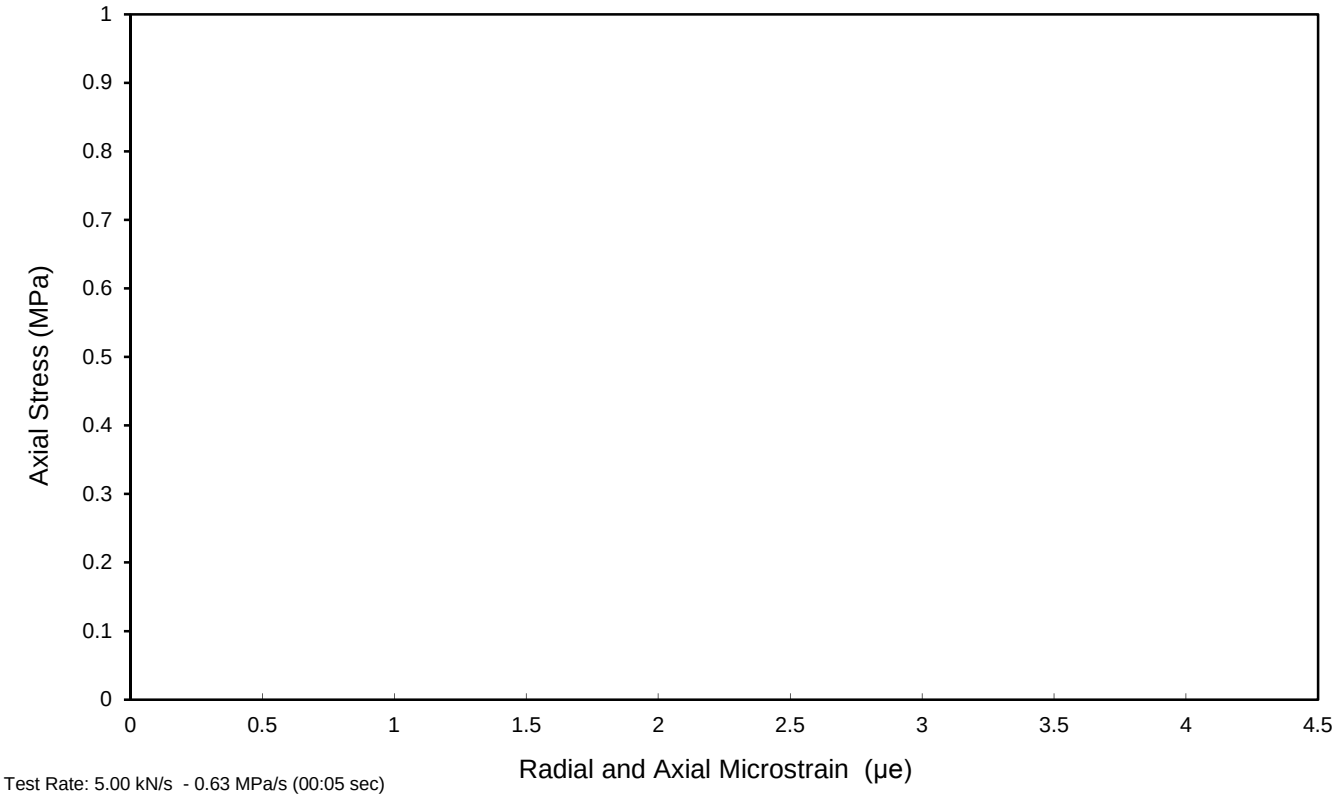
Angle of foliation/Horizontal: 70°
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 29/10/2019

Test results

Unconfined Compressive Strength	3.46 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.63 MPa/s (00:05 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30033

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71811
Sample Ref.:	-
Depth (m):	16.79-17.02

Description:
White CHALK

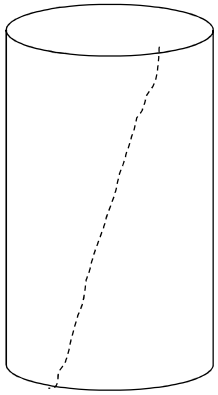
LF0879C (1000kN) compression frame used

Diameter	102.30 mm
Height	209.30 mm
Bulk Density	1.96 Mg/m³
Dry Density	1.56 Mg/m³
Water Content	25 %

Degree of Saturation: 93.2 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

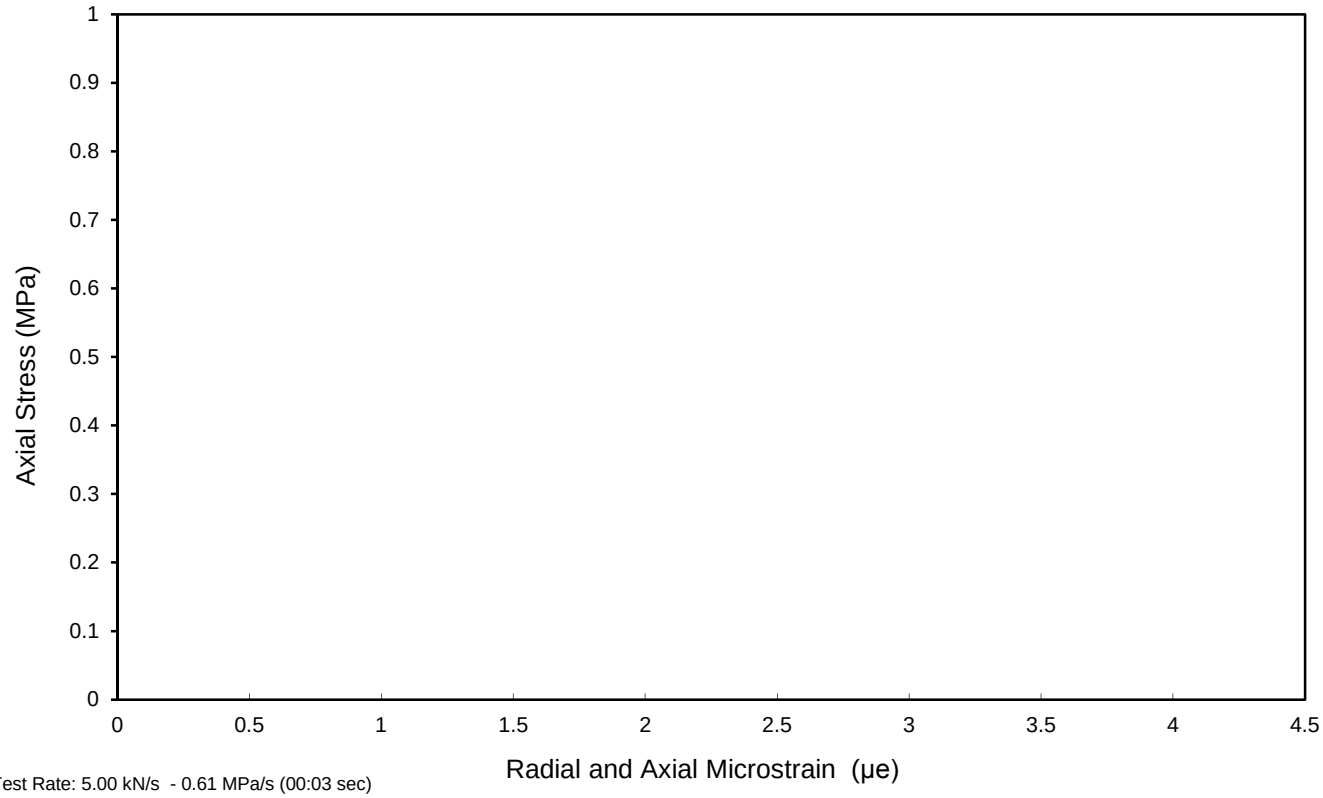
Angle of foliation/Horizontal: 120°
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 29/10/2019

Test results

Unconfined Compressive Strength	1.72 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.61 MPa/s (00:03 sec)

Remarks: Failed on weakness plane

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71811
Sample Ref.:	-
Depth (m):	30.05-30.33

Description:
White CHALK

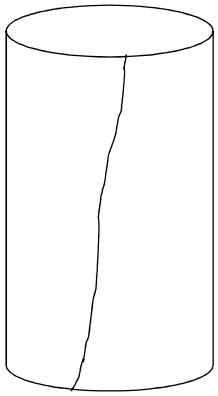
LF0879C (1000kN) compression frame used

Diameter	100.30 mm
Height	213.40 mm
Bulk Density	1.96 Mg/m³
Dry Density	1.60 Mg/m³
Water Content	23 %

Degree of Saturation: 88.3 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

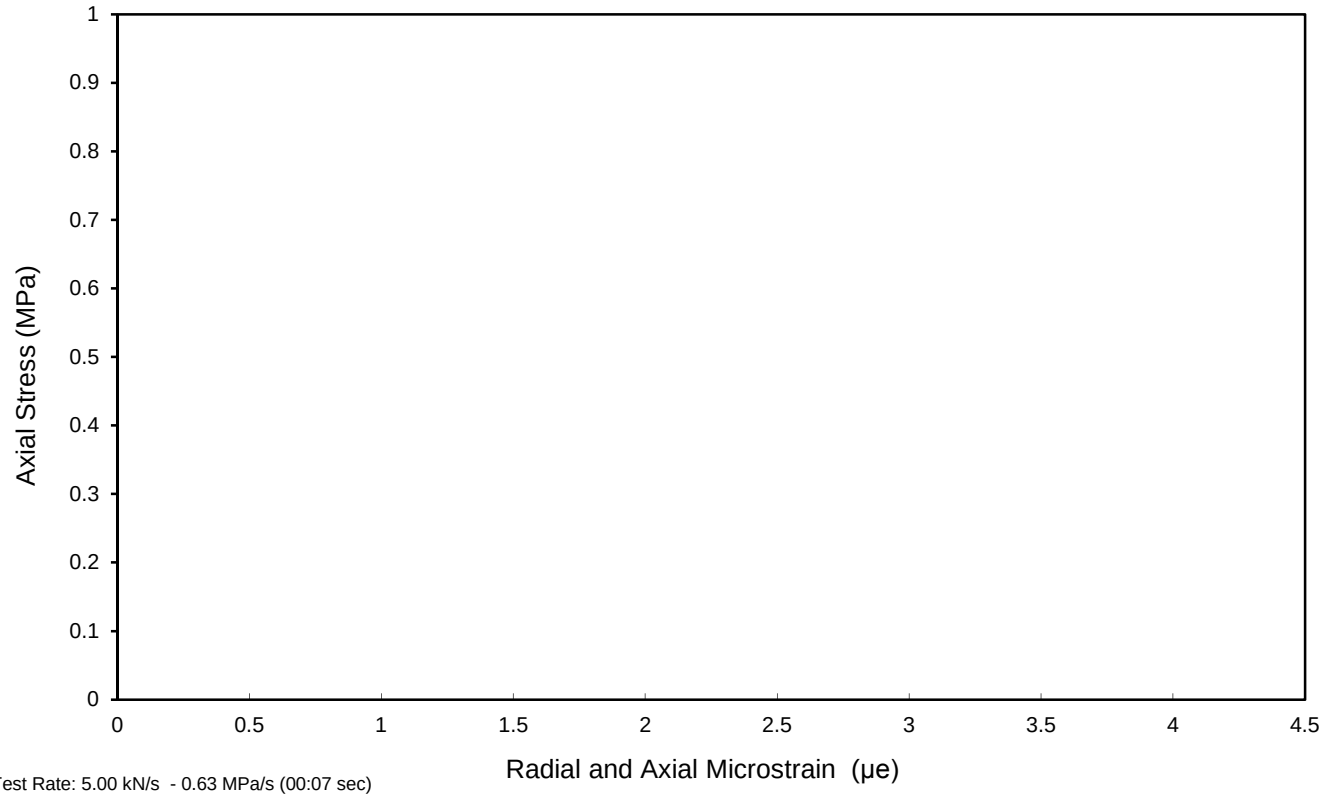
Angle of foliation/Horizontal: 110°
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 29/10/2019

Test results

Unconfined Compressive Strength	4.49 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.63 MPa/s (00:07 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30033

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71811
Sample Ref.:	-
Depth (m):	40.74-41.10

Description:
White CHALK

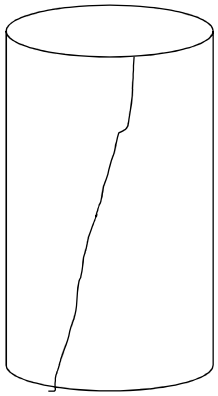
LF0879C (1000kN) compression frame used

Diameter	101.40 mm
Height	242.60 mm
Bulk Density	2.02 Mg/m³
Dry Density	1.64 Mg/m³
Water Content	23 %

Degree of Saturation: 97.6 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

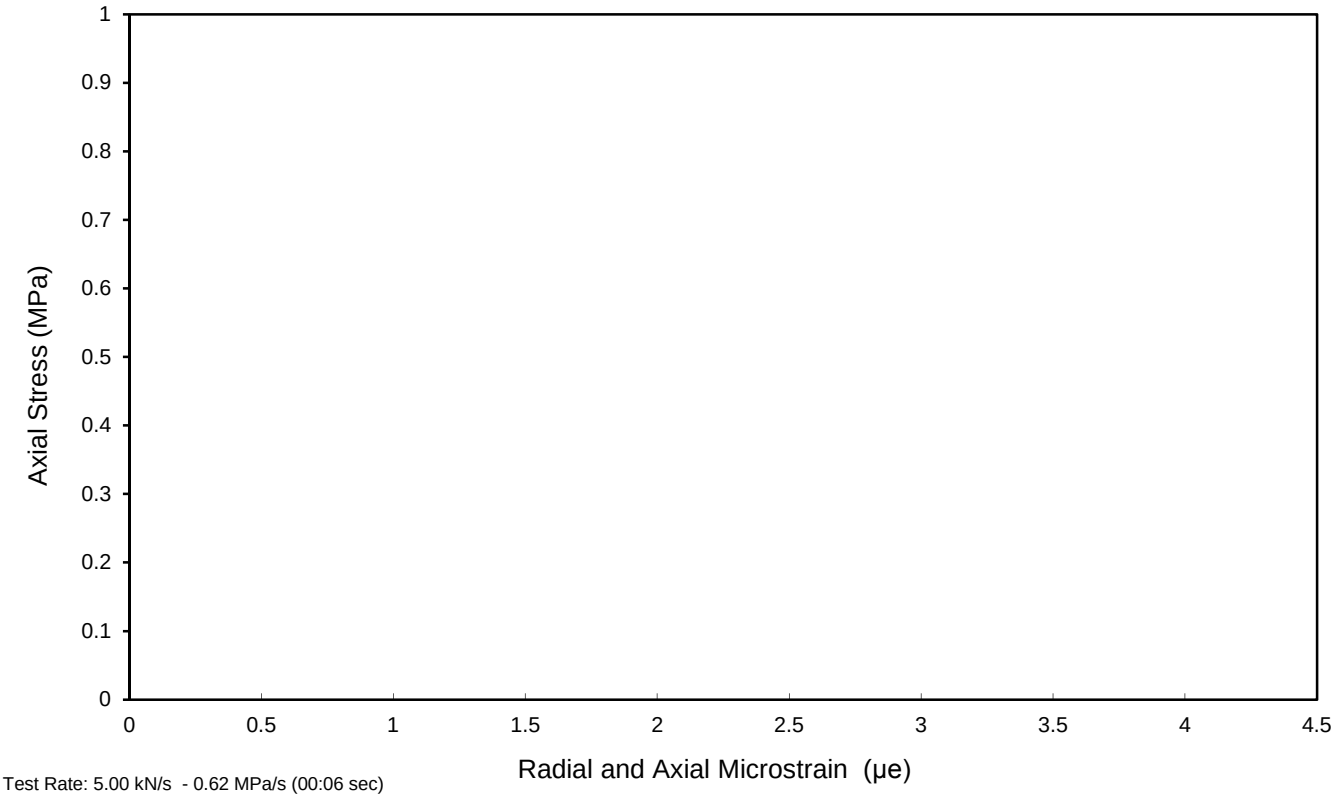
Angle of foliation/Horizontal: 100°
Angle of shear plane/Horizontal: n/a

Date tested: 29/10/2019

Sample type	C

Test results

Unconfined Compressive Strength	3.96 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.62 MPa/s (00:06 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71811
Sample Ref.:	-
Depth (m):	50.05-50.50

Description:
White CHALK

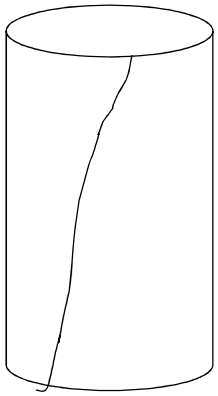
LF0879C (1000kN) compression frame used

Diameter	101.60 mm
Height	248.70 mm
Bulk Density	2.05 Mg/m³
Dry Density	1.69 Mg/m³
Water Content	21 %

Degree of Saturation: 95.6 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

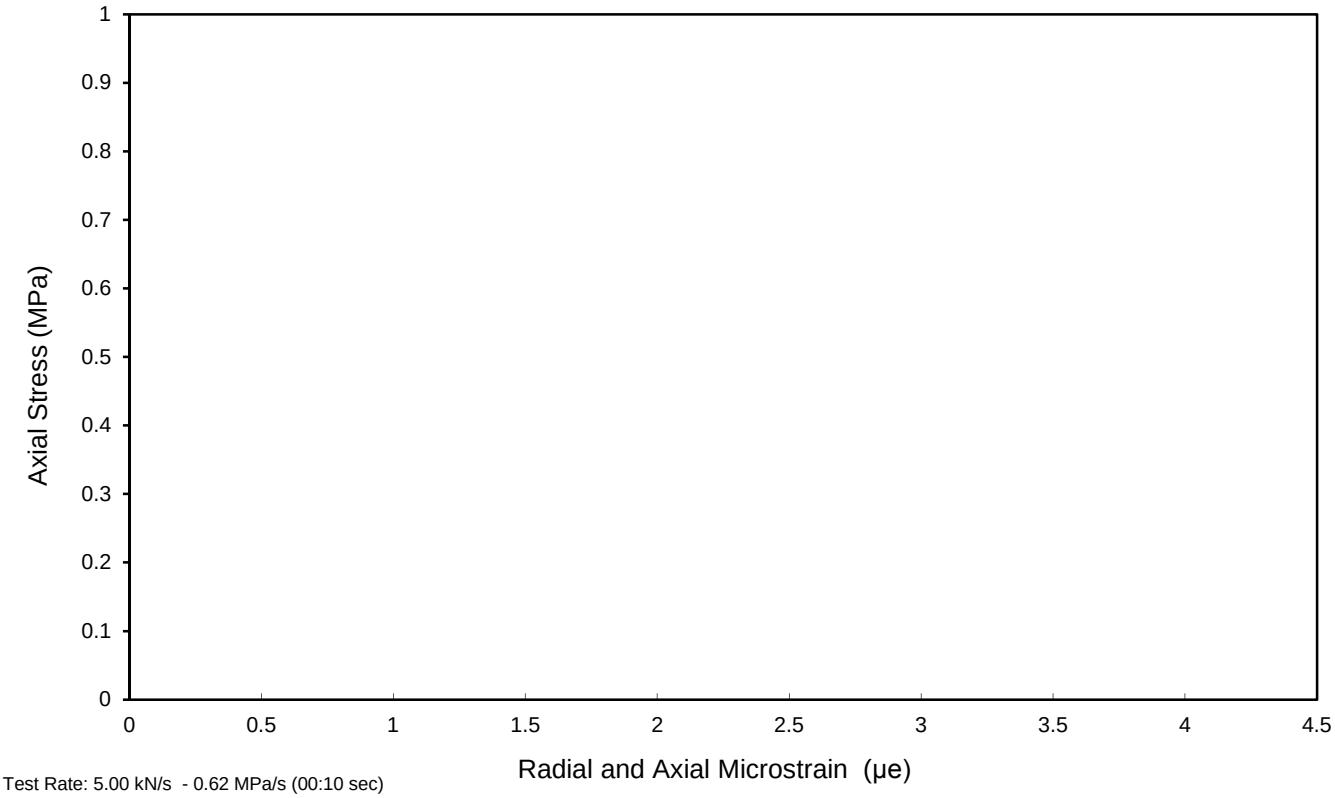
Angle of foliation/Horizontal: 110°
Angle of shear plane/Horizontal: n/a

Sample type	C

Date tested: 29/10/2019

Test results

Unconfined Compressive Strength	6.24 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.62 MPa/s (00:10 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30033

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
R71206		12.07-12.27	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	25	**91.3**	**85.5**

Note: Tap water used as slaking fluid.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30034

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71206		14.50-14.74	White CHALK	25	94.8	1.98	1.59	101.30	224.60	2.2	12.1	1.5		29/10/19	Failed on weakness plane
R71804		4.43-4.66	White CHALK	24	98.7	2.02	1.62	100.10	243.40	2.4	23.7	3.01		29/10/19	
R71804		13.31-13.63	White CHALK	28	100	1.96	1.53	99.50	245.60	2.5	16.1	2.07		29/10/19	
R71804		24.34-24.70	White CHALK	21	88.1	1.99	1.64	100.20	245.60	2.5	17.1	2.17		29/10/19	
R71804		33.12-33.54	White CHALK	25	96.6	1.99	1.59	97.40	201.40	2.1	15.1	2.03		29/01/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30034

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71206
Sample Ref.:	-
Depth (m):	14.50-14.74

Description:
White CHALK

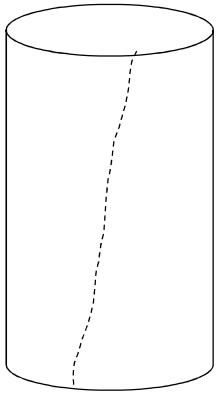
LF0879C (1000kN) compression frame used

Diameter	101.30 mm
Height	224.60 mm
Bulk Density	1.98 Mg/m³
Dry Density	1.59 Mg/m³
Water Content	25 %

Degree of Saturation: 94.8 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

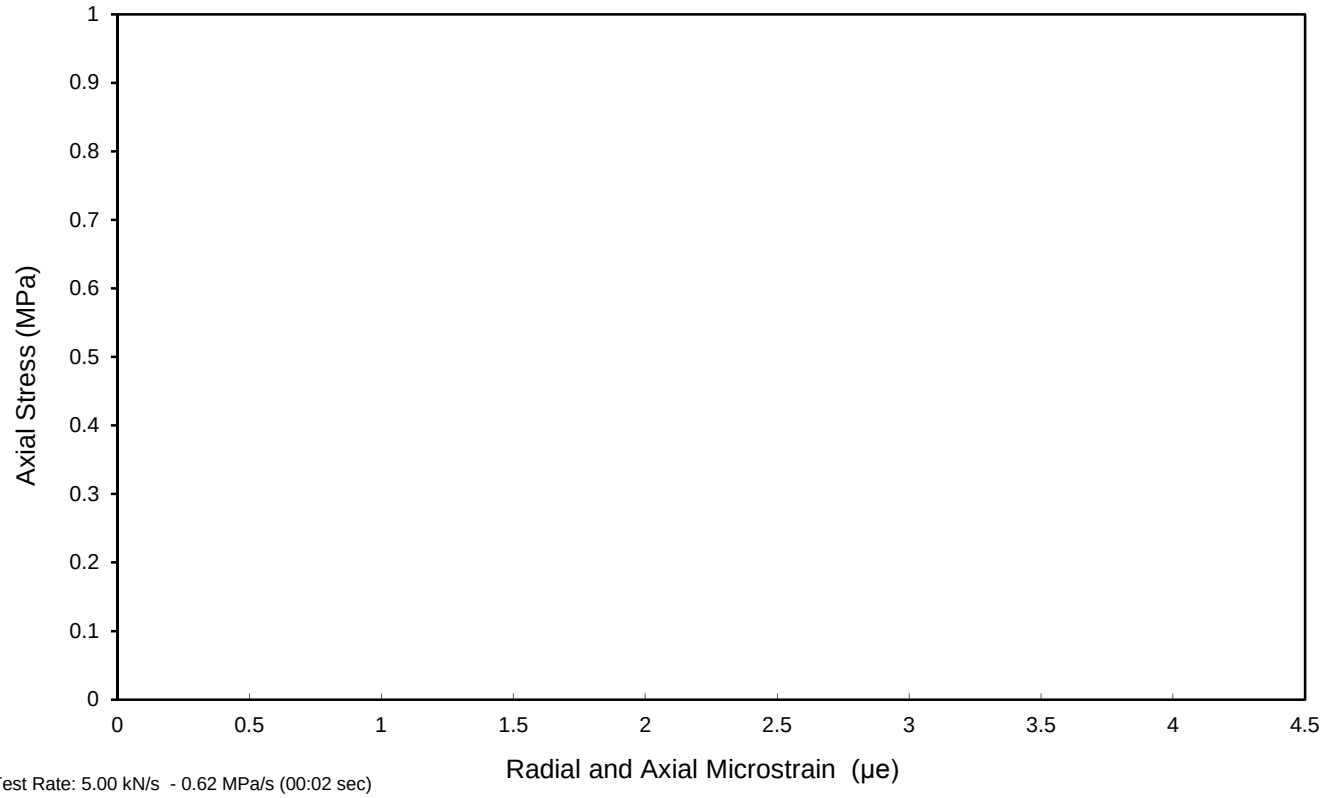
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 110°

Date tested: 29/10/2019

Sample type	C

Test results

Unconfined Compressive Strength	1.5 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.62 MPa/s (00:02 sec)

Remarks: Failed on weakness plane

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30034

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A303 Amesbury to Berwick Down - Phase 7A GI

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS

Borehole Ref.:	R71804
Sample Ref.:	-
Depth (m):	4.43-4.66

Description:
White CHALK

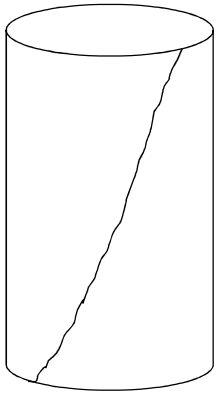
LF0879C (1000kN) compression frame used

Diameter	100.10 mm
Height	243.40 mm
Bulk Density	2.02 Mg/m³
Dry Density	1.62 Mg/m³
Water Content	24 %

Degree of Saturation: 98.7 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

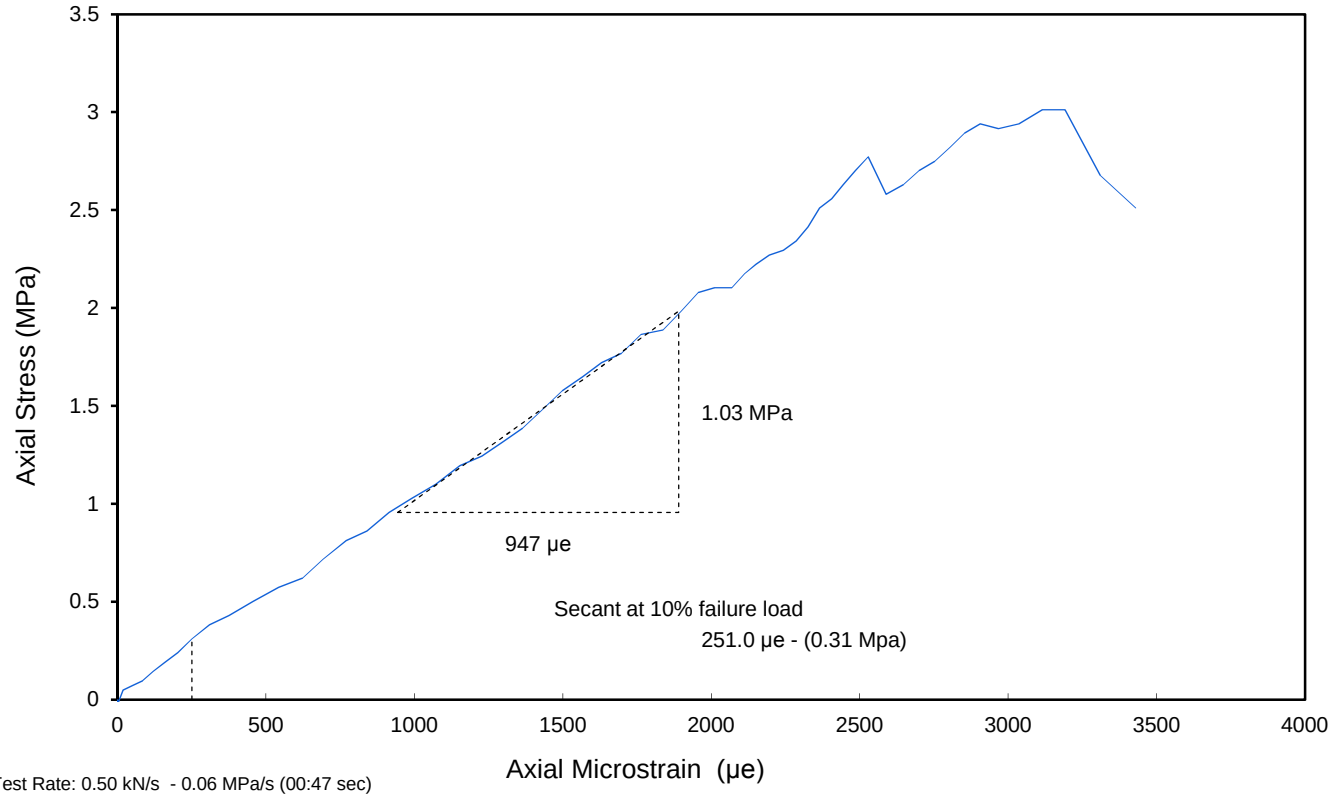
Date tested: 29/10/2019

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 110°

Sample type	C

Test results

Unconfined Compressive Strength	3.01 MPa
Young's Modulus (tangential at 50% failure load)	1.09 GPa
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	1.24 GPa
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 0.50 kN/s - 0.06 MPa/s (00:47 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30034

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71804
Sample Ref.:	-
Depth (m):	13.31-13.63

Description:
White CHALK

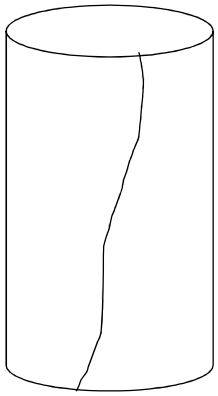
LF0879C (1000kN) compression frame used

Diameter	99.50 mm
Height	245.60 mm
Bulk Density	1.96 Mg/m³
Dry Density	1.53 Mg/m³
Water Content	28 %

Degree of Saturation: 100 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

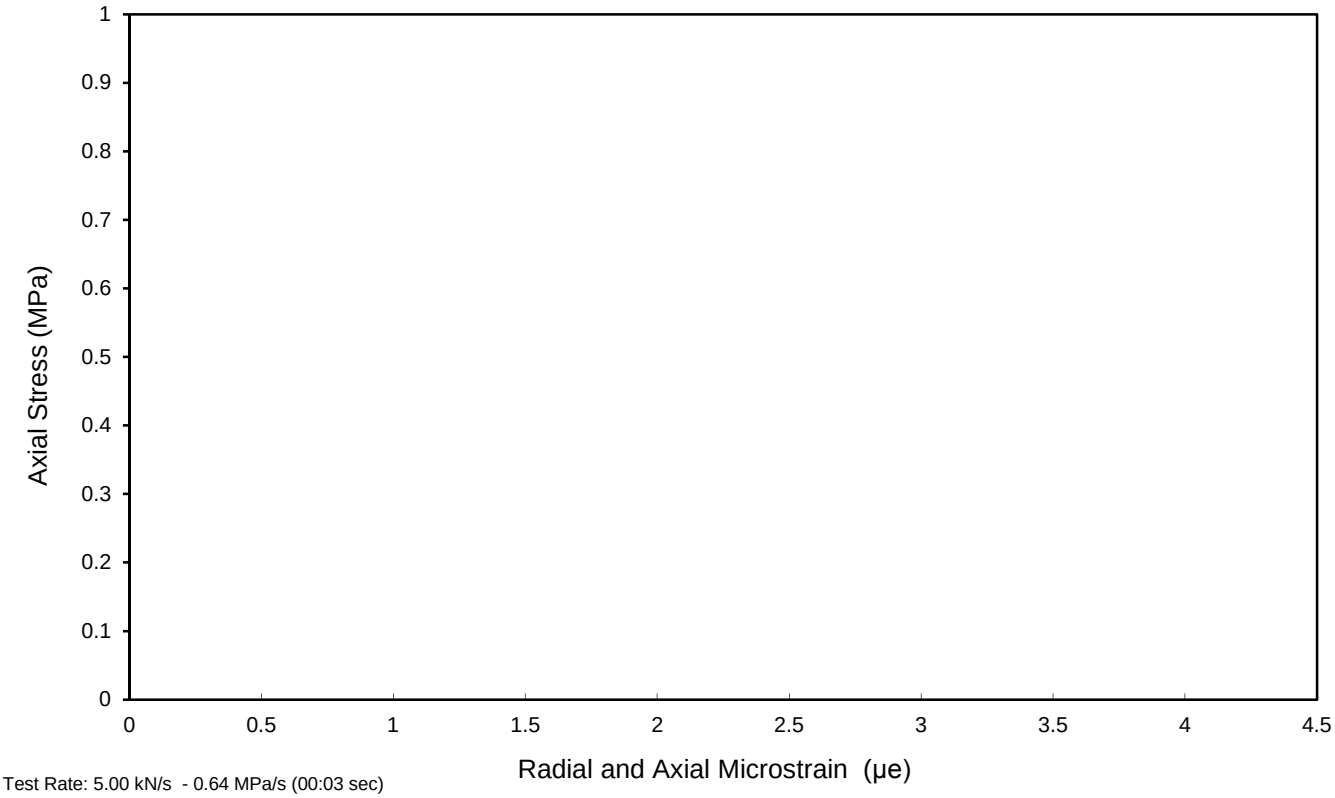
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 100°

Date tested: 29/10/2019

Sample type	C

Test results

Unconfined Compressive Strength	2.07 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.64 MPa/s (00:03 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30034

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

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ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71804
Sample Ref.:	-
Depth (m):	24.34-24.70

Description:
White CHALK

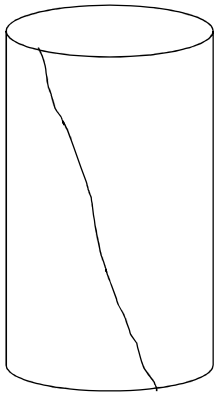
LF0879C (1000kN) compression frame used

Diameter	100.20 mm
Height	245.60 mm
Bulk Density	1.99 Mg/m³
Dry Density	1.64 Mg/m³
Water Content	21 %

Degree of Saturation: 88.1 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

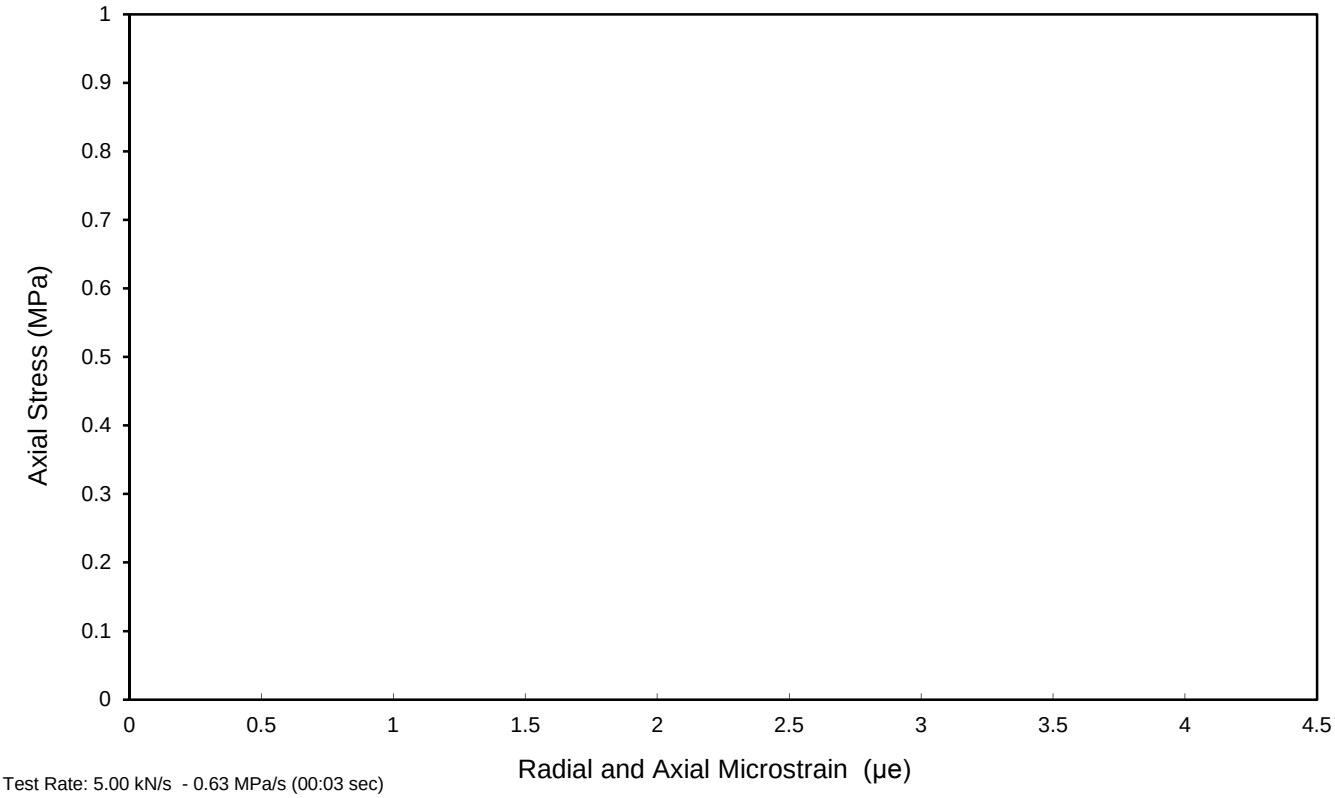
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 65°

Date tested: 29/10/2019

Sample type	C

Test results

Unconfined Compressive Strength	2.17 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a



Test Rate: 5.00 kN/s - 0.63 MPa/s (00:03 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30034

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

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UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71804
Sample Ref.:	-
Depth (m):	33.12-33.54

Description:
White CHALK

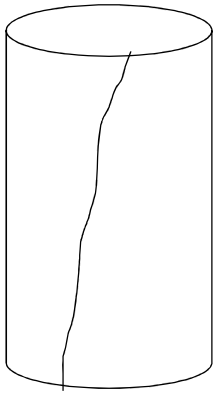
LF0879C (1000kN) compression frame used

Diameter	97.40 mm
Height	201.40 mm
Bulk Density	1.99 Mg/m³
Dry Density	1.59 Mg/m³
Water Content	25 %

Degree of Saturation: 96.6 % Specific Gravity: 2.7 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

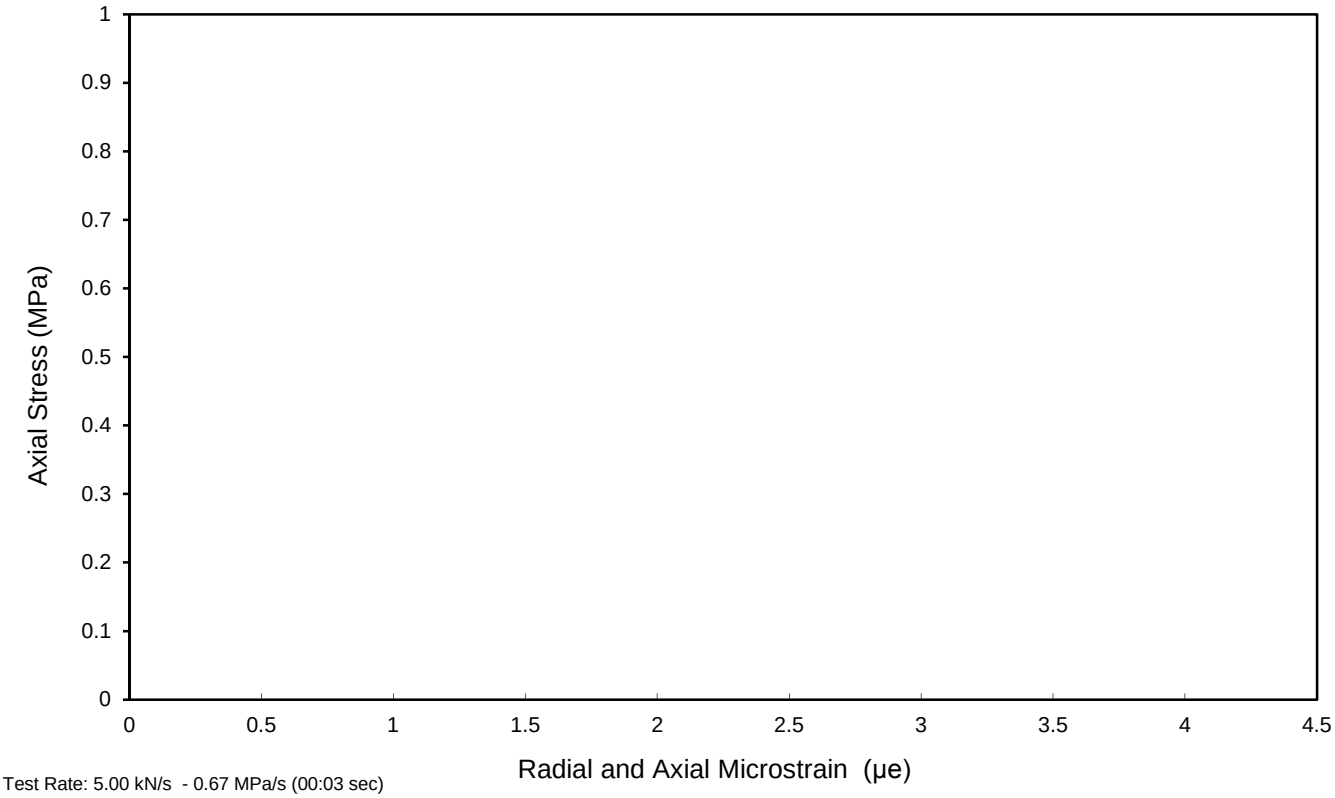
Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 105°

Date tested: 29/01/2019

Test results

Unconfined Compressive Strength	2.03 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type	**C**



Test Rate: 5.00 kN/s - 0.67 MPa/s (00:03 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 30/10/2019

Project Number:

GEO / 30034

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
R71205	-	6.10-6.23	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	23	**92.8**	**87.6**

Note: Tap water used as slaking fluid.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 29/10/2019

Project Number:

GEO / 30056

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
R71207		10.00-10.20	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	26	**88.4**	**81.9**
R71212		13.67-13.90	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK	23	**92.0**	**87.1**

Note: Tap water used as slaking fluid.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/10/2019

Project Number:

GEO / 30057

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71207		15.00-15.32	White CHALK	24	95.6	2.00	1.61	99.70	245.20	2.5	22.8	2.92		23/10/19	
R71212		6.25-6.48	White CHALK	24	96.4	2.00	1.61	98.30	200.10	2.0	9.3	1.23		23/10/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/10/2019

Project Number:

GEO / 30057

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71207
Sample Ref.:	-
Depth (m):	15.00-15.32

Description:
White CHALK

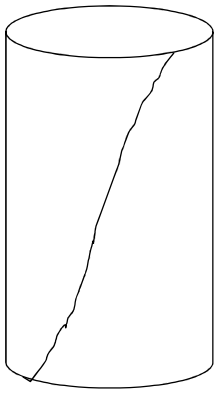
Diameter	99.70 mm
Height	245.20 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.61 Mg/m³
Water Content	24 %

Degree of Saturation: 95.6 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 110°

Sample type	C

Date tested: 23/10/2019

Test results

Unconfined Compressive Strength	2.92 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/10/2019

Project Number:

GEO / 30057

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.:	R71212
Sample Ref.:	-
Depth (m):	6.25-6.48

Description:
White CHALK

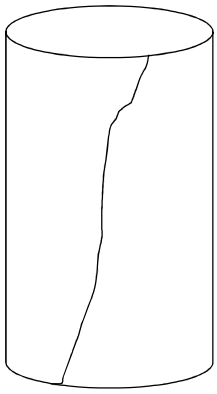
Diameter	98.30 mm
Height	200.10 mm
Bulk Density	2.00 Mg/m³
Dry Density	1.61 Mg/m³
Water Content	24 %

Degree of Saturation: 96.4 % Specific Gravity: 2.7 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Angle of foliation/Horizontal: n/a
Angle of shear plane/Horizontal: 100°

Sample type	C

Date tested: 23/10/2019

Test results

Unconfined Compressive Strength	1.23 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are not met.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 25/10/2019

Project Number:

GEO / 30057

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

UKAS TESTING 1982

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

DETERMINATION OF THE SLAKE-DURABILITY INDEX

Sample details				Water Temp. (ºC)	Appearance of fragments after 2nd cycle	Natural Water Content (%)	1st Cycle	2nd Cycle
Borehole Ref.	Sample Ref.	Depth (m)	Description				Slake Durability Index $I_{d(1)}$	Slake Durability Index $I_{d(2)}$
R71208		10.74-11.00	White CHALK	21 ± 2	Retained: Retained specimen remain virtually unchanged. Passing: White CHALK CLAY	24	**89.8**	**84.9**

Note: Tap water used as slaking fluid.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 13/11/2019

Project Number:

GEO / 30218

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS®

ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
R71208		12.67-19.91	White CHALK	25	91.5	1.95	1.56	100.30	247.60	2.5	19.6	2.48		12/11/19	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are not met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

CC

C Clergeaud (Snr. Geologist)

Date: 13/11/2019

Project Number:

GEO / 30218

Project Name:

A303 Amesbury to Berwick Down - Phase 7A GI

PC197626

GEOLABS®

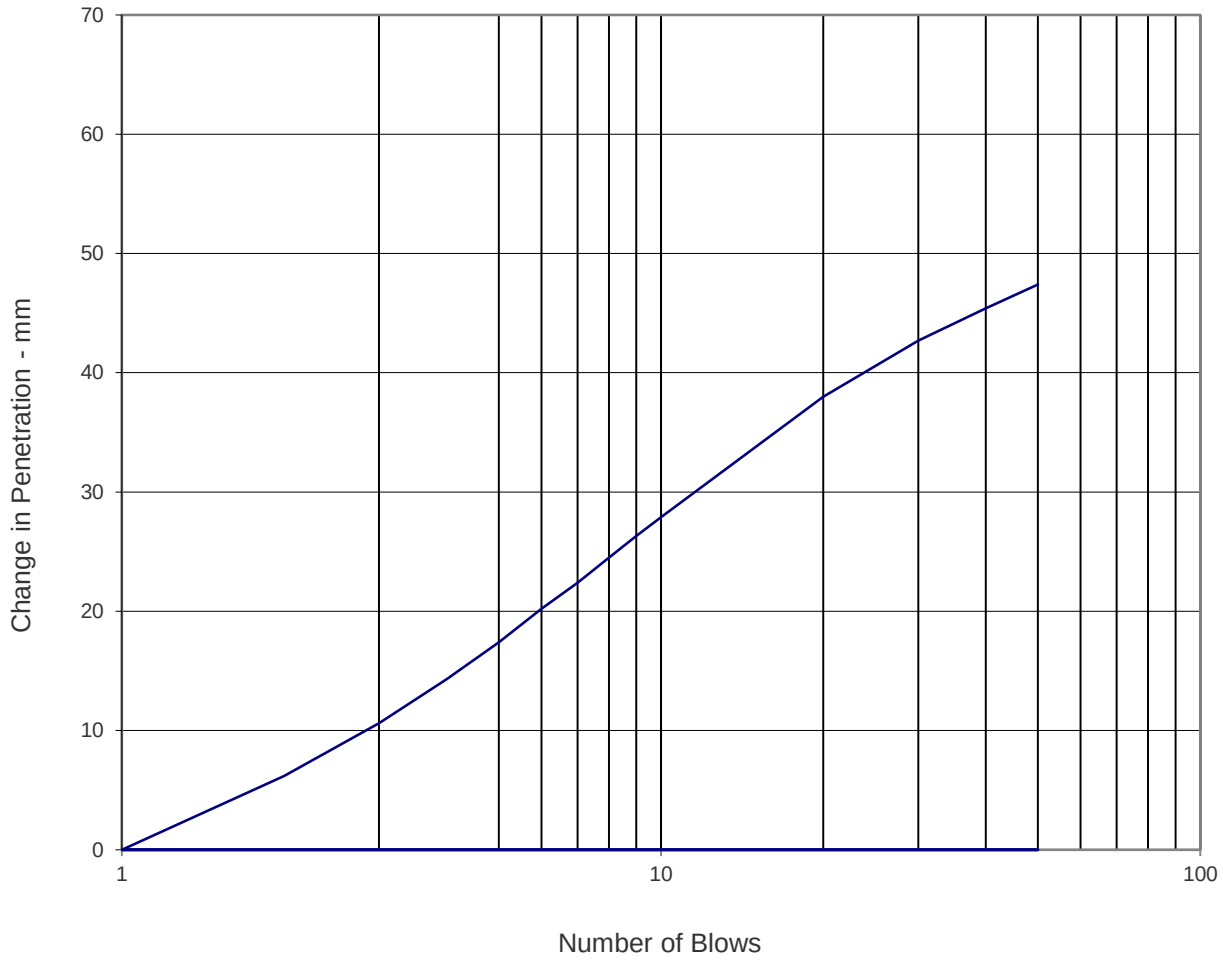
UKAS TESTING 1982

BS1377:Part 4:1990 Clause 6

CHALK CRUSHING VALUE

BH/TP No	STP70102
Depth (m)	3.00
Sample Type	B

Description:
White silt to gravel sized CHALK lumps with some flint gravel.



Material retained on 10mm test sieve	%	68.5				
Determination No		1				
Chalk crushing value		3.6				
Moisture content	%	19.1				
Mean chalk crushing value		3.6				

Checked and Approved by:

[redacted]

J Sturges - Operations Manager
27/11/2019

Project Number:
GEO/30295

Project Name:
A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

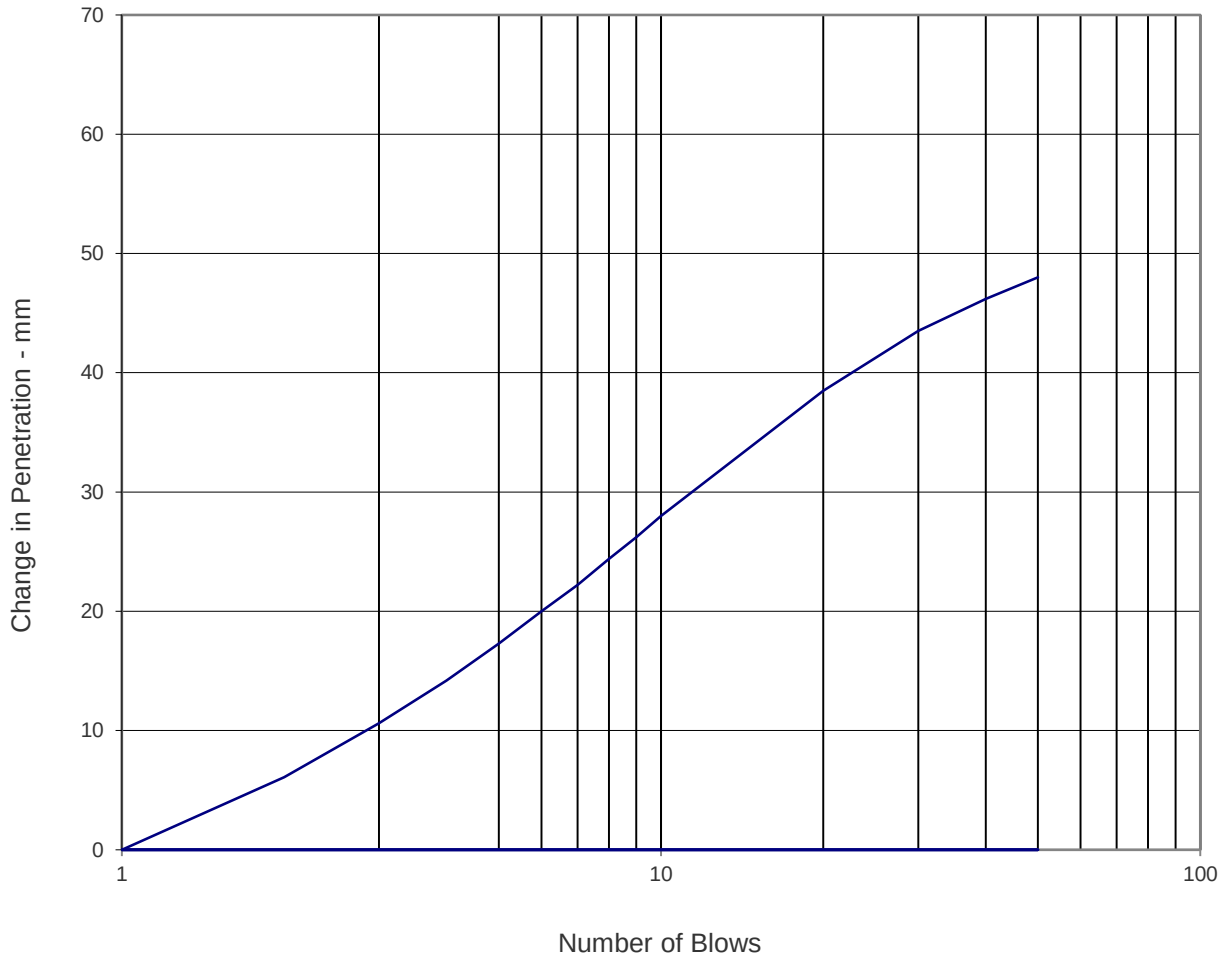
GEOLABS

BS1377:Part 4:1990 Clause 6

CHALK CRUSHING VALUE

BH/TP No	STP71402
Depth (m)	1.20
Sample Type	B

Description:
White silt to coarse gravel sized CHALK.



Material retained on 10mm test sieve	%	52.8				
Determination No		1				
Chalk crushing value		3.9				
Moisture content	%	21.5				
Mean chalk crushing value		3.9				

Checked and Approved by:

[redacted]

J Sturges - Operations Manager
27/11/2019

Project Number:
GEO/30295

Project Name:
A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

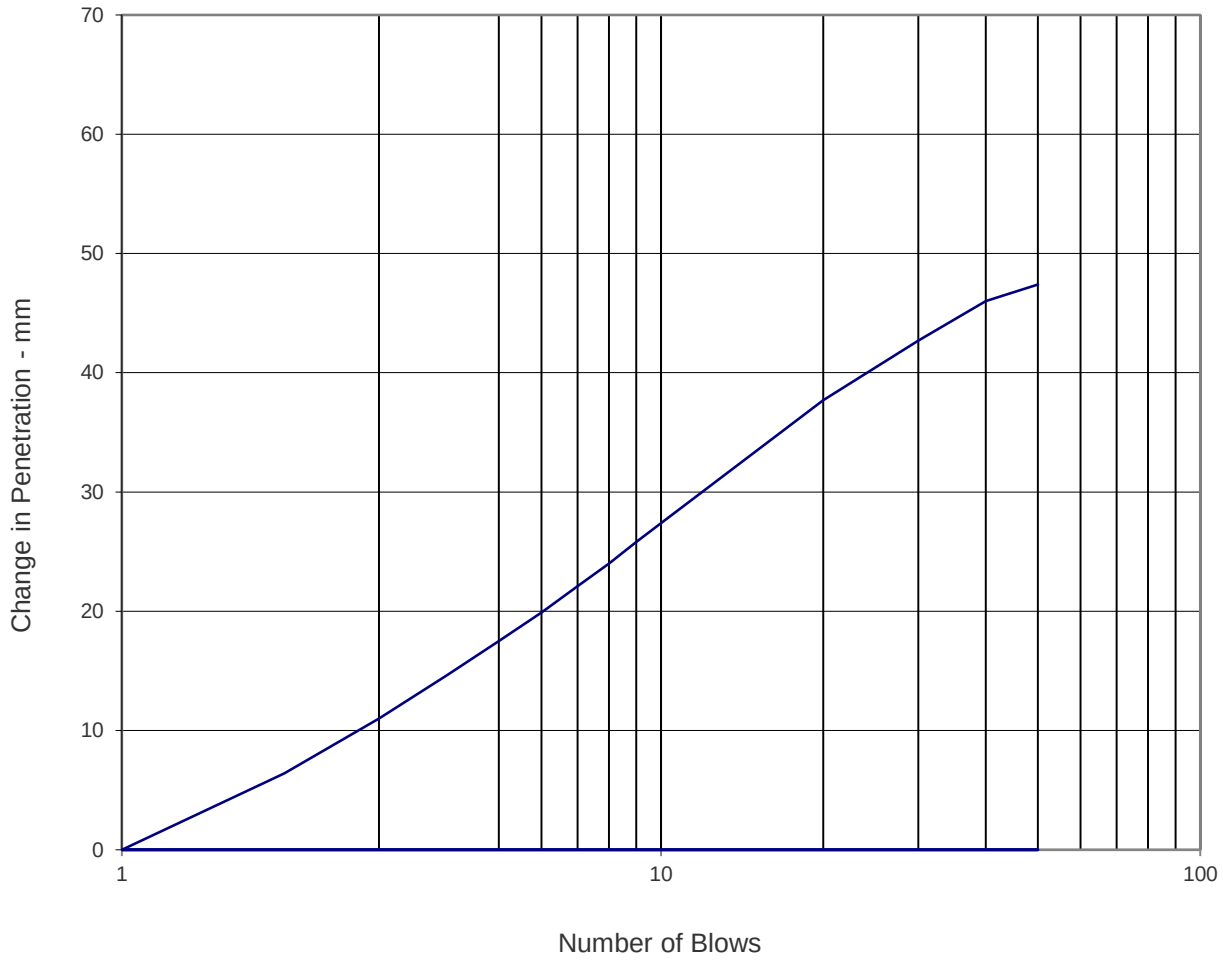
GEOLABS

BS1377:Part 4:1990 Clause 6

CHALK CRUSHING VALUE

BH/TP No	STP71404
Depth (m)	3.50
Sample Type	B

Description:
White silt to coarse gravel sized CHALK.



Material retained on 10mm test sieve	%	40.5				
Determination No		1				
Chalk crushing value		3.5				
Moisture content	%	22.1				
Mean chalk crushing value		3.5				

Checked and Approved by:
[redacted]
J Sturges - Operations Manager
27/11/2019

Project Number:
GEO/30295

Project Name:
A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

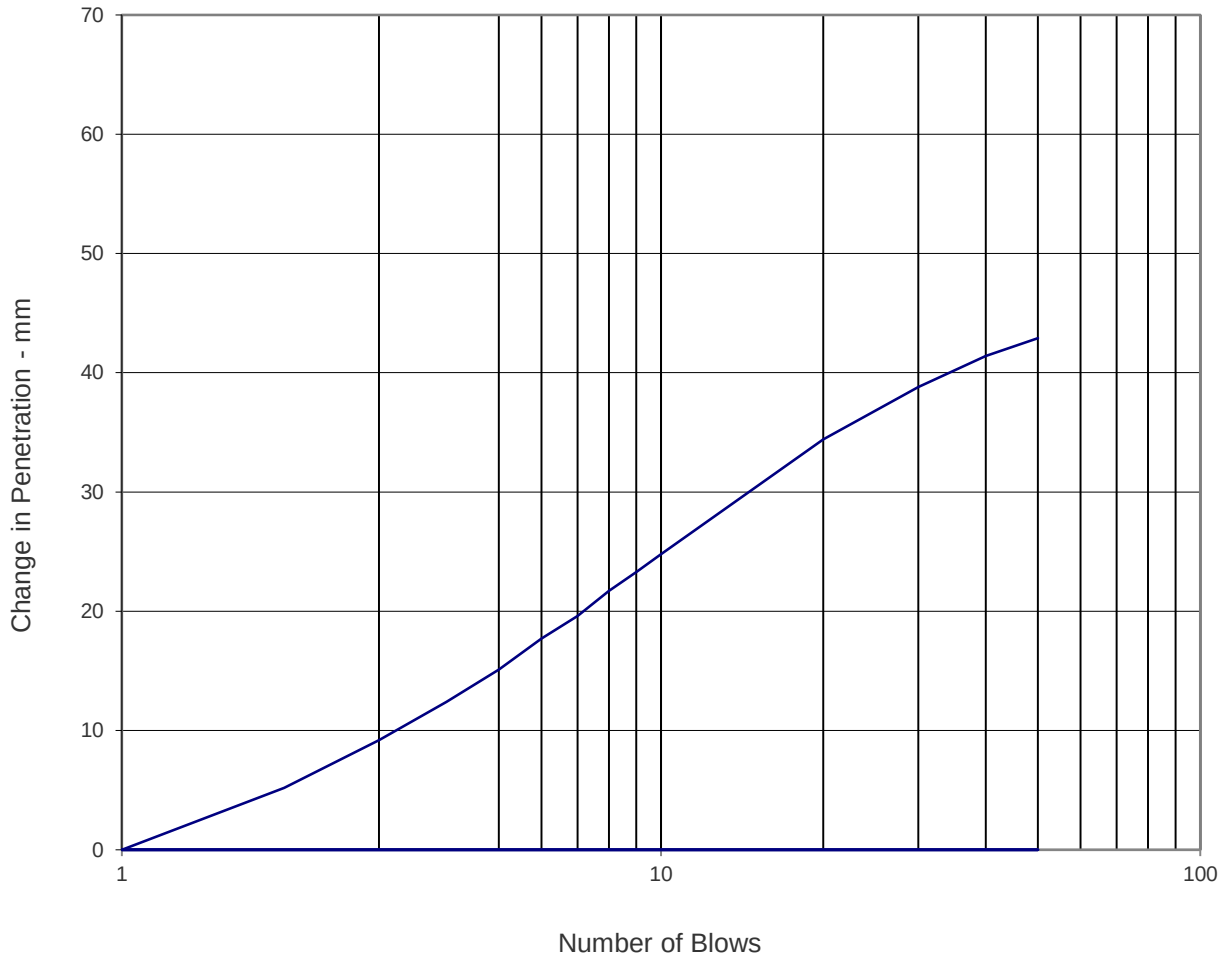
GEOLABS

BS1377:Part 4:1990 Clause 6

CHALK CRUSHING VALUE

BH/TP No	STP71602
Depth (m)	0.60
Sample Type	B

Description:
Light brown clayey silt to fine gravel sized CHALK.



Material retained on 10mm test sieve	%	30.2				
Determination No		1				
Chalk crushing value		3.6				
Moisture content	%	11.9				
Mean chalk crushing value		3.6				

Checked and Approved by:

[redacted]

J Sturges - Operations Manager
27/11/2019

Project Number:
GEO/30295

Project Name:
A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

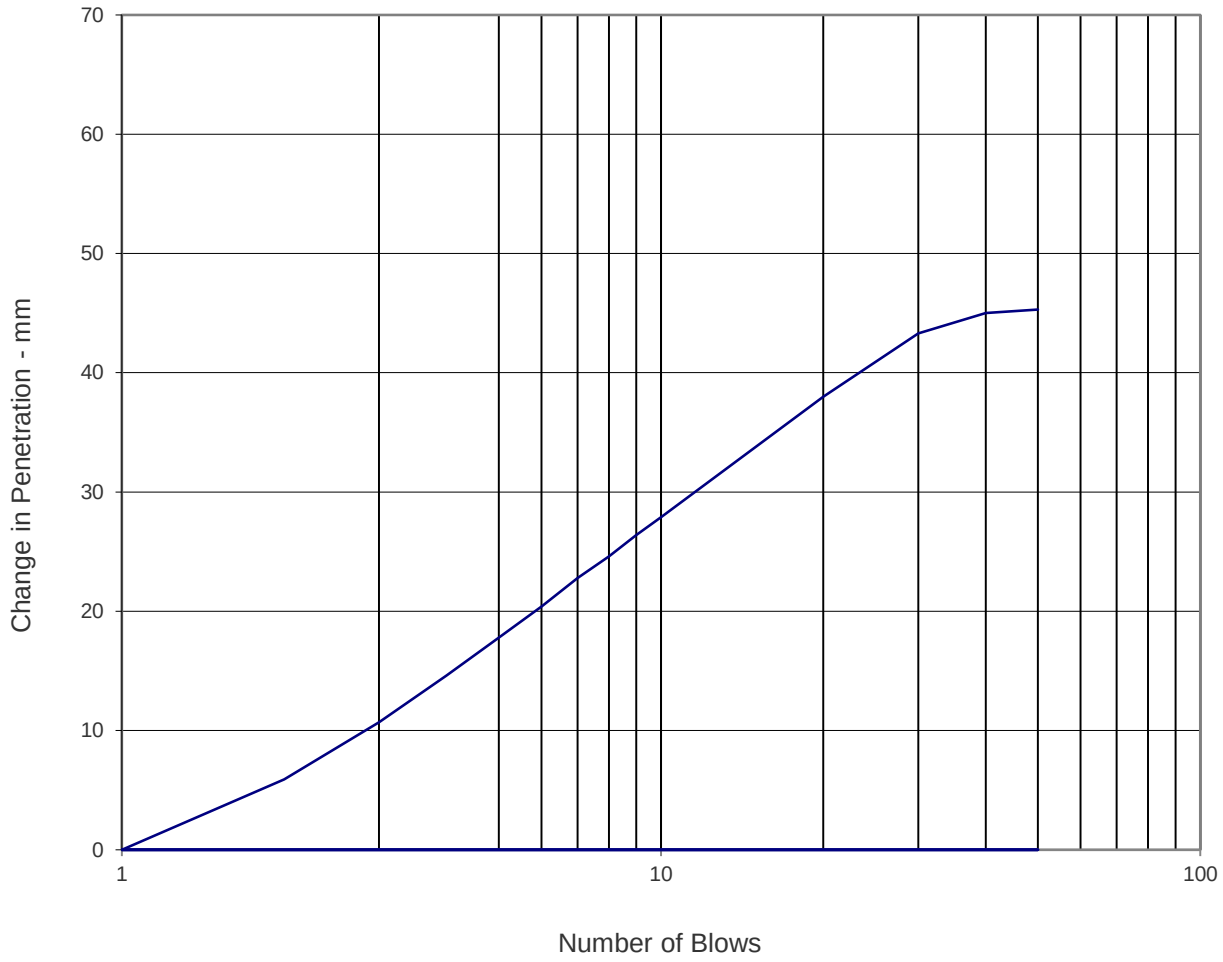
GEOLABS®

BS1377:Part 4:1990 Clause 6

CHALK CRUSHING VALUE

BH/TP No	STP71604
Depth (m)	3.50
Sample Type	B

Description:
White silt to coarse gravel sized CHALK.



Material retained on 10mm test sieve	%	48.9				
Determination No		1				
Chalk crushing value		3.6				
Moisture content	%	22.8				
Mean chalk crushing value		3.6				

Checked and Approved by:

[redacted]

J Sturges - Operations Manager
27/11/2019

Project Number:
GEO/30295

Project Name:
A303 Amesbury to Berwick Down - Phase 7A GI
PC197626

GEOLABS

APPENDIX 12

Laboratory Test Results - Contamination

Certificate of Analysis

Certificate Number 19-16758

05-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-16758

Client Reference PC197626

Order No (not supplied)

Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Description 2 Soil samples.

Date Received 29-Aug-19

Date Started 29-Aug-19

Date Completed 05-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 19-16758
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Sample ID	Depth	Lab No	Completed	Matrix Description
R71819	0.2	1554826	05/09/2019	Brown gravelly, clayey SAND
R71819	0.60-0.80	1554827	05/09/2019	White sandy CLAY

Summary of Chemical Analysis
Soil Samples

Our Ref 19-16758
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1554826	1554827
Sample ID	R71819	R71819
Depth	0.20	0.60-0.80
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	19/08/19	19/08/19
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	4.7	0.6
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	< 0.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.6	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.9	0.2
Chromium III	DETSC 2301*	0.15	mg/kg	11	0.85
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	12	1.8
Iron	DETSC 2301	25	mg/kg	10000	1100
Lead	DETSC 2301#	0.3	mg/kg	32	1.3
Manganese	DETSC 2301#	20	mg/kg	720	210
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4	< 0.4
Nickel	DETSC 2301#	1	mg/kg	7.5	1.2
Phosphorus	DETSC 2301*	1	mg/kg	1000	480
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	40	9.2
Inorganics					
pH	DETSC 2008#		pH	7.8	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	2.8	< 0.1
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	2.6	< 0.50
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	20	< 10
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-16758
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1554826	1554827
			Sample ID	R71819	R71819
			Depth	0.20	0.60-0.80
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	19/08/19	19/08/19
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

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

Summary of Asbestos Analysis
Soil Samples

Our Ref 19-16758
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1554826	R71819 0.20	SOIL	NAD	none	Jordan Eadington

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

Information in Support of the Analytical Results

Our Ref 19-16758
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1554826	R71819 0.20 SOIL	19/08/19	GJ 250ml, GJ 60ml, PT 1L x2	pH + Conductivity (7 days)	
1554827	R71819 0.60-0.80 SOIL	19/08/19	GJ 250ml, GJ 60ml, PT 1L x2	pH + Conductivity (7 days)	

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number 19-16784

04-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-16784

Client Reference PC197626

Order No (not supplied)

Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Description One Soil sample.

Date Received 23-Aug-19

Date Started 29-Aug-19

Date Completed 04-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-16784
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1554954
Sample ID	R71816
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	20/08/19
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Antimony	DETSC 2301*	1	mg/kg	1.3
Arsenic	DETSC 2301#	0.2	mg/kg	8.5
Beryllium	DETSC 2301#	0.2	mg/kg	0.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.7
Chromium III	DETSC 2301*	0.15	mg/kg	23
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	17
Iron	DETSC 2301	25	mg/kg	19000
Lead	DETSC 2301#	0.3	mg/kg	22
Manganese	DETSC 2301#	20	mg/kg	1100
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.6
Nickel	DETSC 2301#	1	mg/kg	16
Phosphorus	DETSC 2301*	1	mg/kg	890
Selenium	DETSC 2301#	0.5	mg/kg	0.8
Zinc	DETSC 2301#	1	mg/kg	66
Inorganics				
pH	DETSC 2008#		pH	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2
Total Organic Carbon	DETSC 2002	0.1	%	3.6
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	2.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	50
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-16784
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1554954
Sample ID	R71816
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	20/08/19
Sampling Time	n/s

Test	Method	LOD	Units	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5

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

Information in Support of the Analytical Results

Our Ref 19-16784
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1554954	R71816 0.20 SOIL	20/08/19	GJ 250ml, GJ 60ml, PT 1L x2		

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-17130

12-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-17130

Client Reference PC197626

Order No (not supplied)

Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Description One Soil sample.

Date Received 03-Sep-19

Date Started 03-Sep-19

Date Completed 12-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 19-17130
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Sample ID	Depth	Lab No	Completed	Matrix Description
R71812	0.2	1557234	12/09/2019	Brown gravelly, very sandy CLAY and CLAY including odd rootlets

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17130
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1557234
Sample ID	R71812
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	27/08/19
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Antimony	DETSC 2301*	1	mg/kg	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	5.5
Beryllium	DETSC 2301#	0.2	mg/kg	0.5
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.8
Chromium III	DETSC 2301*	0.15	mg/kg	15
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	13
Iron	DETSC 2301	25	mg/kg	11000
Lead	DETSC 2301#	0.3	mg/kg	17
Manganese	DETSC 2301#	20	mg/kg	820
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4
Nickel	DETSC 2301#	1	mg/kg	10
Phosphorus	DETSC 2301*	1	mg/kg	890
Selenium	DETSC 2301#	0.5	mg/kg	0.5
Zinc	DETSC 2301#	1	mg/kg	46
Inorganics				
pH	DETSC 2008#		pH	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	3.2
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	3.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	52
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17130
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1557234
Sample ID	R71812
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	27/08/19
Sampling Time	n/s

Test	Method	LOD	Units	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.06
Pyrene	DETSC 3303#	0.03	mg/kg	0.05
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.11
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.3

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

Information in Support of the Analytical Results

Our Ref 19-17130
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1557234	R71812 0.20 SOIL	27/08/19	GJ 250ml, GJ 60ml, PT 1L x2		

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number 19-17369

13-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-17369

Client Reference PC197626

Order No OC22453

Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Description One Soil sample.

Date Received 05-Sep-19

Date Started 05-Sep-19

Date Completed 13-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17369
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1558878
Sample ID	R71804
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	03/09/19
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Antimony	DETSC 2301*	1	mg/kg	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	2.1
Beryllium	DETSC 2301#	0.2	mg/kg	< 0.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.5
Chromium III	DETSC 2301*	0.15	mg/kg	7.3
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	5.6
Iron	DETSC 2301	25	mg/kg	1100
Lead	DETSC 2301#	0.3	mg/kg	4.4
Manganese	DETSC 2301#	20	mg/kg	320
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4
Nickel	DETSC 2301#	1	mg/kg	4.4
Phosphorus	DETSC 2301*	1	mg/kg	630
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5
Zinc	DETSC 2301#	1	mg/kg	23
Inorganics				
pH	DETSC 2008#		pH	8.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	1.3
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	25
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17369
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1558878
Sample ID	R71804
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	03/09/19
Sampling Time	n/s

Test	Method	LOD	Units	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3
OCPs				
alpha-BHC	DETSC 3441*	0.1	mg/kg	< 0.1
gamma-BHC (Lindane)	DETSC 3441*	0.1	mg/kg	< 0.1
beta-BHC	DETSC 3441*	0.1	mg/kg	< 0.1
delta-BHC	DETSC 3441*	0.1	mg/kg	< 0.1
Heptachlor	DETSC 3441*	0.1	mg/kg	< 0.1
Aldrin	DETSC 3441*	0.1	mg/kg	< 0.1
Heptachlor epoxide	DETSC 3441*	0.1	mg/kg	< 0.1
gamma-Chlordane	DETSC 3441*	0.1	mg/kg	< 0.1
Endosulphan I & Alpha-chlorodane	DETSC 3441*	0.1	mg/kg	< 0.1
4,4-DDE	DETSC 3441*	0.1	mg/kg	< 0.1
Dieldrin	DETSC 3441*	0.1	mg/kg	< 0.1
Endrin	DETSC 3441*	0.1	mg/kg	< 0.1
Endosulphan II & 4,4-DDD	DETSC 3441*	0.1	mg/kg	< 0.1
Endrin aldehyde	DETSC 3441*	0.1	mg/kg	< 0.1
4,4-DDT	DETSC 3441*	0.1	mg/kg	< 0.1

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17369
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1558878
Sample ID	R71804
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	03/09/19
Sampling Time	n/s

Test	Method	LOD	Units	
Endosulphan sulphate	DETSC 3441*	0.1	mg/kg	< 0.1
Methoxychlor	DETSC 3441*	0.1	mg/kg	< 0.1
Endrin ketone	DETSC 3441*	0.1	mg/kg	< 0.1
OPPs				
Dichlorvos	DETSC 3443*	0.1	mg/kg	< 0.1
Mevinphos	DETSC 3443*	0.1	mg/kg	< 0.1
Demeton-O	DETSC 3443*	0.1	mg/kg	< 0.1
Ethoprop	DETSC 3443*	0.1	mg/kg	< 0.1
Naled	DETSC 3443*	0.1	mg/kg	< 0.1
Phorate	DETSC 3443*	0.1	mg/kg	< 0.1
Demeton-S	DETSC 3443*	0.1	mg/kg	< 0.1
Diazinon	DETSC 3443*	0.1	mg/kg	< 0.1
Disulfoton	DETSC 3443*	0.1	mg/kg	< 0.1
Methylparathion	DETSC 3443*	0.1	mg/kg	< 0.1
Ronnel	DETSC 3443*	0.1	mg/kg	< 0.1
Fenthion	DETSC 3443*	0.1	mg/kg	< 0.1
Chlopyrifos	DETSC 3443*	0.1	mg/kg	< 0.1
Trichlorinate	DETSC 3443*	0.1	mg/kg	< 0.1
Merphos	DETSC 3443*	0.1	mg/kg	< 0.1
Stirofos	DETSC 3443*	0.1	mg/kg	< 0.1
Tokuthion	DETSC 3443*	0.1	mg/kg	< 0.1
Fensulfothion	DETSC 3443*	0.1	mg/kg	< 0.1
Bolstar	DETSC 3443*	0.1	mg/kg	< 0.1
Azinphos methyl	DETSC 3443*	0.1	mg/kg	< 0.1
Coumaphos	DETSC 3443*	0.1	mg/kg	< 0.1
Triazines				
Atraton	DETSC 3445*	0.1	mg/kg	< 0.1
Prometon	DETSC 3445*	0.1	mg/kg	< 0.1
Simazine	DETSC 3445*	0.1	mg/kg	< 0.1
Atrazine	DETSC 3445*	0.1	mg/kg	< 0.1
Propazine	DETSC 3445*	0.1	mg/kg	< 0.1
Terbuthylazine	DETSC 3445*	0.1	mg/kg	< 0.1
Secbumeton	DETSC 3445*	0.1	mg/kg	< 0.1
Symetryn	DETSC 3445*	0.1	mg/kg	< 0.1
Ametryn	DETSC 3445*	0.1	mg/kg	< 0.1
Prometryne	DETSC 3445*	0.1	mg/kg	< 0.1
Terbutryn	DETSC 3445*	0.1	mg/kg	< 0.1

Information in Support of the Analytical Results

Our Ref 19-17369
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1558878	R71804 0.20 SOIL	03/09/19	GJ 250ml, GJ 60ml, PT 1L x2		

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-17804

18-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-17804

Client Reference PC197626

Order No (not supplied)

Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Description 4 Soil samples.

Date Received 11-Sep-19

Date Started 11-Sep-19

Date Completed 18-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 19-17804
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Sample ID	Depth	Lab No	Completed	Matrix Description
R71802	0.2	1561612	18/09/2019	U/S (sample matrix outside MCERTS scope of accreditation)
R71802	0.5	1561613	18/09/2019	U/S (sample matrix outside MCERTS scope of accreditation)
STP71403	0.2	1561614	18/09/2019	U/S (sample matrix outside MCERTS scope of accreditation)
STP71401	0.3	1561615	18/09/2019	U/S (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17804
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1561612	1561613	1561614	1561615
			Sample ID	R71802	R71802	STP71403	STP71401
			Depth	0.20	0.50	0.20	0.30
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/09/19	05/09/19	05/09/19	05/09/19
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0	1.1	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	3.5	1.1	9.7	9.3
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	< 0.2	0.8	0.7
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.6	< 0.2	0.5	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.3	0.6	0.6
Chromium III	DETSC 2301*	0.15	mg/kg	9.6	1.2	26	24
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	9.9	1.5	13	15
Iron	DETSC 2301	25	mg/kg	7200	820	19000	20000
Lead	DETSC 2301#	0.3	mg/kg	10	1.4	20	17
Manganese	DETSC 2301#	20	mg/kg	600	170	880	850
Mercury	DETSC 2325#	0.05	mg/kg	0.06	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4	< 0.4	0.5	0.6
Nickel	DETSC 2301#	1	mg/kg	6.7	1.4	17	19
Phosphorus	DETSC 2301*	1	mg/kg	980	370	980	910
Selenium	DETSC 2301#	0.5	mg/kg	0.8	0.7	< 0.5	0.5
Zinc	DETSC 2301#	1	mg/kg	43	10	78	67
Inorganics							
pH	DETSC 2008#		pH	8.1	8.5	7.9	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	2.5	0.2	2.4	2.0
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	1.1	2.9	1.2	2.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	52	< 10	16	15
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-17804
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1561612	1561613	1561614	1561615
			Sample ID	R71802	R71802	STP71403	STP71401
			Depth	0.20	0.50	0.20	0.30
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/09/19	05/09/19	05/09/19	05/09/19
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.07	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.7	< 0.3	0.4	0.3

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

Information in Support of the Analytical Results

Our Ref 19-17804
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1561612	R71802 0.20 SOIL	05/09/19	GJ 250ml, GJ 60ml, PT 500ml		
1561613	R71802 0.50 SOIL	05/09/19	GJ 250ml, GJ 60ml, PT 500ml		
1561614	STP71403 0.20 SOIL	05/09/19	GJ 250ml, GJ 60ml, PT 500ml x2		
1561615	STP71401 0.30 SOIL	05/09/19	GJ 250ml, GJ 60ml, PT 500ml x2		

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number 19-18439

24-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-18439

Client Reference PC197626

Order No OC22453

Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Description 4 Soil samples, 3 Leachate samples.

Date Received 17-Sep-19

Date Started 18-Sep-19

Date Completed 24-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18439
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1565554	1565555	1565556	1565557
			Sample ID	R71202	R71204	R71204	R71803
			Depth	0.50	0.20	0.50	0.20
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	11/09/19	11/09/19	11/09/19	11/09/19
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	0.6	5.6	1.1	4.5
Beryllium	DETSC 2301#	0.2	mg/kg	< 0.2	0.5	< 0.2	0.4
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	< 0.2	0.6	< 0.2	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.7	0.2	0.9
Chromium III	DETSC 2301*	0.15	mg/kg	0.86	15	2.8	13
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	1.1	12	2.6	15
Iron	DETSC 2301	25	mg/kg	830	12000	2300	9400
Lead	DETSC 2301#	0.3	mg/kg	0.7	17	1.8	15
Manganese	DETSC 2301#	20	mg/kg	55	740	180	770
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4	0.4	< 0.4	< 0.4
Nickel	DETSC 2301#	1	mg/kg	< 1.0	12	3.1	9.4
Phosphorus	DETSC 2301*	1	mg/kg	95	1200	390	1300
Selenium	DETSC 2301#	0.5	mg/kg	0.7	< 0.5	0.6	< 0.5
Zinc	DETSC 2301#	1	mg/kg	6.9	61	15	61
Inorganics							
pH	DETSC 2008#		pH	8.2	8.1	8.5	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.4	< 0.1	0.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	< 0.1	0.2
Total Organic Carbon	DETSC 2002	0.1	%	0.3	2.3	0.2	3.6
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	0.98	4.1	< 0.50	5.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	15	15	< 10	24
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	1.9	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	37	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	39	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18439
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1565554	1565555	1565556	1565557
			Sample ID	R71202	R71204	R71204	R71803
			Depth	0.50	0.20	0.50	0.20
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	11/09/19	11/09/19	11/09/19	11/09/19
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	39	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.8	< 0.3	0.5

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

Summary of Chemical Analysis
Leachate Samples

Our Ref 19-18439
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1565558	1565559	1565560
			Sample ID	R71202	R71204	R71803
			Depth	0.50	0.20	0.20
			Other ID			
			Sample Type	LEACHATE	LEACHATE	LEACHATE
			Sampling Date	11/09/19	11/09/19	11/09/19
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Preparation						
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y	Y
Metals						
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.26	0.61	0.23
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.1	0.86	0.71
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	13	18	26
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	7.8	5.0	13
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.9	1.5	0.8
Iron, Dissolved	DETSC 2306	5.5	ug/l	180	120	20
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.45	0.46	0.17
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1.6	0.62	1.5
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	0.03	< 0.01
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	1.5	< 1.1	< 1.1
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5
Phosphorus as P, Dissolved	DETSC 2306	18	ug/l	39	43	< 18
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.84	0.79	0.66
Zinc, Dissolved	DETSC 2306	1.3	ug/l	2.4	2.1	1.8
Inorganics						
pH	DETSC 2008		pH	8.3	7.0	7.2
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	< 0.1	0.1	0.1
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1	< 0.1	< 0.1
Dissolved Organic Carbon	DETSC 2085	2	mg/l	2.6	75	10
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.057	0.039	0.028
Sulphate as SO4	DETSC 2055	0.1	mg/l	1.9	2.1	4.7
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 19-18439
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1565558	1565559	1565560
			Sample ID	R71202	R71204	R71803
			Depth	0.50	0.20	0.20
			Other ID			
			Sample Type	LEACHATE	LEACHATE	LEACHATE
			Sampling Date	11/09/19	11/09/19	11/09/19
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
PAHs						
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.02	0.01	0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.03	0.02	0.01
Pyrene	DETSC 3304	0.01	ug/l	0.03	0.02	0.02
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.02	0.01	0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20
Phenols						
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100	< 100

Key: * -not accredited. n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 19-18439
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1565554	R71202 0.50 SOIL	11/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1565555	R71204 0.20 SOIL	11/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1565556	R71204 0.50 SOIL	11/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1565557	R71803 0.20 SOIL	11/09/19	GJ 250ml, GJ 60ml x2, PT 1L x2		
1565558	R71202 0.50 LEACHATE	11/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1565559	R71204 0.20 LEACHATE	11/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1565560	R71803 0.20 LEACHATE	11/09/19	GJ 250ml, GJ 60ml x2, PT 1L x2		

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-18545	23-Sep-19
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP	

Our Reference	19-18545
Client Reference	PC197626
Order No	(not supplied)
Contract Title	A303 Amesbury to Berwick Down Phase 7a (ii)
Description	2 Soil samples.
Date Received	12-Sep-19
Date Started	12-Sep-19
Date Completed	23-Sep-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 19-18545
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Sample ID	Depth	Lab No	Completed	Matrix Description
STP70801	0.5	1566055	23/09/2019	Brown gravelly, sandy CLAY
STP70801	2.1	1566056	23/09/2019	Cream gravelly, sandy CLAY

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18545
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1566055	1566056
			Sample ID	STP70801	STP70801
			Depth	0.50	2.10
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	09/09/19	09/09/19
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Antimony	DETSC 2301*	1	mg/kg	1.1	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	6.9	2.5
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	< 0.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.4	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2
Chromium III	DETSC 2301*	0.15	mg/kg	14	5.1
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	4.8
Iron	DETSC 2301	25	mg/kg	16000	5200
Lead	DETSC 2301#	0.3	mg/kg	16	3.6
Manganese	DETSC 2301#	20	mg/kg	570	280
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.9	< 0.4
Nickel	DETSC 2301#	1	mg/kg	17	6.4
Phosphorus	DETSC 2301*	1	mg/kg	650	320
Selenium	DETSC 2301#	0.5	mg/kg	0.6	1.1
Zinc	DETSC 2301#	1	mg/kg	62	21
Inorganics					
pH	DETSC 2008#		pH	7.9	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	1.5	0.2
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	3.5	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	19	22
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1.1	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	13	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	10	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	25	< 10

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18545
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1566055	1566056
			Sample ID	STP70801	STP70801
			Depth	0.50	2.10
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	09/09/19	09/09/19
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	25	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.07	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	4.8	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	6.8	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	5.4	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.2	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	2.4	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.2	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.78	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.1	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.37	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.37	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	27	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.6	< 0.3

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

Summary of Asbestos Analysis
Soil Samples

Our Ref 19-18545
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1566055	STP70801 0.50	SOIL	NAD	none	Luke Donaghy
1566056	STP70801 2.10	SOIL	NAD	none	Luke Donaghy

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

Information in Support of the Analytical Results

Our Ref 19-18545
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1566055	STP70801 0.50 SOIL	09/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1566056	STP70801 2.10 SOIL	09/09/19	GJ 250ml, GJ 60ml, PT 1L x2		

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

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number 19-18652

25-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-18652

Client Reference PC197626

Order No OC22453

Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Description 1 Soil sample, 1 Leachate sample.

Date Received 17-Sep-19

Date Started 20-Sep-19

Date Completed 25-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18652
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1566701
Sample ID	STP71602
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	13/09/19
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Antimony	DETSC 2301*	1	mg/kg	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	6.8
Beryllium	DETSC 2301#	0.2	mg/kg	0.5
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.5
Chromium III	DETSC 2301*	0.15	mg/kg	16
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11
Iron	DETSC 2301	25	mg/kg	14000
Lead	DETSC 2301#	0.3	mg/kg	13
Manganese	DETSC 2301#	20	mg/kg	700
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.4
Nickel	DETSC 2301#	1	mg/kg	12
Phosphorus	DETSC 2301*	1	mg/kg	1000
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5
Zinc	DETSC 2301#	1	mg/kg	56
Inorganics				
pH	DETSC 2008#		pH	8.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	1.9
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	4.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	14
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18652
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1566701
			Sample ID	STP71602
			Depth	0.20
			Other ID	
			Sample Type	SOIL
			Sampling Date	13/09/19
			Sampling Time	n/s
Test	**Method**	**LOD**	**Units**	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

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

Summary of Chemical Analysis
Leachate Samples

Our Ref 19-18652
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Lab No	1566702
Sample ID	STP71602
Depth	0.20
Other ID	
Sample Type	LEACHATE
Sampling Date	13/09/19
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y
Metals				
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.18
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.2
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	1.7
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.7
Iron, Dissolved	DETSC 2306	5.5	ug/l	350
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.86
Manganese, Dissolved	DETSC 2306	0.22	ug/l	3.0
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	< 1.1
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Phosphorus as P, Dissolved	DETSC 2306	18	ug/l	120
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.3
Inorganics				
pH	DETSC 2008		pH	7.1
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	< 0.1
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1
Dissolved Organic Carbon	DETSC 2085	2	mg/l	2.1
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.063
Sulphate as SO4	DETSC 2055	0.1	mg/l	2.1
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 19-18652
Client Ref PC197626
Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

			Lab No	1566702
			Sample ID	STP71602
			Depth	0.20
			Other ID	
			Sample Type	LEACHATE
			Sampling Date	13/09/19
			Sampling Time	n/s
Test	**Method**	**LOD**	**Units**	
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.01
Anthracene	DETSC 3304	0.01	ug/l	0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.02
Pyrene	DETSC 3304	0.01	ug/l	0.02
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20
Phenols				
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100

Key: * -not accredited. n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 19-18652
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1566701	STP71602 0.20 SOIL	13/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1566702	STP71602 0.20 LEACHATE	13/09/19	GJ 250ml, GJ 60ml, PT 1L x2		

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 19-18693

30-Sep-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-18693

Client Reference PC197626

Order No OC22453

Contract Title A303 Amesbury to Berwick Down Phase 7a (ii)

Description 7 Soil samples, 1 Leachate sample.

Date Received 20-Sep-19

Date Started 20-Sep-19

Date Completed 30-Sep-19

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

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

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
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Summary of Chemical Analysis
Soil Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

			Lab No	1566983	1566984	1566985	1566987
			Sample ID	STP71604	R71206	R71205	WS71502
			Depth	0.20	0.20	0.50	0.30
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	17/09/19	17/09/19	17/09/19	16/09/19
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	6.4	6.1	1.7	1.6
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	0.4	< 0.2	< 0.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.7	0.7	0.3	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.7	0.4	0.4
Chromium III	DETSC 2301*	0.15	mg/kg	12	14	2.8	1.1
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	12	2.6	2.1
Iron	DETSC 2301	25	mg/kg	14000	12000	2200	780
Lead	DETSC 2301#	0.3	mg/kg	12	13	2.6	1.5
Manganese	DETSC 2301#	20	mg/kg	630	700	260	190
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.5	< 0.4	< 0.4	< 0.4
Nickel	DETSC 2301#	1	mg/kg	11	11	2.6	2.7
Phosphorus	DETSC 2301*	1	mg/kg	1200	1300	470	290
Selenium	DETSC 2301#	0.5	mg/kg	1.9	< 0.5	0.5	0.9
Zinc	DETSC 2301#	1	mg/kg	62	64	19	21
Inorganics							
pH	DETSC 2008#		pH	8.1	8.0	8.2	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.2	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	1.9	2.4	0.5	0.2
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	3.4	5.0	5.8	4.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	14	18	12	< 10

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

			Lab No	1566983	1566984	1566985	1566987
			Sample ID	STP71604	R71206	R71205	WS71502
			Depth	0.20	0.20	0.50	0.30
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	17/09/19	17/09/19	17/09/19	16/09/19
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

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

Summary of Chemical Analysis

Soil Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

			Lab No	1566983	1566984	1566985	1566987
			Sample ID	STP71604	R71206	R71205	WS71502
			Depth	0.20	0.20	0.50	0.30
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	17/09/19	17/09/19	17/09/19	16/09/19
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.7	0.6	< 0.3	< 0.3

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

			Lab No	1566988	1566989	1566990
			Sample ID	WS71502	WS71504	WS71505
			Depth	0.50	0.30	0.30
			Other ID			
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	16/09/19	16/09/19	16/09/19
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	1.1	0.7	1.9
Beryllium	DETSC 2301#	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.3	0.2
Chromium III	DETSC 2301*	0.15	mg/kg	0.92	1.0	3.4
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	1.8	1.5	3.1
Iron	DETSC 2301	25	mg/kg	640	700	3600
Lead	DETSC 2301#	0.3	mg/kg	1.4	1.3	2.2
Manganese	DETSC 2301#	20	mg/kg	190	170	200
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Nickel	DETSC 2301#	1	mg/kg	2.3	1.2	4.3
Phosphorus	DETSC 2301*	1	mg/kg	320	300	390
Selenium	DETSC 2301#	0.5	mg/kg	0.7	0.8	< 0.5
Zinc	DETSC 2301#	1	mg/kg	72	11	20
Inorganics						
pH	DETSC 2008#		pH	8.6	8.7	8.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	0.2	0.1	0.2
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	5.2	3.4	16
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	< 10	17

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Summary of Chemical Analysis
Soil Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

			Lab No	1566988	1566989	1566990
			Sample ID	WS71502	WS71504	WS71505
			Depth	0.50	0.30	0.30
			Other ID			
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	16/09/19	16/09/19	16/09/19
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01

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

Summary of Chemical Analysis
Soil Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

			Lab No	1566988	1566989	1566990
			Sample ID	WS71502	WS71504	WS71505
			Depth	0.50	0.30	0.30
			Other ID			
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	16/09/19	16/09/19	16/09/19
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

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

Summary of Chemical Analysis
Leachate Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

Lab No	1566986
Sample ID	STP71402
Depth	0.20
Other ID	
Sample Type	LEACHATE
Sampling Date	16/09/19
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y
Metals				
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.22
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.84
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	39
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	8.7
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.3
Iron, Dissolved	DETSC 2306	5.5	ug/l	400
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.3
Manganese, Dissolved	DETSC 2306	0.22	ug/l	120
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	< 1.1
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.9
Phosphorus as P, Dissolved	DETSC 2306	18	ug/l	97
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	16
Inorganics				
pH	DETSC 2008		pH	6.9
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	1.9
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1
Dissolved Organic Carbon	DETSC 2085	2	mg/l	13
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.026
Sulphate as SO4	DETSC 2055	0.1	mg/l	3.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

Lab No	1566986
Sample ID	STP71402
Depth	0.20
Other ID	
Sample Type	LEACHATE
Sampling Date	16/09/19
Sampling Time	n/s

Test	Method	LOD	Units	
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 19-18693
Client Ref PC197626

A303 Amesbury to Berwick Down
Contract Title Phase 7a (ii)

Lab No	1566986
Sample ID	STP71402
Depth	0.20
Other ID	
Sample Type	LEACHATE
Sampling Date	16/09/19
Sampling Time	n/s

Test	Method	LOD	Units	
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.01
Pyrene	DETSC 3304	0.01	ug/l	0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20
Phenols				
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100

Key: * -not accredited. n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 19-18693
Client Ref PC197626
Contract A303 Amesbury to Berwick Down Phase 7a (ii)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1566983	STP71604 0.20 SOIL	17/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1566984	R71206 0.20 SOIL	17/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1566985	R71205 0.50 SOIL	17/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1566986	STP71402 0.20 LEACHATE	16/09/19	GJ 250ml, GJ 60ml, PT 1L x2		
1566987	WS71502 0.30 SOIL	16/09/19	GJ 250ml, GJ 60ml x2, PT 1L		
1566988	WS71502 0.50 SOIL	16/09/19	GJ 250ml, GJ 60ml x2, PT 1L		
1566989	WS71504 0.30 SOIL	16/09/19	GJ 250ml, GJ 60ml x2, PT 1L		
1566990	WS71505 0.30 SOIL	16/09/19	GJ 250ml, GJ 60ml x2, PT 1L		

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

APPENDIX 13

Investigation Techniques and General Notes

INVESTIGATION TECHNIQUES

INTRODUCTION

The following brief review of Ground Investigation techniques, generally used as part of most Site Investigations in the UK, summarises their methodology, advantages and limitations. Detailed descriptions of the techniques are available and can be provided on request. This review should be read in conjunction with the accompanying General Notes.

TRIAL PITS

The trial pit is amongst the simplest yet most effective means of identifying shallow ground conditions on a site. Its advantages include simplicity, speed, potential accuracy and cost-effectiveness. The trial pit is most commonly formed using a back-acting excavator which can typically determine ground conditions to some 4 metres below ground level. Hand excavation is often used to locate, expose and detail existing foundations, features or services. In general, it is difficult to extend pits significantly below the water table in predominantly granular soils, where flows can cause instability. Unless otherwise stated, the trial pits will not have been provided with temporary side support during their construction. Under such circumstances, entrance into the pit is not permitted and hence observations will have been made from the ground surface and samples taken from the excavator bucket.

Where access for personnel is required to allow close observation of the exposed strata, the taking of samples and the carrying out of in situ tests, the sides of the trial pits (Observation Pits in BS 5930:2015) will be made safe using temporary supports or the sides battered back to a stable angle. Some limited access to such Trial Pits (Observation Pits) at depths less than 1m may be allowed in stable conditions or where the sides are benched or battered back to a safe angle.

Trends in strata type, level and thickness can be determined, shear surfaces identified and the behaviour of plant, excavation sides and excavated materials can be related to the construction process. They are particularly valuable in land slip investigations. Some types of in situ test can be undertaken in such pits and large disturbed or block samples obtained.

CABLE PERCUSSION BORING

The light Cable Percussion technique of soft ground boring, typically at a diameter of 150mm, is a well-established simple and flexible method of boring vertical holes and generally allows data to be obtained in respect of strata conditions other than rock. A tubular cutter (for cohesive soils) or shell with a flap valve (for granular soils) is repeatedly lifted and dropped using a winch and rope operating from an "A" frame. Soil which enters these tools is regularly removed and either sampled for subsequent examination or test, or laid to one side for later removal off site and licensed disposal or, if permitted by the Client, use as backfill. Steel casing will have been used to prevent collapse of the borehole sides where necessary. A degree of disturbance of soil and mixing of layers is inevitable and the presence of very thin layers of different soils within a particular stratum may not be identified. Changes in strata type can only be detected on recognition of a change in soil samples at the surface, after the interface has been passed. For the foregoing reasons, depth measurements should not be considered to be more accurate than 0.10 metre. The technique can determine ground conditions to depths in excess of 30 metres under suitable circumstances and usually causes less surface disturbance than trial pitting.

In cohesive soils cylindrical samples are retrieved by driving or pushing in 100mm nominal diameter tubes. In soft soils, piston sampling or vane testing may be undertaken. In granular soils and often in cohesive materials, in situ Standard Penetration Tests (SPT's) are performed. The SPT records the number of standard blows required to drive a 50mm diameter open or cone ended probe for 300mm after an initial 150mm penetration. A modified method of recording is used in denser strata. Small disturbed samples are obtained throughout.

ROTARY DRILLING

Rotary Drilling to produce cores by rotating an annular diamond-impregnated tube or barrel into the ground is the technique most appropriate to the forming of site investigation boreholes through rock or other hard strata. It has the advantage of being able to be used vertically or at an angle. Core diameters of less than 100mm are most common for site investigation purposes. Core is normally retrieved in plastic lining tubes. A flushing fluid such as air, water or foam is used to cool the bit and carry cuttings to the surface. Depths in excess of 60 metres can be achieved under suitable circumstances using rotary techniques, with minimal surface disturbance.

Examination of cores allows detailed rock description and generally enables angled discontinuity surfaces to be observed. However, vertical holes do not necessarily reveal the presence of vertical or near-vertical fissures or joint discontinuities. The core type and/or techniques used will depend on the ground conditions. Where open hole rotary drilling is employed, descriptions of strata result from examination at the surface of small particles ejected from the borehole in the flushing medium. In consequence, no indication of fissuring, bedding, consistency or degree of weathering can be obtained.

DYNAMIC SAMPLING

This technique involves the driving of an open-ended tube into the ground and retrieval of the soil which enters the tube. It was previously called window or windowless sampling. The term "window sample" arose from the original device which had a "window" or slot cut into the side of the tube through which samples were taken. This was superseded by the use of a thin-walled plastic liner to retrieve the soil sample from within a sampler (windowless sampling) which has a solid wall. Line diameters range from 36 to 86mm. Such samples can be used for qualitative logging, selection of samples for classification and chemical analysis and for obtaining a rudimentary assessment of strength.

Driving devices can be hand-held or machine mounted and the drive tubes are typically in 1m lengths. Depending on the type of rig used, the hole formed can be cased to prevent collapse of the borehole sides. Where the type of rig does not allow the insertion of casing, the success of this technique can be limited when soils and groundwater conditions are such that the sides of the hole collapse on withdrawal of the sampler. Obstructions within the ground, the density of the material or its strength can also limit the depth and rate of penetration of this light-weight investigation technique. Nevertheless, it is a valuable tool where access is constrained such as within buildings or on embankments. Depths of up to 10m can be achieved in suitable circumstances depending on the rig type but depths of 5m to 6m are more common.

EXPLORATORY HOLE RECORDS

The data obtained by these techniques are generally presented on Trial Pit, Borehole, Drillhole or Dynamic Sample Records. The descriptions of strata result from information gathered from a number of sources which may include published geological data, preliminary field observations and descriptions, in situ test results, laboratory test results and specimen descriptions. A key to the symbols and abbreviations used accompanies the records. The descriptions on the exploratory hole records accommodate but may not necessarily be identical to those on any preliminary records or the laboratory summaries.

The records show ground conditions at the exploratory hole locations. The degree to which they can be used to represent conditions between or beyond such holes, however, is a matter for geological interpretation rather than factual reporting and the associated uncertainties must be recognised.

DYNAMIC PROBING

This technique typically measures the number of blows of a standard weight falling over a standard height to advance a cone-ended rod over sequential standard distances (typically 100mm). Some devices measure the penetration of the probe per standard blow. It is essentially a profiling tool and is best used in conjunction with other investigation techniques where site-specific correlation can be used to delineate the distribution of soft or loose soils or the upper horizon of a dense or strong layer such as rock.

Both machine-driven and hand-driven equipment is available, the selection depending upon access restrictions and the depth of penetration required. It is particularly useful where access for larger equipment is not available, disturbance is to be minimised or where there are cost constraints. No samples are recovered and some techniques leave a sacrificial cone head in the ground. As with other lightweight techniques, progress is limited in strong or dense soils. The results are presented both numerically and graphically. Depths of up to 10m are commonly achieved in suitable circumstances.

The hand-driven DCP probing device has been calibrated by the Highways Agency to provide a profile of CBR values over a range of depths.

INSTRUMENTATION

The most common form of instrument used in site investigation is either the standpipe or else the standpipe piezometer which can be installed in investigation holes. They are used to facilitate monitoring of groundwater levels and water sampling over a period of time following site work. Normally a standpipe would be formed using rigid plastic tubing which has been perforated or slotted over much of its length whilst a standpipe piezometer would have a filter tip which would be placed at a selected level and the hole sealed above and sometimes below to isolate the zone of interest. Groundwater levels are determined using an electronic "dip meter" to measure the depth to the water surface from ground level. Piezometers can also be used to measure permeability. They are simple and inexpensive instruments for long term monitoring but response times can limit their use in tidal areas and access to the ground surface at each instrument is necessary. Remote reading requires more sophisticated hydraulic, electronic or pneumatic equipment.

Settlement can be monitored using surface or buried target plates whilst lateral movement over a range of depths is monitored using slip indicator or inclinometer equipment.

GENERAL NOTES

1. *The report is prepared for the exclusive use of the Client named in the document and copyright subsists with Geotechnics Limited. Prior written permission must be obtained to reproduce all or part of the report. It is prepared on the understanding that its contents are only disclosed to parties directly involved in the current investigation, preparation and development of the site.*

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4. *The assessment of the significance of the factual data, where called for, is provided to assist the Client and their Engineer and/or Advisers in the preparation of their designs.*

5. *The report is based on the ground conditions encountered in the exploratory holes together with the results of field and laboratory testing in the context of the proposed development. The data from any commissioned desk study and site reconnaissance are also drawn upon. There may be special conditions appertaining to the site, however, which are not revealed by the investigation and which may not be taken into account in the report.*

6. *Methods of construction and/or design other than those proposed by the designers or referred to in the report may require consideration during the evolution of the proposals and further assessment of the geotechnical and any geoenvironmental data would be required to provide discussion and evaluations appropriate to these methods.*

7. *The accuracy of results reported depends upon the technique of measurement, investigation and test used and these values should not be regarded necessarily as characteristics of the strata as a whole (see accompanying notes on Investigation Techniques). Where such measurements are critical, the technique of investigation will need to be reviewed and supplementary investigation undertaken in accordance with the advice of the Company where necessary.*

8. *The samples selected for laboratory test are prepared and tested in accordance with the relevant Clauses and Parts of BS EN ISO 17892 and BS 1377 Parts 1 to 8, where appropriate, in Geotechnics Limited's UKAS accredited Laboratory, where possible. A list of tests is given.*

9. *Tests requiring the use of another laboratory having UKAS accreditation where possible are identified.*

10. *Any unavoidable variations from specified procedures are identified in the report.*

11. *Specimens are cut vertically, where this is relevant and can be identified, unless otherwise stated*

12. *All the data required by the test procedures are recorded on individual test sheets but the results in the report are presented in summary form to aid understanding and assimilation for design purposes. Where all details are required, these can be made available.*

13. *Whilst the report may express an opinion on possible configurations of strata between or beyond exploratory holes, or on the possible presence of features based on either visual, verbal, written, cartographical, photographic or published evidence, this is for guidance only and no liability can be accepted for its accuracy.*

14. *The Code of Practice for Ground Investigations – BS 5930:2015 calls for man-made soils to be described as Anthropogenic Ground with soils placed in an un-controlled manner classified as Made Ground and soils placed in a controlled manner as Fill. In view of the difficulty in always accurately determining the origin of man-made soils in exploratory holes, Geotechnics Limited classify such materials as Made Ground. Where soils can be clearly identified as being placed in a controlled manner then further classification of the soils as Fill has been added to the Exploratory Hole Records.*

15. *Classification of man-made soils is based on the inspection of retrieved samples or exposed excavations. Where it is obvious that foreign matter such as paper, plastic or metal is present, classification is clear. Frequently, however, for man-made soils that arise from the adjacent ground or from the backfilling of excavations, their visual characteristics can closely resemble those of undisturbed ground. Other evidence such as site history, exploratory hole location or other tests may need to be drawn upon to provide clarification. For these reasons, classification of soils on the exploratory hole records as either Made Ground or naturally occurring strata, the boundary between them and any interpretation that this gives rise to should be regarded as provisional and subject to re-evaluation in the light of further data.*

16. *The classification of materials as Topsoil is generally based on visual description and should not be interpreted to mean that the material so described complies with the criteria for Topsoil used in BS 3882:2015. Specific testing would be necessary where such a definition is a requirement.*

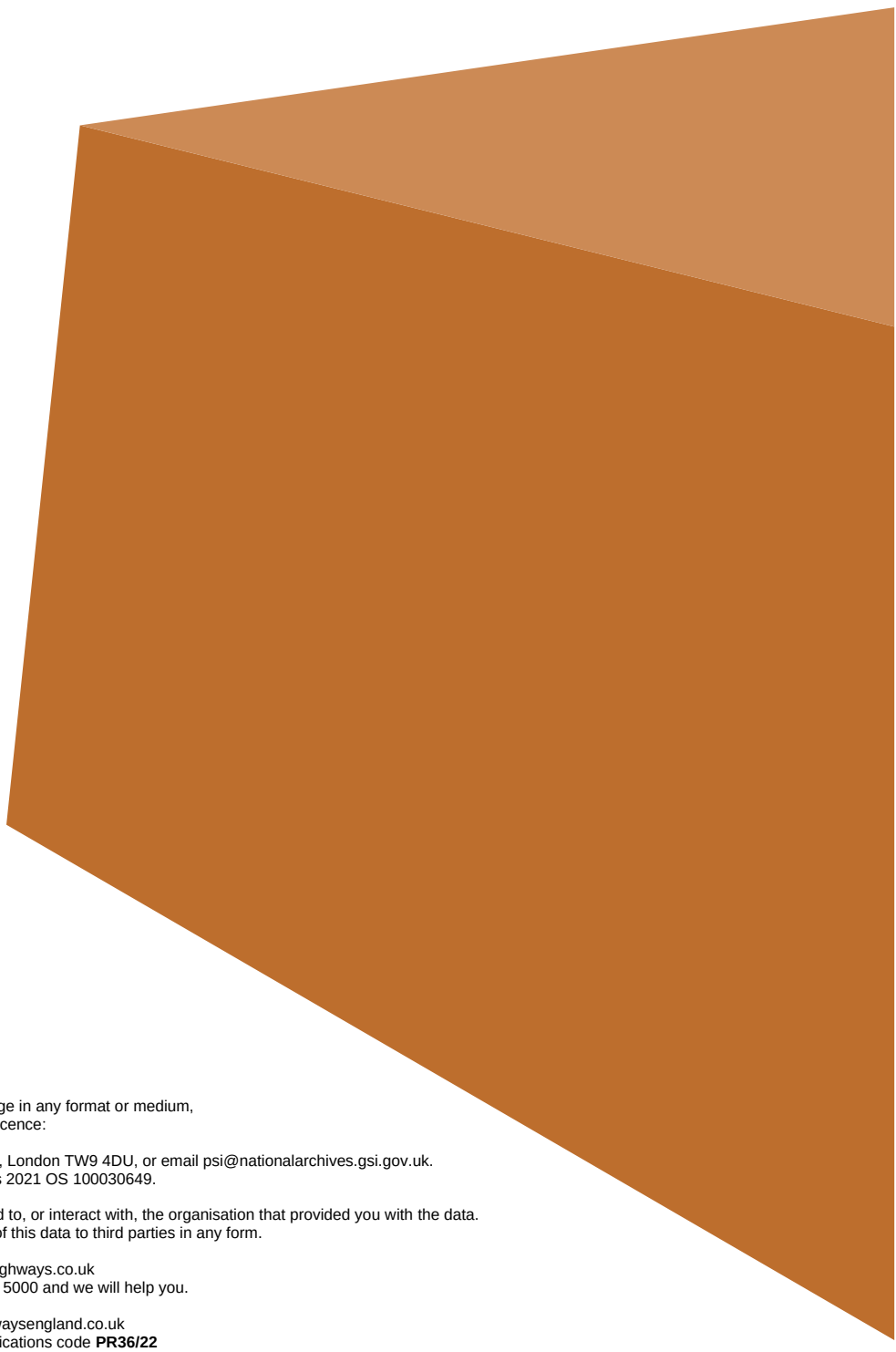
17. *Ground conditions should be monitored during the construction of the works and the report should be re-evaluated in the light of these data by the supervising geotechnical engineers.*

18. *Any comments on groundwater conditions are based on observations made at the time of the investigation, unless specifically stated otherwise. It should be noted, however, that the observations are subject to the method and speed of boring, drilling or excavation and that groundwater levels will vary due to seasonal or other effects.*

19. *Any bearing capacities for conventional spread foundations which are given in the report and interpreted from the investigation are for bases at a minimum depth of 1m below finished ground level in naturally occurring strata and at broadly similar levels throughout individual structures, unless otherwise stated. Typically they are based on serviceability criteria taking account of an assessment of the shear strength and/or density data obtained by the investigation. The foundations should be designed in accordance with the good practice embodied in BS 8004:2015 - Foundations, supplemented for housing by NHBC Standards. Foundation design is an iterative process and bearing pressures may need adjustment or other measures may need to be taken in the context of final layouts and levels prior to finalisation of proposals.*

20. *Unless specifically stated, the investigation does not take account of the possible effects of mineral extraction or of gases from fill or natural sources within, below or outside the site.*

21. *The costs or economic viability of the proposals referred to in the report, or of the solutions put forward to any problems encountered, will depend on very many factors in addition to geotechnical or geoenvironmental considerations and hence their evaluation is outside the scope of the report.*



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