

# A303 Amesbury to Berwick Down

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

Ground Investigation - Phase 7a Countess Factual Report

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The Infrastructure Planning (Examination Procedure) Rules 2010

February 2022





# Ground Investigation





## A303 Amesbury to Berwick Down - Phase 7a Countess

Factual Report

for Highways England

Engineer : AECOM

Project Number PC197708

January 2020

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Factual Report

### A303 Amesbury to Berwick Down -Phase 7a Countess

for Highways England

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# LIST OF CONTENTS

| Page No |
|---------|
|---------|

I

I

I

| 1.0 | INTR                                  | ODUCTION                   |  |  |  |  |  |  |  |  |  |  |  |
|-----|---------------------------------------|----------------------------|--|--|--|--|--|--|--|--|--|--|--|
| 2.0 | OBJECT AND SCOPE OF THE INVESTIGATION |                            |  |  |  |  |  |  |  |  |  |  |  |
| 3.0 | PRES                                  | ENTATION                   |  |  |  |  |  |  |  |  |  |  |  |
| 4.0 | THE SITE                              |                            |  |  |  |  |  |  |  |  |  |  |  |
|     | <b>4</b> . I                          | Location                   |  |  |  |  |  |  |  |  |  |  |  |
|     | 4.2                                   | Description                |  |  |  |  |  |  |  |  |  |  |  |
|     | 4.3                                   | Site Geology               |  |  |  |  |  |  |  |  |  |  |  |
|     | 4.4                                   | Hydrogeology               |  |  |  |  |  |  |  |  |  |  |  |
| 5.0 | PROCEDURE                             |                            |  |  |  |  |  |  |  |  |  |  |  |
| 5.0 | 5.I                                   | Commissioning              |  |  |  |  |  |  |  |  |  |  |  |
|     | 5.2                                   | General                    |  |  |  |  |  |  |  |  |  |  |  |
|     | 5.3                                   | Boreholes                  |  |  |  |  |  |  |  |  |  |  |  |
|     | 5.4                                   | Dynamic Sample Boreholes   |  |  |  |  |  |  |  |  |  |  |  |
|     | 5.5                                   | Trial Pits                 |  |  |  |  |  |  |  |  |  |  |  |
|     | 5.6                                   | In Situ Permeability Tests |  |  |  |  |  |  |  |  |  |  |  |
|     | 5.7                                   | PID Meter Readings         |  |  |  |  |  |  |  |  |  |  |  |
|     | 5.8                                   | Plate Load Tests           |  |  |  |  |  |  |  |  |  |  |  |
| 6.0 | LABC                                  | DRATORY TESTING            |  |  |  |  |  |  |  |  |  |  |  |
|     | 6. I                                  | Geotechnical               |  |  |  |  |  |  |  |  |  |  |  |
|     | 6.2                                   | Contamination              |  |  |  |  |  |  |  |  |  |  |  |

## APPENDICES

- APPENDIX I The Brief
- APPENDIX 2 Site Location Plan
- APPENDIX 3 Site Photographs
- APPENDIX 4 Borehole Records
- APPENDIX 5 Window Sample Borehole Records
- APPENDIX 6 Trial Pit Records
- APPENDIX 7 Exploratory Hole Location Plan
- APPENDIX 8 In Situ Permeability Test Results
- APPENDIX 9 Plate Load Tests Results
- APPENDIX 10 Laboratory Test Results Geotechnical
- APPENDIX II Laboratory Test Results Contamination
- APPENDIX 12 Investigation Techniques and General Notes

Ground Investigation

# A303 AMESBURY TO BERWICK DOWN -PHASE 7A COUNTESS ROUNDABOUT

Project No: PC197708 January 2020

# **I.0 INTRODUCTION**

A geotechnical and geoenvironmental investigation was undertaken by Geotechnics Limited for a proposed upgrade of the A303 to a dual carriageway at the Countess Roundabout in Amesbury, 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 I. One borehole (BH72503) was cancelled by the Investigation Supervisor due to the presence of buried services at the borehole loctaion. The investigation comprised cable percussion, 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 11. Attention is drawn to the General Notes and Investigation Procedures presented in Appendix 12 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 500m section of the A303 to the north west of Amesbury on and adjacent to the Countess Roundabout. The approximate Ordnance Survey National Grid Reference for the roundabout is SU 153 420. 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 linear and aligned in an approximate east to west direction (Bearing 080/260°). It comprised the verges of the A303 approach roads leading in towards, and around, the Countess Roundabout which forms the junction between the A303 and the A345 that runs southwards into Amesbury and northwards towards Durrington. The topography was generally flat. The ground conditions during the first week of the fieldwork were typically frozen and firm but, due to rain, became soft and firm during the remaining fieldwork period.

Photographs of the site taken during the fieldwork are presented in Appendix 3.

## 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. The superficial strata overlying the solid geology is shown to include Alluvium, Peat, River Terrace and Head deposits of Quaternary age.

## 4.4 Hydrogeology

The Department for Environment, Food and Rural Affairs (Defra) website, http://magic.defra.gov.uk/ MagicMap.aspx, accessed on the I7th December 2019, shows the Seaford chalk to be a Principal Aquifer. The superficial Alluvium, Peat and River Terrace deposits are classified as Secondary A Aquifers while the Head deposits are Secondary (undifferentiated) Aquifers.

Form REP005 Rev 4



## 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 I).

### 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 in the chalk 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 Borehole, Dynamic Sample Borehole and Trial Pit Records are included in Appendices 4 to 6 and their approximate positions are shown on the Exploratory Hole Location Plan in Appendix 7.

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 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 2.00m 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 either excavated part or all of the inspection pits or maintained a watching brief, that they considered appropriate, as Geotechnics excavated the inspection pits as detailed on the individual records.

### 5.3 Boreholes

Eight (8 No.), 200mm and 150mm diameter boreholes (numbered BH72402 to BH72406, BH72501, BH72502 and BH72504) were sunk by Cable Percussion Tool techniques to depths varying between 12.60m and 21.32m bgl. The work was carried out between the  $14^{\rm th}$  November and  $2^{\rm nd}$  December 2019.

Representative disturbed (D and B) and driven opentube thin-walled (UT) samples of the soils encountered were obtained at regular intervals. Standard Penetration Tests (SPTs) were undertaken at the depths indicated on the borehole records in accordance with BS EN ISO 22476-3:2005+A1:2011 to obtain a measure of the engineering properties of the proved strata. In addition, environmental soil samples (ES) were recovered at the depths indicated on the Borehole Records.

Six (6 No.) of the boreholes (numbered BH72402, BH72403, BH72405, BH72501, BH72502 and BH72504) were continued utilising 120mm diameter rotary coring techniques to depths varying between 16.00m and 30.73m bgl. The rotary coring commenced at depths of between 12.60m and 16.00m bgl through the base of the Cable Percussion Boreholes which had been left open and cased to facilitate coring as instructed by the Investigation Supervisor. Where necessary 150mm diameter casing was installed, as detailed on the individual borehole records, to aid the drilling process. The work was carried out during the period between the 19<sup>th</sup> November and 4<sup>th</sup> December 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 4.

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 core 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.

Within Borehole BH72402 rotary drilling was undertaken to a depth of 16.00m but, due to the problems with downhole tooling and time constraints in respect of completing the fieldwork within the agreed period, the Investigation Supervisor instructed that the borehole be continued with cable percussion boring.



Standard Penetration Tests (SPTs) were undertaken in each of the boreholes 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.

On encountering groundwater, boring operations were suspended for 20 minutes in order to record any rise in water level. Full details of groundwater observations during site work are included on the Borehole Records. It should be noted that the addition of water to the rotary sections of the boreholes, as part of the drilling process, may have masked the presence of groundwater in the borehole.

On completion, each borehole was backfilled with a bentonite as detailed on the individual records.

## 5.4 Dynamic Sample Boreholes

Three (3 No.) Dynamic Sample Boreholes (numbered WS72402 to WS72404) were undertaken at the site to a depth of 6.00m bgl. The work was carried out on the  $2^{nd}$  December 2019.

The Dynamic Samples were taken using the superheavy Dynamic Probe apparatus which drives lined steel tubes into the ground in Im lengths. Samples are retrieved in 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. The holes were not cased and progress depended on the nature of the strata penetrated.

No groundwater was observed during sampling although damp strata was noted as detailed on the individual Borehole Records. On completion, each borehole was backfilled with bentonite.

## 5.5 Trial Pits

Six (6 No.) Trial Pits (numbered STP72401 to STP72404, STP72501 and STP72502) were excavated to a depth of 1.20m. Four pits (STP72401 to STP72404) were excavated using a JCB 3CX and the remaining two pits using hand tools only. This work was undertaken on the  $25^{th}$  and  $26^{th}$  November 2019 and was supervised on site by a geotechnical engineer.

The profiles of strata or other features were recorded 25 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 Samples were taken directly from Records. 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 6.

## 5.6 In Situ Permeability Tests

Two (2 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 BH72402 between 4.50m and 4.70m and in BH72405 from 4.50m to 4.80m as specified by the Investigation Supervisor. The test data is presented in Appendix 8.

### 5.7 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.

## 5.8 Plate Load Tests

Six (6 No.) Plate Load Tests were carried out by Hixtra Ltd within each of the Trial Pits (see Section 5.5) at 0.30m or 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 an 8 Tonne excavator. The test loads were specified by the Investigation Supervisor and the results are presented in Appendix 9.

# 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 10. Any descriptions, opinions and interpretations are outside the scope of UKAS accreditation.

The tests undertaken can be summarised as follows:-



### **BS EN ISO 17892-1:2014**

48 No. Water Content Determination

#### **BS EN ISO 17892-4:2016**

- 5.2 39 No. Particle Size Distribution Determination – Sieving Method
- 5.4 31 No. Particle Size Distribution Determination – Pipette Method

#### BS EN ISO 17892-5:2017

5 No. Incremental Loading Oedometer Test

#### BS EN ISO 17892-12:2018

15 No. Liquid Limit and Plastic Limit

. . .

### BS 1377:1990

| l est No. | lest Description |
|-----------|------------------|
| Part 2    |                  |

3.3 44 No. Saturation Moisture Content of Chalk

#### Part 7

| 9 | 6 No. | Shear Strength Measurement - |
|---|-------|------------------------------|
|   |       | 100mm diameter (Multi-Stage) |
|   |       | Quick Undrained Triaxial     |
|   |       | Compression Test.            |

#### **ISRM** Testing Methods

| 6 No. | Point Load Determination |
|-------|--------------------------|
|-------|--------------------------|

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

#### **ISRM** Testing Methods

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

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

- I No. Water Content Determination
- I No. Loss on ignition

### **BRE Special Digest | Suite**

- 7 No. Soil Suites comprising Soluble Sulphate and pH
- 9 No. Water Suites comprising Sulphate and pH

The results of the geotechnical testing are presented in Appendix 10.

### 6.2 Contamination

Selected soil samples were tested at the laboratories of Derwentside Environmental Testing Services for a number of determinands in order to check on potential site contamination. The samples and determinands were specified by the Investigation Supervisor and are detailed on the results sheets in Appendix 11 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

Project Manager Early Warning Notification

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PC CP07-9 Rev A

1 of 4

| Project Title: A303 Stonehenge Phase 7 GI                                 | Project Number: |
|---|-----------------|
| Employer: AECOM Ltd   |                 |
| Contract Reference: Ground Investigation<br>A303 Amesbury to Berwick Down | 60547200        |

| Project Manager Early Warning Notification | Reference number:<br>Early Warning Notification 4 |
|--|---|
| Notifying Party: AECOM                     | Date of notification:<br>29/8/19                  |

**Description of matters:** 

We are looking at bringing forward the following boreholes forward to be completed as soon as possible after 7<sup>th</sup> October. The works will involve procuring TM and road spacings as well and vegetation clearance. It would be worth having discussion on the type of rig most suitable to do the works prior to AECOM issuing the BOQ for quotation.

Please note HE have previously contacted Wessex Tree Care (veg clearance) and CD Fencing to undertake works on the A303, although we understand these may not fit into your approved lists so you not obliged to use them if you do not wish to.

|    | Countess<br>Approach<br>Embankment | BH72402 | 415185 | 142047 |       | 20 | To investigate the<br>depth, nature and<br>properties of the<br>underlying made/fill<br>ground in associated<br>with the historical<br>filling, remaining<br>underlying natural<br>superficial deposits<br>and structureless<br>chalk and their<br>compressibility for<br>proposed new road | To investigate the<br>depth, nature and<br>properties of the<br>underlying made/fill | N                       | SPT<br>FHP                           |   | Traffic management required. |
|----|------------------------------------|---------|--------|--------|-------|----|---|--|-------------------------|--------------------------------------|---|------------------------------|
|    |                                    | BH72403 | 415327 | 142022 | CP+RC | 20 |   | Y  | YSPTComp<br>streYSPTFHP |                                      | SPT in fill ground and  |                              |
| 24 |                                    | BH72404 | 415461 | 142048 |       | 20 |   | Y  |                         | Compressibility and strength testing | natural superficial<br>deposits.<br>FHP for linear pond<br>(drainage) design. |                              |
|    |                                    | BH72405 | 415618 | 142092 |       | 20 |   | Ν  |                         |                                      |   |                              |
|    |                                    | BH72406 | 415730 | 142129 |       | 20 |   | Ν  | SPT                     |                                      |   |                              |
|    |                                    | WS72402 | 415261 | 142037 | DS    | 6  |   | Ν  |                         |                                      |   |                              |

Continuation

|    |                 | WS72403  | 415545 | 142075 |       | 6   | embankment<br>foundation and  | Y                |       |                                      |  |
|----|-----------------|----------|--------|--------|-------|-----|---|------------------|-------|--------------------------------------|--|
|    |                 | WS72404  | 415670 | 142109 |       | 6   | ground improvement  | N                |       |                                      |  |
|    |                 | STP72401 | 415190 | 142047 |       | 1.2 | designs.  | N                |       |                                      |  |
|    |                 | STP72402 | 415325 | 142026 |       | 1.2 |   | N                | דות   |                                      | DI T in fill mound   |
|    |                 | STP72403 | 415466 | 142049 |       | 1.2 |   | N                | PLI   |                                      | PL1 in iii ground.   |
|    |                 | STP72404 | 415613 | 142090 |       | 1.2 |   | N                |       |                                      |  |
|    |                 | BH72501  | 415354 | 142056 |       | 30  |   | Y (Soil &<br>GW) |       |                                      | SPT in fill ground and<br>natural superficial<br>deposits. |
|    | Countess Bridge | BH72502  | 415422 | 142065 | CP+RC | 30  | To acquire local<br>ground and<br>groundwater<br>conditions and<br>parameters to greater<br>depths for bridge | 0)               | - SPT | Compressibility and strength testing | SPT in fill ground,  |
| 25 |                 | BH72503  | 415360 | 142003 |       | 30  |   | N                |       |                                      | chalk.   |
| 23 |                 | BH72504  | 415429 | 142011 |       | 30  |   |                  |       |                                      | SPT in fill ground and<br>natural superficial<br>deposits. |
|    |                 | STP72501 | 415355 | 142032 | тр    | 1.2 | - Ioundation design.  | v                | DIT   |                                      | DI T in fill around  |
|    |                 | STP72502 | 415427 | 142042 |       | 1.2 |   | Y                | PLT   |                                      | PL1 III III ground.  |
|    |                 |          |        |        |       |     |   |                  |       |                                      |  |



Continuation



| I. Please enter in the Risk Register       | Yes x | No |  |
|--|-------|----|--|
| II. Please attend a risk reduction meeting | Yes x | No |  |

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# **APPENDIX 2**

# Site Location Plan



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Ground Investigation at A303 Amesbury to Berwick Down - Phase 7a Countess for Highways England



# **APPENDIX 3**

Site Photographs

Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



View from BH72403 looking north-east



Project Number : PC197708

# Project : A303 Amesbury to Berwick Down - Phase 7a Countess



View from BH72404 looking east



Project Number : PC197708

# Project : A303 Amesbury to Berwick Down - Phase 7a Countess



View from BH72404 looking west



Project Number : PC197708

# Project : A303 Amesbury to Berwick Down - Phase 7a Countess



View from BH72406 looking east



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



View from BH72501 looking south-west



Project Number : PC197708

# Project : A303 Amesbury to Berwick Down - Phase 7a Countess



View looking east toward the Countess Roundabout and BH72501



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



View of devegetation in preparation for drilling BH72405



# **APPENDIX** 4

**Borehole Records** 

# DATA SHEET - Symbols and Abbreviations used on Records

| DATA                  | A SHEET - Symbols a  | and Abbreviations used on Records |            |                                       |   |  |  |  |  |  |
|-----------------------|--|-----------------------------------|------------|---------------------------------------|---|--|--|--|--|--|
| Sample                | e Types  | Groundwater                       |            | Strata, Continued                     |   |  |  |  |  |  |
| В                     | Bulk disturbed sample  | Water Strike                      | $\nabla$   | Mudstone                              |   |  |  |  |  |  |
| BLK                   | Block sample   | Depth Water Rose To               | Y          |                                       |   |  |  |  |  |  |
| С                     | Core sample  |                                   |            | Siltstone                             | * * * * * *   |  |  |  |  |  |
| D                     | Small disturbed sample<br>(tub/jar)                              | Instrumentation                   |            | Uncocorre                             | × × × × × ×<br>× × × × × ×<br>× × × × ×                     |  |  |  |  |  |
| Е                     | Environmental test sample  |                                   | 55         | Metamorphic Rock                      | x x x x x   |  |  |  |  |  |
| ES                    | Environmental soil sample  | Seal                              |            | Fine Grained                          | ~~~~~   |  |  |  |  |  |
| EW                    | Environmental water  |                                   | -          |                                       | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~                     |  |  |  |  |  |
| G                     | Gas sample   |                                   | i -        | Medium Grained                        | ~~~~  |  |  |  |  |  |
| L                     | Liner sample   |                                   | -          |                                       | <u> </u>  |  |  |  |  |  |
| LB                    | Large bulk disturbed sample                                      | Filter                            | i -        | Coarse Grained                        | $\sim$  |  |  |  |  |  |
| Р                     | Piston sample (PF - failed P                                     |                                   | -          | Laura and Databa                      | $\sim$  |  |  |  |  |  |
| <b>T</b> \ <b>A</b> / | sample)  |                                   | Ĕ          |                                       | ~~~~~   |  |  |  |  |  |
|                       | I hin walled push in sample                                      | Seal                              |            | Fine Grained                          | ~~~~~   |  |  |  |  |  |
| 0                     | diameter with blows to<br>take sample. (UF - failed U<br>sample) | Scal                              | 777        | Medium Grained                        | + + + +<br>+ + + + +<br>+ + + + +<br>+ + + + +<br>+ + + + + |  |  |  |  |  |
| UT                    | Thin wall open drive tube  | Strata                            | Legend     | Coarse Grained                        | ****  |  |  |  |  |  |
|                       | with blows to take sample.                                       | Made Ground                       |            | Packfill Matariala                    |   |  |  |  |  |  |
| V                     | (UTF - failed UT sample)   | Granular                          |            | Dackilli Materiais                    |   |  |  |  |  |  |
| V<br>\\/              | Viai sample<br>Wator sample                                      | Made Ground                       |            | Anising                               | 8   |  |  |  |  |  |
| **<br>#               | Sample Not Recovered   | Cohesive                          |            | Ansings                               | X   |  |  |  |  |  |
| <i>n</i>              |  | <b>-</b>                          |            |                                       | X   |  |  |  |  |  |
| Insitu                | l esting / Properties  | l'opsoil                          |            | Bentonite Seal                        |   |  |  |  |  |  |
| CBRP                  | CBR using TRL probe  |                                   |            |                                       |   |  |  |  |  |  |
| CHP                   | Constant Head  | Cobbles and Boulders              | °0°        | Concrete                              | •   |  |  |  |  |  |
|                       | Flectrical conductivity  |                                   | <u>~~(</u> | Concrete                              | •   |  |  |  |  |  |
| TC                    | Thermal Conductivity   | Gravel                            |            |                                       |   |  |  |  |  |  |
| TR                    | Thermal Resistivity  |                                   | *          | Fine Gravel Filter                    |   |  |  |  |  |  |
| ΗV                    | ,<br>Strength from Hand Vane                                     | Sand                              |            |                                       | 1   |  |  |  |  |  |
| ICBR                  | CBR Test   |                                   |            | General Fill                          |   |  |  |  |  |  |
| IDEN                  | Density Test   | <b>C</b> .1                       | ~~~        |                                       |   |  |  |  |  |  |
| IRES                  | Resistivity Test   | Silt                              | ×Ŷ×Ì       |                                       |   |  |  |  |  |  |
| MEX                   | CBR using Mexecone   |                                   | × × ×      | Gravel Filter                         |   |  |  |  |  |  |
| PKR                   | Packer Permeability Test   | Clay                              |            |                                       | 7   |  |  |  |  |  |
| PLT                   | Plate Load Test  |                                   |            | Grout                                 |   |  |  |  |  |  |
| PP                    | Strength from Pocket   |                                   |            |                                       | 4   |  |  |  |  |  |
| _                     | Penetrometer   | Peat                              | N/c .      |                                       | 0000<br>0000  |  |  |  |  |  |
| Temp                  | Temperature  |                                   | Mrz.       | Sand Filter                           |   |  |  |  |  |  |
| VHP                   | Variable Head Permeability<br>Test                               |                                   | NU2 .      |                                       | i fandi   |  |  |  |  |  |
| VN                    | Strength from Insitu Vane  | Note: Composite soil typ          | es shown   | Tarmacadam                            |   |  |  |  |  |  |
| <b>w%</b>             | Water content  | by combined symbols               |            |                                       |   |  |  |  |  |  |
| (All oth              | ner strengths from<br>ed triaxial testing)                       | Chalk                             |            | Rotary Core                           |   |  |  |  |  |  |
| S                     | Standard Penetration Test  |                                   |            | RQD Rock Quality D                    | esignation  |  |  |  |  |  |
| -                     | (SPT)  | Limestone                         |            | (% of intact com<br>FRACTURE INDEX    | e >100mm)   |  |  |  |  |  |
| С                     | SPT with cone  |                                   |            | Fractures/metre                       | 9   |  |  |  |  |  |
| IN<br>/               | SPI Kesult   |                                   |            | SPACING (m) Minimum                   |   |  |  |  |  |  |
| -/-                   | after seating drive  | Sandstone                         |            | NI Non-intact                         | core  |  |  |  |  |  |
| -*/-                  | Total blows/penetration  |                                   |            | AZCL Assumed zo                       | one of core   |  |  |  |  |  |
| (mm)                  | Freedown allows down have  | Coal                              |            | loss<br>(where core recovery is unkno | wn it is  |  |  |  |  |  |
| ( )                   |  |                                   |            | assumed to be at the base of th       | ie run)   |  |  |  |  |  |



#### Cable Percussion and Rotary BOREHOLE RECORD -

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer 7A COUNTESS Project

AECOM

Borehole Project No BH72402 PC197708

Client HIGHWAYS ENGLAND

| Client HIGHWAYS ENGLAND Ground Level 70.95 m OD                          |  |   |   |  |   |   |  |  |  |   |   |  |  |                                   |                            |                          |                                      |
|--|--|---|---|--|---|---|--|--|--|---|---|--|--|-----------------------------------|----------------------------|--------------------------|--------------------------------------|
| Sampli   | ing  | _   | Donib   | Prope  | rties   |   | Strata Scale 1:25  |  |  |   |   |  |  |                                   |                            |                          | :25                                  |
| Depth  |  | Sample<br>Type  | Cased &<br>(to Water)   | Strength<br>kPa  | w<br>%  | SPT N<br>(FI)   | Descrip  | tion   |  |   |   |  |  |                                   | Depth                      | Legend                   | Level<br>m OD                        |
| 0.00-<br>0.00-   | 0.20<br>0.20                                 | B<br>D  |   |  |   |   | PROBA<br>sligh<br>Grave<br>chalk   | BLE MAI<br>atly gra<br>al is an<br>and fl  | DE GROUND<br>avelly si<br>ngular to<br>lint.   | G.L.  |   | 70.95  |  |                                   |                            |                          |                                      |
| 0.50-<br>0.50-   | 0.60   | - B<br>D<br>-   |   |  |   |   | PROBA<br>sand<br>of wh<br>subro  | BLE MAI<br>with oc<br>ite sl:<br>ounded f  | DE GROUNE<br>ccasional<br>ightly sa<br>line to c                                     |   | ¥   |  |  |                                   |                            |                          |                                      |
| 1.00-<br>1.00-   | 1.10<br>1.10                                 | -<br>В<br>Д   |   |  |   |   |  |  |  |   |   |  |  |                                   | -                          |                          |                                      |
| 1.20-<br>1.20-   | 1.65   | - B<br>- D<br>-<br>-  | 1.15<br>(DRY)   |  |   | s35   | PROBA<br>silty<br>of br<br>subro<br>subar  | BLE MAI<br>gravel<br>own sam<br>ounded f<br>gular f  | DE GROUND<br>L with ra<br>Ldy clay.<br>Eine to c<br>Elint (up                        | ): Dens<br>are poc<br>Grav<br>coarse<br>o to 10             | e crean<br>kets (u<br>el is s<br>chalk w<br>mm in s | n sligh<br>up to 9<br>subangu<br>vith ra<br>size). | tly san<br>mm in s<br>lar to<br>re               | dy<br>ize)                        | _ 1.20<br>_<br>_<br>_<br>_ |                          | 69.75                                |
| 2.00   |  | -<br>D<br>-   |   |  |   |   | Below<br>stair<br>to su  | 7 2.00m,<br>ling. Wi<br>lbrounde   | , clasts<br>ith a low<br>ed flint.   | with o<br>cobble  | ccasion<br>e conte                                  | al yel<br>ent of                                   | lowish<br>subangu                                | brown<br>lar                      | -                          | <b>X</b>                 |                                      |
| 2.20-<br>2.20  | 2.65   | D<br>- W  | 1.50<br>(DRY)   |  |   | s23   |  |  |  |   |   |  |  |                                   | +                          |                          |                                      |
| 2.40-  | 2.80   | - в<br>-  |   |  |   |   | Mediu<br>SAND.<br>coars<br>Below   | m dense<br>Gravel<br>ce chall<br>2.70m   | e greyish<br>L is suba<br>L, quartz<br>grading                                       | n green<br>ingular<br>ite and<br>to fi                      | gravel<br>to sub<br>d flint<br>rm grey              | ly sli<br>prounde<br>vish gr                       | ghtly c<br>d fine<br>een cla                     | layey<br>to                       | 2.40                       |                          | 68.55                                |
| 2.80-  | 3.20   | - в   |   |  |   |   | ( of t   |  |  |   |   |  | h+1  | -                                 | 2.80                       | ·····                    | 68.15                                |
| 3.00   |  | -<br>D<br>-   |   |  | 25  |   | grave<br>of ch<br>subro<br>quart   | alk and<br>unded i<br>zite.  | gravelly<br>gravelly<br>flint.   | Gravel  | with a<br>is sub<br>chalk,                          | low co<br>bangula<br>flint                         | bble co<br>r to<br>and                           | ntent                             | -                          |                          |                                      |
| 3.20-<br>3.30-   | 3.65   | - B<br>-<br>-<br>-  | 3.15<br>(DRY)   |  |   | 56  | Below  | Below 3.30m, becoming light brown.   |  |   |   |  |  |                                   |                            |                          |                                      |
| 4.00<br>4.30-<br>4.30-   | 4.70<br>4.75                                 | - D<br><br><br>   | 4.25<br>(2.20)  |  | 17  | C9  | Loose<br>with<br>Grave<br>chalk  | Loose light brown very sandy slightly clayey GRAVEL<br>with a low cobble content of subangular flint.<br>Gravel is subangular to subrounded fine to coarse<br>chalk and flint. |  |   |   |  |  |                                   |                            |                          | 67.05                                |
|  |  | -<br>-<br>-   |   |  |   |   |  |  |  |   |   |  |  |                                   | -<br>-<br>5.00             |                          | 65.95                                |
| Boring   |  |   |   |  |   | Progre  | ess  |  |  |   | Groun   | dwate  | r  |                                   | ļ                          |                          |                                      |
| Depth  | Hole<br>Dia                                  | -   | Technique   | 9  | Crew  | Depth<br>of Hole  | Depth<br>Cased   | Depth to<br>Water  | Date   | Time  | Depth<br>Struck                                     | Depth<br>Cased                                     | Rose to  | in<br>Mins                        | Depth<br>Sealed            | Rema<br>Groun            | rks on<br>dwater                     |
| 0.85<br>1.20<br>7.50<br>12.40<br>12.60<br>15.60                          | 0.40<br>0.30<br>0.20<br>0.15<br>0.12<br>0.12 | Inspect<br>Inspect<br>Cable P<br>Cable P<br>Rotary<br>Geobor                        | ion Pit<br>ion Pit<br>ercussi<br>ercussi<br>Open Ho<br>S                              | on<br>on<br>ole  | Arch<br>DE/SG<br>CR/BB<br>CR/BB<br>SP/PB<br>SP/PB                                   | G.L.<br>0.85<br>0.85<br>1.20<br>1.20<br>2.65  | . 11/11/19 08:00 0.85 NIL 0.80 120<br>5 NIL 0.80 11/11/19 18:00 3.90 3.70 2.20 20 NS Fast<br>5 NIL 0.80 14/11/19 08:00<br>0 NIL 1.10 14/11/19 18:00<br>0 NIL DRY 20/11/19 08:00<br>1 50 DDW 20/11/19 08:00 |  |  |   |   |  |  |                                   | Slow see<br>Fast see       | page<br>page             |                                      |
| Remar<br>Symbols a<br>abbreviatio<br>explained<br>accompan<br>key sheet. | ks ks<br>and<br>ons are<br>on the<br>hying   | Inspect<br>Geotech<br>Falling<br>Rotary<br>Novembe<br>hole ba<br>percuss<br>At 17.5 | ion pit<br>mics. N<br>Head P<br>drillin<br>ar, 2nd<br>ack to 1<br>sion bor<br>50m, UT | hand<br>o serv<br>ermeab<br>g SPT<br>and 3r<br>5.00m<br>ing. B<br>shoe d | excavat<br>ices we<br>ility t<br>rods st<br>d Decem<br>to assi<br>ackfill<br>amaged | ed to o<br>re four<br>cest car<br>cuck in<br>aber ind<br>st too<br>led gray<br>during | ).85m h<br>nd.<br>cried c<br>hole a<br>cluding<br>l recov<br>vel dri<br>drivir   | by arche<br>out dur:<br>t 16.09<br>advance<br>rery. En<br>illed ou   | eologist<br>ing drill<br>5m; attem<br>sing 150m<br>ngineer a<br>ut from 1<br>ampler. | and ex<br>ing at<br>npted to<br>mm casin<br>agreed<br>5.00m | a dept<br>o recov<br>ng to 1<br>to cont<br>to 17.5  | to 1.2<br>th of 4<br>ver on<br>6.00m.<br>tinue h   | 0m dept<br>.70m.<br>27th an<br>Gravel<br>ole wit | h by<br>d 28th<br>added<br>h cabl | Log<br>Che<br>Figu<br>e    | ged by<br>cked by<br>ire | JR/SI<br>CPL<br>L of 5<br>12/05/2020 |
| are in met   | res.   | Logged in a   | accordance  | with BS59  | 30:2015   |   |  |  |  |   |   |  |  |                                   |                            |                          |                                      |

# **BOREHOLE RECORD** - Cable Percussion and Rotary

Project A303 AMESBURY TO BERWICK DOWN - PHASE Engineer AEC

AECOM

Borehole Project No BH72402 PC197708

Client HIGHWAYS ENGLAND

# Ground Level 70.95 m OD

| Sampl                                 | ing   |                         |                       | Prope           | rties             | l   | Strata  |   |   | Scale 1:25   |  |  |  |            |                       |        |               |
|---------------------------------------|---|-------------------------|-----------------------|-----------------|-------------------|---|---|---|---|--|--|--|--|------------|-----------------------|--------|---------------|
| Depth                                 |   | Sample<br>Type          | Cased &<br>(to Water) | Strength<br>kPa | w<br>%            | SPT N<br>(FI)                             | Descript  | ion   |   |  |  |  |  |            | Depth                 | Legend | Level<br>m OD |
| 5.15                                  | c 00  | - D<br>- D<br>          |                       |                 |                   |   | CHALK<br>subang<br>subang<br>densit<br>rare o<br>Betwee | , recov<br>gular f<br>gular c<br>cy, whi<br>orangis | vered as<br>tine to c<br>tobble co<br>te with<br>sh brown<br>5-8.55m, 2 | slight<br>oarse (<br>ntent.<br>occasio<br>stainin<br>becomin | ly sand<br>GRAVEL<br>Clasts<br>onal bl<br>ng. Mat<br>ng very | y silt<br>with a<br>are w<br>ack sp<br>rix is<br>loose | y angul<br>low<br>eak, lo<br>ecks an<br>cream. | ar to<br>w | 5.00                  |        | 65.95         |
| 5.55-                                 | - 6.00  | - B<br>-<br>-<br>-<br>- | 5.50<br>(2.70)        |                 |                   | 52  |   |   |   |  |  |  |  |            | -<br>-<br>-<br>-      |        |               |
| 6.20                                  |   | - D<br>-<br>-<br>-<br>- |                       |                 |                   |   | Below<br>At 6.2<br>fragme                               | 6.20m,<br>20m, wi<br>ents (u                        | , becomin<br>th occas<br>up to 50m                                      | g slig<br>ional a<br>m in s                                  | htly si<br>angular<br>ize).                                  | lty.<br>small  | flint  |            | -<br>-<br>-<br>-<br>- |        |               |
| 7.00<br>7.05-<br>7.05-                | - 7.50<br>- 7.50  | - D<br>B<br>- B<br>     | 7.00<br>(3.90)        |                 |                   | 54  | At 7.(<br>small<br>size)                                | 00m, wi<br>and me                                   | th occas  | ional a<br>nt frag   | angular<br>gments  | and s  | ubangul<br>70mm i                              | ar<br>n    |                       |        |               |
| 8.00                                  |   | -<br>D<br>-<br>-        |                       |                 |                   |   |   |   |   |  |  |  |  |            |                       |        |               |
| 8.55-<br>8.55-                        | - 9.00<br>- 9.00  | - B<br>- D<br>-         | 8.50<br>(4.10)        |                 |                   | S9  | Below   | 8.55m,  | clasts  | are med  | dium de  | nsity.   | n to 20  | Omm        | -<br>-<br>-<br>-      |        |               |
|                                       |   | -<br>-<br>-<br>-        |                       |                 |                   |   | in siz<br>conter  | ze) of<br>t of c                                    | silty ch  | alk. W   | ith a m  | edium  | cobble   | Unini      | -<br>-<br>-<br>-      |        |               |
| 9.50                                  |   | D<br>-<br>-<br>-<br>-   |                       |                 |                   |   | At 9.5  | oom, wi<br>ents (u                                  | th occas<br>ip to 40m   | ional a<br>m in s:   | angular<br>ize)  | small  | flint  |            | -<br>-<br>-<br>-      |        |               |
| Boring                                | Hole  |                         |                       |                 |                   | Progré                                    | SS<br>Denth II  | )epth to  |   |  | Groun  | dwate<br>Depth   | r  | in         | Denth                 | Rema   | ks on         |
| Depth                                 | Dia   | Cable 4                 | Technique             | e<br>.on        | Crew              | of Hole                                   | Cased   | Water   | Date<br>21/11/19  | Time   | Struck   | Cased  | Rose to  | Mins       | Sealed                | Ground | lwater        |
|                                       |   | Challe                  |                       |                 |                   | 12.15<br>12.15<br>12.40<br>12.40<br>14.10 | 11.50<br>11.50<br>12.30<br>12.30<br>14.10               | 4.70<br>3.20<br>3.50<br><u>3.40</u>                 | 21/11/19<br>25/11/19<br>25/11/19<br>26/11/19<br>26/11/19                | 18:00<br>08:00<br>18:00<br>08:00<br>18:00                    |  | wib- 3   |  | Torrit     | * +b-                 |        |               |
| Symbols                               | Remarks in the chark logged in accordance with Cirik Report C5/4, 2002. Fints described as in "Logging the Logged by JR/SI<br>Log Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing). Intact dry density Checked by CPL<br>determined from hand pressure on standard size samples or, where undertaken, from laboratory Figure 2 of 5 |                         |                       |                 |                   |   |   |   |   |  |  |  |  |            |                       |        |               |
| abbreviati<br>explained<br>accompar   | bbreviations are test results.<br>bbreviations are test results.<br>bbreviations are test results.<br>bbreviations are test results.<br>## Additional detail added by Client's consultant, Rory Mortimore.<br>Backfill details from base of hole: bentonite up to ground level.   |                         |                       |                 |                   |   |   |   |   |  |  |  |  |            |                       |        |               |
| key sheet<br>All dimens<br>are in met | sions<br>tres.  | Logged in               | 12.60-1<br>accordance | with BS59       | A1F/M1<br>30:2015 | LST, U%                                   | return.   | •   |   |  |  |  |  |            |                       |        | MIGS          |

# BOREHOLE RECORD - Cable Percussion and Rotary

Project A303 AMESBURY TO BERWICK DOWN - PHASE Engineer AEC 7A COUNTESS

AECOM

Borehole Project No BH72402 PC197708

m OD

Ground Level 70.95

Client HIGHWAYS ENGLAND

| Sampli                            | ing  | 1                                  | Donth              | Prope             | ties     |   | Strata S  |   |  |   |                 |                |         |            |                 |                        | Scale 1:25         |  |
|-----------------------------------|--|------------------------------------|--------------------|-------------------|----------|---|---|---|--|---|-----------------|----------------|---------|------------|-----------------|------------------------|--------------------|--|
| Depth                             |  | Sample<br>Type                     | Cased & (to Water) | Strength<br>kPa   | w<br>%   | SPT N<br>(FI)                             | Descrip   | otion   |  |   |                 |                |         |            | Depth           | Legend                 | Level<br>m OD      |  |
| 10.10-                            | 11.10<br>10.55   | В<br>D                             | 10.00<br>(4.50)    |                   |          | s10                                       | Betwe<br>angul<br>50mm  | Between 10.00-11.00m, with occasional to many<br>angular and subangular small flint fragments (up to<br>50mm in size).  |  |   |                 |                |         |            |                 |                        |                    |  |
|                                   |  | -<br>-<br>-<br>-<br>-<br>-<br>-    |                    |                   |          |   |   | Between 11.70-12.15m, with occasional angular small<br>flint fragments (10mm in size).  |  |   |                 |                |         |            |                 |                        |                    |  |
| 11.40                             |  |                                    |                    |                   |          |   |   |   |  |   |                 |                |         |            |                 |                        |                    |  |
| 11.70-<br>11.70-                  | 12.40<br>12.15   | - B<br>- D<br>-<br>-               | 11.50<br>(4.70)    |                   |          | s25                                       | Betwe<br>flint  |   |  |   |                 |                |         |            |                 |                        |                    |  |
| 12.40-                            | 12.85  | - D                                | 12.30<br>(3.50)    |                   |          | S16                                       |   |   |  |   |                 |                |         |            | +               |                        |                    |  |
| Core Rui<br>(Core Dia             | n/Depth<br>a/Time)   | Depth<br>Cased                     | TCR/SCR<br>/ Type  | Length<br>Max/Min | RQD<br>% | SPT<br>(FI)                               | Continu<br>Genera   | ued by Ro<br>I  | otary tech   | niques  | Detail          | Detail         |         |            |                 |                        | 58.35              |  |
| 12.60-                            | 14.10  | 12.60<br>                          | 33<br>4            | -                 | -        | (NI)                                      | CHALM<br>angul<br>fine<br>with<br>cobbl<br>are e<br>very<br>densi<br>occas<br>Matri<br>local<br>occas<br>subar<br>mediu<br>(up t<br>[GRAN | t, recolar to<br>to coa<br>a low<br>te cont<br>extreme<br>weak,<br>ty, wh<br>sional<br>ty cre-<br>sional<br>ly cre-<br>sional<br>up clar<br>gular<br>m flin<br>co 60mm<br>DE A ## | vered as<br>subangui<br>rse GRA<br>subangui<br>ent. Cla<br>ly weak,<br>low to r<br>ite with<br>black sg<br>ight bro<br>an. With<br>angular<br>small to<br>t fragme<br>in size<br>] | s silty<br>ar<br>TEL<br>ar<br>asts<br>to<br>medium<br>becks.<br>wwn,<br>to<br>b<br>mts<br>a). | Betwee          | en 13.9        | 0-13.97 | m,         |                 |                        |                    |  |
|                                   |  | _                                  |                    |                   |          |   |   |   |  |   | solid           | core.          |         |            | -               |                        |                    |  |
| 14.10-                            | 15.60  | 14.10<br>14.10<br>-<br>-<br>-<br>- | 0<br>D             |                   |          | \$54                                      | No Re   | ecovery   |  |   |                 |                |         |            |                 |                        | 56.85              |  |
| Boring                            |  |                                    |                    |                   |          | Progre                                    | ess   |   |  |   | Grou            | ndwate         | r       |            | Γ               |                        |                    |  |
| Depth                             | Dia  |                                    | Technique          | Э                 | Crew     | Depth<br>of Hole                          | Depth<br>Cased  | Depth to<br>Water   | Date   | Time  | Depth<br>Struck | Depth<br>Cased | Rose to | in<br>Mins | Depth<br>Sealed | Rem:<br>G <b>r</b> oui | arks on<br>ndwater |  |
|                                   |  |                                    |                    |                   |          | 14.10<br>15.60<br>15.60<br>16.00<br>20.50 | 14.10<br>15.60<br>15.60<br>16.00<br>16.00<br>19.00  | 3.40<br>3.80<br>8.30  | 27/11/1<br>27/11/1<br>02/12/1<br>02/12/1<br>05/12/1<br>05/12/1   | .9 08:00<br>.9 18:00<br>.9 08:00<br>.9 18:00<br>.9 18:00<br>.9 08:00<br>.9 18:00              |                 |                |         |            |                 |                        |                    |  |
| Remar<br>Symbols a<br>abbreviatio | Image: New York     Image: New York     Image: New York     Image: New York       Remarks     Logged by CPL     Checked by CPL       Symbols and abbreviations are explained on the     12/05/2020 |                                    |                    |                   |          |   |   |   |  |   |                 |                |         |            |                 |                        |                    |  |
| All dimensi<br>are in metr        | explained on the accordance with BS5930:2015   |                                    |                    |                   |          |   |   |   |  |   |                 |                |         |            | g               |                        |                    |  |

#### Cable Percussion and Rotary BOREHOLE RECORD -

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer 7A COUNTESS Project

AECOM

Borehole Project No

BH72402 PC197708

| Client  | HIGHV   | NAYS ENG  | LAND                  |                   |          |               | Ground Level 70.95 m OD  |   |  |                      |                   |       |         |             |                                 |            |               |  |  |
|---|---|---|-----------------------|-------------------|----------|---------------|--|---|--|----------------------|-------------------|-------|---------|-------------|---------------------------------|------------|---------------|--|--|
| Drillin   | g   | Dauth   | Prope                 | rties/Sa          | ampling  | g             | Strata   |   |  |                      |                   |       |         |             |                                 | Scale 1:25 |               |  |  |
| Core Ru<br>(Core Di                                       | n/Depth<br>ia/Time)                                       | Cased &<br>(to Water  | TCR/SCR%              | Length<br>Max/Min | RQD<br>% | SPT N<br>(FI) | Descrip<br>Genera  | ition<br>I  |  |                      | Descrip<br>Detail | otion |         |             | Depth                           | Legend     | Level<br>m OD |  |  |
| 15.60-  | -16.05  | <br>-<br>-<br>-<br>_<br>_ 15.60   |                       |                   |          | (NR)<br>582   |  |   |  |                      |                   |       |         |             | -<br>-<br>-<br>-<br>-<br>-<br>- |            |               |  |  |
|   |   | -<br>-<br>-<br>-<br>-<br>-  |                       |                   |          |               | See F  | Remarks   |  |                      |                   |       |         |             | 16.05                           |            | 54.90         |  |  |
|   |   | -<br>-<br>-<br>-<br>-<br>-  |                       |                   |          |               |  |   |  |                      |                   |       |         |             | -<br>-<br>-<br>-<br>-<br>-      |            |               |  |  |
| 17.50-  | -17.95  | _17.50<br>(7.00)  | UT100<br>Strengt      | h,kPa=            | 417      |               | CHALK<br>angul<br>fine<br>with<br>cobbl                                      | ar to s<br>to coar<br>a low s<br>e conte  | vered as<br>subangula<br>rse GRAVE<br>subangula<br>ent. Clas                                   | silty<br>r<br>L<br>r |                   |       |         |             | -<br>17.50<br>-<br>-            |            | 53.45         |  |  |
| 17.95-<br>18.00-<br>18.00-                                | -18.00<br>-19.00<br>-18.45                                | -<br>-<br>(7.00)<br>-   | D<br>B<br>D           |                   |          | s56           | very<br>densi<br>occas<br>Matri<br>local<br>occas<br>subar<br>mediu<br>(up t | weak, ]<br>ty, whi<br>sional h<br>x is li<br>ly crea<br>sional a<br>gular s<br>m flint<br>co 60mm | low to me<br>te with<br>olack spe<br>ight brow<br>angular t<br>small to<br>fragmen<br>in size) | cks.<br>m,           |                   |       |         |             | +<br>                           |            |               |  |  |
| 18.50-  | -18.95  | _18.00<br>(7.00)<br>-<br>-  | UT115<br>D            |                   |          |               |  |   |  |                      |                   |       |         |             | -<br>-<br>-<br>-                |            |               |  |  |
| 19.00-  | -19.45  | 19.00<br>(8.00)<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | D<br>UT130<br>Strengt | h.kPa=            | 196      | S54           |  |   |  |                      |                   |       |         |             | -<br>-<br>-<br>-                |            |               |  |  |
| 19.95-<br>20.00-  | -20.00  | -   | D<br>D                |                   |          | s45           |  |   |  |                      | Crour             | dwata | r       |             | -                               |            |               |  |  |
| Depth   | Hole  |   | Technique             | 9                 | Crew     | Depth         | Depth  | Depth to  | Date   | Time                 | Depth             | Depth | Rose to | in<br>Mirco | Depth                           | Rema       | arks on       |  |  |
|   | Dia   |   |                       |                   |          | or Hole       | Cased  | water   |  |                      | Struck            | Cased |         | Mins        | Sealed                          | Grour      | ndwater       |  |  |
| Remar<br>Symbols a<br>abbreviati<br>explained<br>accompar | Remarks<br>Symbols and abbreviations are explained on the |   |                       |                   |          |               |  |   |  |                      |                   |       |         |             |                                 |            |               |  |  |
| key sheet<br>All dimens<br>are in met                     | sions<br>tres.  | Logged in   | accordance            | with BS59         | 30:2015  |               |  |   |  |                      |                   |       |         |             | Ø                               | pied       |               |  |  |

# BOREHOLE RECORD - Cable Percussion and Rotary

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer 7A COUNTESS Project AECOM

Borehole Project No

BH72402 PC197708

| Client   | HIGHW  | AYS ENG  | LAND      |                   |          |                            | -                              | Ground Level 70.95 m OD |          |      |                          |                          |              |            |                            |                |                 |
|--|--|--|-----------|-------------------|----------|----------------------------|--------------------------------|-------------------------|----------|------|--------------------------|--------------------------|--------------|------------|----------------------------|----------------|-----------------|
| Drilling   | 9  | Denth  | Prope     | ties/Sa           | Impling  | )<br>                      | Strata Description Description |                         |          |      |                          |                          |              |            |                            | Scale 1        | :25             |
| Core Ru<br>(Core Di  | n/Depth<br>ia/Time)  | Cased &<br>(to Water)                          | TCR/SCR%  | Length<br>Max/Min | RQD<br>% | SPT N<br>(FI)              | General                        | l                       |          |      | Descrip                  | tion                     |              |            | Depth                      | Legend         | Level<br>m OD   |
|  |  | <br>19.00<br>(8.30)<br>-<br>-<br>-<br>-<br>-   |           |                   |          |                            |                                | End of                  | Borehole |      |                          |                          |              |            | <br>-<br>-<br>- 20.50<br>- |                | 50.45           |
|  |  |  |           |                   |          |                            |                                |                         |          |      |                          |                          |              |            |                            |                |                 |
| <b>Drillin</b><br>Depth  | )<br>Hole<br>Dia   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | Technique |                   | Crew     | Progre<br>Depth<br>of Hole | ess<br>Depth<br>Cased          | Depth to<br>Water       | Date     | Time | Groun<br>Depth<br>Struck | dwater<br>Depth<br>Cased | r<br>Rose to | in<br>Mins | Depth<br>Sealed            | Remai<br>Groun | ks on<br>dwater |
| Remar<br>Symbols a<br>abbreviati<br>explained<br>accompar<br>key sheet<br>All dimens<br>are in met | Remarks<br>Symbols and<br>abbreviations are<br>explained on the<br>accompanying<br>key sheet.<br>All dimensions<br>are in metres.<br>Logged in accordance with BS5930:2015 |  |           |                   |          |                            |                                |                         |          |      |                          |                          |              |            |                            |                |                 |

## **Detailed Sample Description Sheet**

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

### Project No: PC197708

Location: BH72402 Depth: 17.50-17.95m



### **Description (after triaxial test):**

CHALK, recovered as slightly sandy slightly silty, subangular to subrounded GRAVEL. Clasts are very weak, low density, white with rare light orangish brown staining. Matrix is white. With rare subangular flints (up to 4mm by 2mm).

## **Detailed Sample Description Sheet**

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

### Project No: PC197708

### Location: BH72402 Depth: 18.50-18.95m



### **Description:**

CHALK recovered as slightly sandy slightly silty, subangular to subrounded GRAVEL. Clasts are very weak, low density, white with rare black specks occasional light orangish brown staining. Matrix is white.

## **Detailed Sample Description Sheet**

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

### Project No: PC197708

Location: BH72402 Depth: 19.50-19.95m



### Description (after triaxial test):

CHALK, recovered as slightly slity slightly sandy, subangular to subrounded GRAVEL. Clasts are very weak, low density, white with rare black specks and occasional orangish brown staining. Matrix is white. With rare subangular flint (up to 25mm by 15mm).

# BOREHOLE RECORD - Cable Percussion and Rotary

| Project  | A303<br>7A CC  | AMESBUR   | Y TO BE   | RWICK I  | DOWN -  | PHASE  | Engine   | er   | AECOM  |  |   |   | E  | Boreho<br>Project      | le B   | H72403                                |                             |
|--|--|---|---|--|---|--|--|--|--|--|---|---|--|------------------------|--|---------------------------------------|-----------------------------|
| Client   |  |   |   |  |   |  | Nationa  | al Grid  | 415324.9   | E  |   |   |  |                        |  |                                       | <b></b>                     |
| Drilling   | HIGHW  | AYS ENG   | Prope   | rties/Sa   | molina  | 1 I  | Coordii<br>Strata  | nates<br>a   | 142026.4   | N  |   |   | (  | Found                  | Level 7:   | 1.29 m<br>Scale 1                     | 0D<br>·25                   |
| Core Rur   | n/Depth  | Depth<br>Cased &  | Туре  | Length   | RQD   | SPT N  | Descrir  |  |  |  |   |   |  |                        | Depth  |                                       | Discont-                    |
| (Core Dia  | a/Time)  | (to Water)  | TCR/SCR%  | Max/Min  | %   | (FI)   | Descrip  |  |  |  |   |   |  |                        | (Level)  | Legend                                | inuity                      |
| 0.00-<br>0.00-<br>0.00-<br>0.10-<br>0.10-<br>0.10-<br>0.10-<br>0.10- | 0.10<br>0.10<br>0.10<br>0.25<br>0.25<br>0.25<br>0.25 | -<br>-<br>-<br>-  | B<br>D<br>ES<br>D<br>ES                                       | PID=:  | 3.4ppm  |  | PROBA<br>sligh<br>Grave<br>chall<br>PROBA<br>sligh   | ABLE MAI<br>htly gra<br>el is ar<br>k and fl<br>ABLE MAI<br>htly gra   | DE GROUND<br>avelly si<br>ngular to<br>lint.<br>DE GROUND<br>avelly si           | : Soft<br>lt wit<br>subro<br>: Firm<br>lt wit                | brown<br>h occas<br>unded f<br>brown<br>h occas | slight<br>sional<br>line to<br>slight<br>sional | ly sandy<br>rootlets<br>coarse             | 7<br>3.<br>7<br>(up    | (71.29<br>0.10<br>(71.19<br>0.25<br>(71.04<br>0.50 |                                       |                             |
| 0.40-<br>0.40-<br>0.40-<br>0.40-                                     | 0.50<br>0.50<br>0.50<br>0.50                         | -   | B<br>D<br>ES  | PID=:  | 3.1ppm  |  | to 15mm in size) of white slightly sandy silt and<br>rare rootlets. Gravel is angular to subrounded fine<br>to coarse chalk and flint.<br>PROBABLE MADE GROUND: Greyish white gravelly silty |  |  |  |   |   |  |                        | (70.79   |                                       |                             |
| 1.00-<br>1.00-<br>1.00-  | 1.10<br>1.10<br>1.10                                 | -   | B<br>D<br>ES  |  |   |  | sand<br>subar<br>fine<br>PROBA   | with a<br>ngular f<br>to coar<br>ABLE MAI  | low cobb<br>Elint. Gr<br>rse chalk   | le con<br>avel i<br>and f<br>: Whit                          | tent of<br>s angul<br>lint<br>e verv            | angul<br>lar to<br>gravel                       | ar to<br>subround                          | led<br>7               | -<br>  |                                       |                             |
| 1.00-<br>1.20-<br>1.20-  | 1.10<br>1.65<br>1.65                                 | - 1.15<br>(NIL)   | B<br>D  | PID=2  | 2.9ppm  | s32  | sand<br>subro<br>fine<br>PROBA   | Sand with a low cobble content of angular to<br>subrounded flint. Gravel is angular to subrounded<br>fine to coarse chalk and flint. |  |  |   |   |  |                        | 1.20<br>(70.09                                     | 2                                     |                             |
| 1.70<br>1.70   |  | -<br>-<br>-   | ES  | PID=:  | 3.2ppm  |  | silty<br>subar<br>occas<br>sligh<br>subro  | y gravel<br>ngular a<br>sional p<br>ntly sar<br>ounded f   | l with a subro<br>pockets (<br>ndy clay.<br>Eine to c                            | medium<br>unded<br><7mm s<br>Grave<br>oarse                  | flint a<br>ize) of<br>l is su<br>chalk a        | and cha<br>soft<br>bangul<br>and fli            | nt of<br>lk with<br>brown<br>ar to<br>.nt. | -1                     | -<br>-<br>-  |                                       |                             |
| 2.00   |  | _   | D   |  |   |  |  |  |  |  |   |   |  |                        |  |                                       |                             |
| 2.20-<br>2.20-   | 2.65<br>2.65   | - 2.15<br>(NIL)   | B<br>D  |  |   | s17  | Below  | w 2.20m,   | , medium (   | dense.   |   |   |  |                        | -  |                                       |                             |
| 2.54<br>2.60   |  | _   | W<br>D  |  |   | -  |  |  |  |  |   |   |  |                        | 2.60   | <b>▼</b> <u></u>                      |                             |
| 2.70<br>2.70   |  | -   | ES  | PID=3  | 3.1ppm  |  | Loose<br>subar<br>quart<br>Belov   | e brown<br>ngular t<br>tzite ar<br>w 2.90m,  | sandy sl<br>to subrou<br>nd limest<br>, becomin                                  | ightly<br>nded f<br>one.<br>g ligh                           | clayey<br>ine to<br>t cream                     | g GRAVE<br>coarse<br>nish br                    | L. Grave<br>flint,<br>own.                 | el is                  | (68.69   |                                       |                             |
| 3.00   |  | -<br>-  | D   |  |   |  |  |  |  |  |   |   |  |                        | -  |                                       |                             |
| 3.30-<br>3.30-   | 3.75<br>3.75   | 3.20<br>(2.54)<br>-   | В   |  |   | C8   |  |  |  |  |   |   |  |                        | -<br>-<br>-  |                                       |                             |
| 3.80<br>3.80   |  |   | ES  | PID=3  | 3.1ppm  |  |  |  |  |  |   |   |  |                        | -  | · · · · · · · · · · · · · · · · · · · |                             |
| 4.00   |  | -   | D   |  |   |  | Below  | w 4.00m,   | , becomin  | g ligh   | t grey.   |   |  |                        | +<br>+   | 0.00                                  |                             |
| 4.30-<br>4.30-   | 4.75<br>4.75   | 4.20<br>(2.70)  | в   |  |   | C13  | Below  | w 4.30m,   | , medium   | dense.   |   |   |  |                        | +<br>-<br>-<br>-                                   |                                       |                             |
| 4.80<br>4.80   |  | -<br>-<br>-   | ES  | PID=:  | 3.1ppm  |  |  |  |  |  |   |   |  |                        | +<br>-<br>-  |                                       |                             |
| Drilling   | 1  | <u> </u>  |   | ļ  |   | Progre                                       | ess  |  |  |  | Grour   | ndwate  | r  |                        | <u> </u>   |                                       | ļ.                          |
| Depth  | Hole<br>Dia  |   | Technique   | 9  | Crew  | Depth<br>of Hole                             | Depth<br>Cased   | Depth to<br>Water  | Date   | Time   | Depth<br>Struck                                 | Depth<br>Cased                                  | Rose to                                    | in<br>Mins             | Depth<br>Sealed                                    | Rema<br>Groun                         | rks on<br>dwater            |
| 0.25<br>1.20<br>7.50<br>15.75<br>16.00<br>20.40                      | 0.40<br>0.30<br>0.20<br>0.15<br>0.12<br>0.12<br>ks   | Inspect<br>Inspect<br>Cable F<br>Cable F<br>Rotary<br>Geobor<br>Inspect | ion Pit<br>ercussi<br>ercussi<br>Open Ho<br>S<br>ion pit      | on<br>on<br>ole<br>: hand e                                      | Arch<br>DE/SG<br>CR/BB<br>CR/BB<br>SP/PB<br>SP/PB         | G.L.<br>0.25<br>0.25<br>1.20<br>1.20<br>6.50 | NIL<br>NIL<br>NIL<br>6.00  | DRY<br>DRY<br>DRY<br>DRY<br>2.50<br>Dy arche   | 11/11/19<br>11/11/19<br>14/11/19<br>14/11/19<br>19/11/19<br>19/11/19<br>eologist | 08:00<br>18:00<br>08:00<br>18:00<br>08:00<br>18:00<br>and ex | 2.95<br>tended                                  | 2.80<br>to 1.2                                  | 2.54<br>Om depth                           | 20<br>20               | NS   | Moderate                              | e flow.                     |
| Symbols a<br>abbreviatio<br>explained<br>accompany<br>key sheet      | nd<br>ons are<br>on the<br>ying                      | Geotech<br>ES samp<br>** Dril<br>Chalk 1<br>Chalk",<br>determi          | nics. N<br>ble = 2<br>lers de<br>ogged i<br>Append<br>ned fro | No serv:<br>x vial<br>escript:<br>n accor<br>lix B (1<br>om hand | ices we<br>, 2 x p<br>ion.<br>rdance<br>R.N. Mo<br>pressu | with Clortimore                              | nd.<br>jar an<br>IRIA Re<br>2, 2014<br>Standar   | nd 2 x a<br>eport C5<br>4, Whitt<br>rd size  | amber jar<br>574, 2002<br>cles Publ<br>samples                                   | . Flin<br>ishing<br>or, wh                                   | ts desc<br>). Inta<br>ere und                   | cribed<br>act dry<br>lertake                    | as in "I<br>density<br>en, from            | logging<br>/<br>labora | the<br>figu  |                                       | CPL<br>1 of 5<br>12/05/2020 |
|  |  | test re   | sults.  |  |   |  |  |  |  |  |   |   |  |                        | يرع ا  | للالحساد                              | mme                         |

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** - Cable Percussion and Rotary

| Project  | A303                                      | AMESBUR   | RY TO BE                     | RWICK                       | DOWN -                    | PHASE   | Enginee   | er  | AECOM  |  |   |  |                                  | <b>Boreho</b><br>Proiect | le E   | 3H72403       |                                      |
|--|---|---|------------------------------|-----------------------------|---------------------------|---|---|---|--|--|---|--|----------------------------------|--------------------------|--|---------------|--------------------------------------|
| Client   | , ii C                                    | JONILDD   |                              |                             |                           |   | Nationa   | l Grid  | 415324.9   | E  |   |  |                                  |                          |  |               |                                      |
| Drilling   | HIGH                                      | WAYS ENG  | LAND                         | rtios/S                     | molin                     |   | Coordin   | ates  | 142026.4   | N  |   |  |                                  | Ground                   | Level 7  | 1.29 m        | OD<br>• 25                           |
| Core Rur   | )<br>Denth                                | Depth   | Туре                         | Length                      | RQD                       | J<br>SPT N  | Dirata  |   |  |  |   |  |                                  |                          | Denth  | Scale         | .25<br>Discont-                      |
| (Core Dia  | a/Time)                                   | (to Water   | TCR/SCR%                     | Max/Min                     | %                         | (FI)  | Descript  | tion  |  |  |   |  |                                  |                          | (Level)  | Legend        | inuity                               |
| 5.20<br>5.30<br>5.55-<br>5.55-<br>6.30                                   | 6.00<br>6.00                              | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | D<br>ES<br>B                 | PID=                        | 3.1ppm                    | С9  | CHALK<br>a low<br>weak,<br>occas<br>stain         | recove<br>cobble<br>low ar<br>ional h<br>ing. | ered as sl<br>e content<br>nd medium<br>black spec                               | ightl<br>of fl<br>densi<br>ks an                   | y sandy<br>int and<br>ty and<br>d orang | y silty<br>i chalk<br>white<br>jish br | GRAVEL<br>. Clast<br>with<br>own | with<br>s are            | (66.09<br>(66.09<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |               |                                      |
| 7.00<br>7.05-<br>7.05-   | 8.30<br>7.50                              | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-           | D<br>B                       |                             |                           | S7  | Below   | 7.50m,  | , pushing  | flint  | cobble                                  | a**                                    |                                  |                          | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                |               |                                      |
| 8.40<br>8.60-<br>8.60-   | 10.00<br>9.05                             | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | D<br>B<br>D                  |                             |                           | 56  |   |   |  |  |   |  |                                  |                          | -  |               |                                      |
| Drilling   | _   | -<br>-<br>-<br>-<br>-   |                              |                             |                           | Drogr   |   |   |  |  | Crown                                   | durata                                 | -                                |                          | +<br>-<br>-<br>-   |               |                                      |
| Depth  | Hole                                      |   | Technique                    | 9                           | Crew                      | Depth   | Depth   | Depth to                                      | Date   | Time   | Depth                                   | Depth                                  | Rose to                          | in                       | Depth  | Rema          | rks on                               |
|  | Dia                                       |   |                              |                             |                           | 6.50<br>16.00<br>16.00<br>19.00<br>19.00<br>20.40 | 6.00<br>16.00<br>16.00<br>19.00<br>19.00<br>20.00 | 2.50<br>3.40<br>2.90                          | 20/11/19<br>20/11/19<br>21/11/19<br>21/11/19<br>25/11/19<br>25/11/19<br>25/11/19 | 08:00<br>18:00<br>08:00<br>18:00<br>08:00<br>18:00 | Struck                                  | Cased                                  |                                  | WINS                     | Sealed   | Groun         | uwater                               |
| Remar<br>Symbols a<br>abbreviatic<br>explained<br>accompan<br>key sheet. | ks AG<br>and<br>ons are<br>on the<br>ying | ## Addi<br>Backfil<br>Flush:  | tional<br>1 detai<br>16.00-2 | detail<br>ls from<br>0.00m, | added<br>m base<br>Air/M: | by Cli<br>of hol<br>ist, 10                       | ent's c<br>e: bent<br>0% retu                     | onsulta<br>onite u<br>rn.                     | ant, Rory<br>up to grou  | Morti<br>ind le                                    | more.<br>vel.                           |  |                                  |                          | Log<br>Che<br>Figi                                       |               | JD/SI<br>CPL<br>2 of 5<br>12/05/2020 |
| All dimens<br>are in metr  | ions<br>res.                              | Logged in   | accordance                   | with BS59                   | 30:2015                   | Discontinuit                                      | / column grat                                     | phic is illustr                               | rative only & doe:   | s not repre  | esent discont                           | inuities as f                          | ound in the c                    | ore, refer to            | Discontinuity  | Summary Sheet |                                      |
| Project   | A303<br>7A C             | AMESBUF   | RY TO BE    | RWICK I   | oown -  | PHASE            | Engine                                    | er   | AECOM  |  |   |   |   | Boreho<br>Project | le  <br>No  | BH72403<br>PC197708          | 5                                    |
|---|--------------------------|---|-------------|-----------|---------|------------------|---|--|--|--|---|---|---|-------------------|---|------------------------------|--------------------------------------|
| Client  |                          |   |             |           |         |                  | Nationa                                   | al Grid  | 415324.9   | ε  |   |   |   | Creation of       | Laval   |                              |                                      |
| Drilling  | HIGH                     | WAYS ENG  | Prope       | rties/Sa  | mplin   | a                | Strata                                    | nates<br>a   | 142026.4   | 1 IN   |   |   |   | Ground            | Level   | 71.29 m<br>Scale 1           | :25                                  |
| Core Ru   | n/Depth                  | Depth<br>Cased &  | Туре        | Length    | RQD     | SPT N            | Descrir                                   | ntion  |  |  |   |   |   |                   | Depth   | Legend                       | Discont-                             |
| (Core Di  | ia/Time)                 | (to Water   | TCR/SCR%    | Max/Min   | %       | (FI)             | Descrip                                   |  |  |  |   |   |   |                   | (Level)   | Legenu                       | inuity                               |
| 10.10-  | 11.50<br>10.55           | _ 10.05<br>(4.70)<br>_<br>_<br>_  | B<br>D      |           |         | 59               |   |  |  |  |   |   |   |                   |   |                              |                                      |
| 11.55-<br>11.55-                                | 13.00<br>12.00           | -<br>-<br>-<br>-<br>-<br>-<br>(4.40)<br>-<br>-<br>-   | B<br>D      |           |         | 57               | Belov<br>brown                            | v 11.55π<br>h staini   | n, clast:<br>ng.   | s with   | occasi  | onal ye   | llowish                                 | L                 | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                |                              |                                      |
| 13.05-<br>13.05-                                | 14.30<br>13.50           | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | в           |           |         | 529              |   |  |  |  |   |   |   |                   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                              |                                      |
| 14.40<br>14.65-<br>14.65-                       | 15.30<br>15.10           | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | D<br>D<br>D |           |         | 520              | CHALH<br>grave<br>white<br>brown<br>subro | X, recovely sile with constraints of the stain is the | rered as<br>T. Clast<br>ccasiona<br>ng. With<br>lints (1 | white<br>ts are<br>al blac<br>n occas<br>up to 4 | slight;<br>weak, ;<br>k specional ;<br>5mm in | ly sand<br>low den<br>ks and<br>subangu<br>size). | y sligh<br>sity an<br>orangis<br>lar to | tly<br>d<br>h     | -<br>-<br>-<br>-<br>(57.2<br>-<br>-<br>-<br>-<br>-                      |                              |                                      |
|   |                          | _   |             |           |         |                  |   |  |  |  |   |   |   |                   | L   |                              |                                      |
| Drilling  | 2                        |   |             |           |         | Progr            | ess                                       |  |  |  | Grour   | ndwate  | r                                       |                   |   |                              |                                      |
| Depth   | Hole<br>Dia              |   | Technique   | 9         | Crew    | Depth<br>of Hole | Depth<br>Cased                            | Depth to<br>Water  | Date   | Time   | Depth<br>Struck                               | Depth   | Rose to                                 | in<br>Mins        | Depth<br>Sealed   | Rema                         | rks on<br>dwater                     |
|   | Dia                      |   |             |           |         |                  | 0050                                      |  |  |  |   |   |   |                   |   | Groun                        |                                      |
| Remar<br>Symbols a<br>abbreviation<br>explained | ks AG                    | 5   |             |           |         |                  | <u>l</u>                                  |  |  |  |   |   |   |                   | Lo<br>Ch<br>Fig   | gged by<br>lecked by<br>jure | JD/SI<br>CPL<br>3 of 5<br>12/05/2020 |
| All dimens<br>are in met                        | iyirig<br>sions<br>ires. | Logged in   | accordance  | with BS59 | 30:2015 | Discontinuit     | y column gra                              | aphic is illustra  | ative only & do  | oes not repre                                    | esent discon                                  | tinuities as f                                    | ound in the c                           | ore, refer to     | Discontinuit  | y Summary Sheet              | miæ                                  |

| Project A303   | AMESBU                                       | RY TO BE     | RWICK I      | DOWN -  | PHASE                 | Engine  | ər   | AECOM   |   |  |   |  | Boreho<br>Project              | le B<br>No PO                             | H72403                  |                                      |
|--|--|--------------|--------------|---------|-----------------------|---|--|---|---|--|---|--|--------------------------------|---|-------------------------|--------------------------------------|
| Client   |  |              |              |         |                       | Nationa   | al Grid  | 415324.9  | e E   |  |   |  | Cround                         |   |                         |                                      |
|  | WAYS ENG                                     | Prope        | rties/Sa     | ampling | q                     | Strata  | ates   | 142026.4  | 4 IN  |  |   |  | Ground                         | Level 71                                  | Scale 1                 | :25                                  |
| Core Run/Dept  | h Depth<br>Cased &                           | Туре         | Length       | RQD     | SPT N                 | Descrip   | otion  |   |   |  |   |  |                                | Depth                                     | Legend                  | Discont-                             |
| (Core Dia/Time   | ) (to Water                                  | TCR/SCR/     | IVIAX/IVIIII | 70      | (ГІ)                  |   |  |   |   |  |   |  |                                | (Level)                                   |                         | multy                                |
| 15.30-15.75  | -<br>-<br>- 15.25<br>(3.40)<br>-<br>-<br>-   | D            |              |         | \$33                  | Weath   | nered ch   | nalk/ fl:   | int. **   |  |   |  |                                | -<br>-<br>-<br>-<br>15.75<br>-<br>(55.54) |                         |                                      |
|  | -  |              |              |         |                       |   |  |   |   |  |   |  |                                | _   |                         |                                      |
| 16.00-17.50  | 16.00<br>16.00<br>-<br>-<br>-<br>-<br>-<br>- | 40<br>0<br>D |              |         | S38<br>(AZCL)         | Betwe   | een 16.0   | 00-17.00  | n, assu   | med zo:  | ne of c   | ore los  | 35.                            |   |                         |                                      |
|  |  |              |              |         | (NI)                  | CHALF<br>coars<br>and v<br>to su<br>to 90   | (, recov<br>se GRAVI<br>white. M<br>ubangula<br>)mm in s   | vered as<br>EL. Clast<br>Matrix i;<br>ar small<br>size).  | angula<br>ts are<br>s white<br>and me   | r to sy<br>very we<br>. With<br>dium f   | ubangul<br>eak, lc<br>occasi<br>lint fr   | ar fine<br>w dens<br>onal ar<br>agments                                    | e to<br>ity<br>ngular<br>s (up | 17.00<br>(54.29)                          |                         |                                      |
| 17.50-19.00  | 17.50  | 67<br>27     | 0.20         | 27      |                       | Very  | weak, ]  | Low to me   | edium d   | ensity   | , white   | with   | as                             | 17.50<br>(53.79)                          |                         |                                      |
| 17.50-17.95  | -<br>-<br>-<br>-<br>-                        |              |              |         | S66<br>(AZCL)<br>(NI) | are:<br>Betwee<br>degree<br>rarel<br>[PROF<br>Betwee<br>silty                         | een 18.2<br>ees, cle<br>Ly stepp<br>BABLY GH<br>een 17.5<br>een 18.0<br>y angula                                   | 23-18.80<br>an (0/0,<br>ped and 1<br>RADE A4 =<br>50-18.00<br>00-18.23<br>ar to sul   | n, Set<br>/0), un<br>rough w<br>##]<br>n, assu<br>n, non<br>pangula                                     | 1 are s<br>dulatin<br>rith man<br>med zon<br>intact<br>r fine                          | incline<br>ng and<br>ny blac<br>ne of c<br>, recov<br>to coa                                | ed 75-85<br>smooth,<br>k speck<br>core los<br>vered as<br>urse gra         | s.<br>s.<br>avel.              | -<br>-<br>-<br>                           |                         | 1                                    |
| 18.42-18.49  |  | с            |              |         | (7)                   | Betwe<br>degre<br>speck<br>Betwe<br>angul<br>occas                                    | een 18.5<br>ees, cle<br>cs.<br>een 18.8<br>lar to s  | 50-18.60<br>ean, step<br>30-19.00<br>subangula  | n, disc<br>oped an<br>n, non<br>ar fine<br>to suba  | ontinu<br>d roug<br>intact<br>to coa<br>ngular   | ity inc<br>h with<br>, recov<br>arse gr<br>small  | lined s<br>many bl<br>vered as<br>vavel. W                                 | 50<br>Lack<br>S<br>Nith        | -<br>-<br>-<br>-<br>-                     |                         |                                      |
| 19.00-20.00  | 19.00  | 100          | 0.09         | 0       | +                     | fragn   | ments (1   | ip to 30  | nm in s   | ize).  | Dillait   |  | /                              | 19.00<br>(52.29)                          |                         |                                      |
| 19.00-19.40<br>19.34-19.43   | 19.00  | 9<br>D<br>C  | 0.09         |         | S99/<br>245<br>(NI)   | CHALM<br>subar<br>extre<br>with<br>(up t<br>[GRAI<br>At 19<br>fragm<br>Betwe<br>green | c, recov<br>ngular f<br>mmely we<br>coccasic<br>co 30mm<br>DE A ##<br>9.00m, w<br>ments (u<br>sen 19.3<br>n glauco | vered as<br>fine to o<br>eak to va<br>onal oran<br>in size<br>with angu<br>up to 250<br>34-19.430<br>50-20.000<br>onitic no | a very<br>coarse<br>ary wea<br>ngish b<br>). Matr<br>ular to<br>mm in s<br>n, inta<br>n, oran<br>odular | silty<br>GRAVEL<br>k, low<br>orown ro<br>ix is<br>subang<br>ize).<br>ct sect<br>sponge | angula<br>. Clast<br>densit<br>elic sp<br>white.<br>gular f<br>tion of<br>n stain<br>bed. # | ar to<br>as are<br>by and w<br>bonge th<br>filint<br>core.<br>bed and<br># | white<br>caces                 | -<br>-<br>-<br>-<br>-<br>-                |                         |                                      |
| 20.00-20.40<br>Drilling  |  | D            |              |         | Progre                | ess   |  |   |   | Grour  | ndwate  | er   |                                | <u> </u>                                  |                         |                                      |
| Depth Hole   |  | Technique    | Э            | Crew    | Depth<br>of Hole      | Depth<br>Cased  | Depth to<br>Water  | Date  | Time  | Depth  | Depth   | Rose to  | in<br>Mins                     | Depth<br>Sealed                           | Rema                    | rks on<br>dwater                     |
|  |  |              |              |         |                       |   |  |   |   |  |   |  |                                |   |                         |                                      |
| Remarks Symbols and<br>abbreviations are<br>explained on the<br>accompanying<br>key sheet.<br>All dimensions<br>are in metres. | Logged in                                    | accordance   | with BS59    | 30:2015 | Discontinuit          | y column gra  | aphic is illustr   | ative only & do   | pes not repre   | esent discon   | tinuities as f  | ound in the  | core, refer to                 | Logg<br>Chec<br>Figu                      | ged by<br>cked by<br>re | JD/SI<br>CPL<br>4 of 5<br>12/05/2020 |

| Project                | A303 AMESBU<br>7A COUNTESS | RY TO BE   | RWICK I   | DOWN -  | PHASE            | Engine         | ər                | AECOM           |              |                 |                |               | Boreho<br>Project | No P            | H72403   |                 |
|------------------------|----------------------------|------------|-----------|---------|------------------|----------------|-------------------|-----------------|--------------|-----------------|----------------|---------------|-------------------|-----------------|--|-----------------|
| Client                 |                            |            |           |         |                  | Nationa        | al Grid           | 415324.9        | E            |                 |                |               | Cround            |                 |  |                 |
| Drilling               | )                          | Prope      | rties/Sa  | amplin  | q                | Strata         |                   | 142026.4        |              |                 |                |               | Ground            | Level 7         | Scale 1  | 25              |
| Core Ru                | n/Depth Cased &            | Туре       | Length    | RQD     | SPT N            | Descrip        | otion             |                 |              |                 |                |               |                   | Depth           | Legend   | Discont-        |
| (Core Di               | ia/Time) (to water         | TCR/SCR/   |           | 70      | (11)             |                |                   |                 |              |                 |                |               |                   | (Level)         |  | inuity          |
|                        | 20.00                      |            |           |         | 250 s110/        |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | Ē                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | ļ               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | 20.40           |  |                 |
|                        | _                          |            |           |         |                  |                |                   | En              | d of B       | orehole         | 9              |               |                   | _ (50.89        |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        |                            |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | _               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Ļ               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Ľ               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | F                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        |                            |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Ĺ               |  |                 |
|                        | F                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Ĺ               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Ĺ               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Ļ               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Ĺ               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | Ę                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Ę               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | F<br>F                     |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Į               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
|                        | -                          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | -               |  |                 |
| Drilling               | g                          | Ļ          |           |         | Progr            | ess            |                   |                 |              | Grour           | ndwate         | r             |                   |                 |  |                 |
| Depth                  | Hole<br>Dia                | Techniqu   | е         | Crew    | Depth<br>of Hole | Depth<br>Cased | Depth to<br>Water | Date            | Time         | Depth<br>Struck | Depth<br>Cased | Rose to       | in<br>Mins        | Depth<br>Sealed | Remai<br>Ground  | ks on<br>dwater |
|                        |                            |            |           |         |                  |                |                   |                 |              |                 |                |               |                   |                 |  |                 |
|                        |                            |            |           |         |                  |                |                   |                 |              |                 |                |               |                   |                 |  |                 |
| Remar                  | ks 🔛                       |            |           |         | <u> </u>         |                |                   |                 |              |                 |                |               |                   | Log             | ned by   | ID/ST           |
| Symbols a              | and                        |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | Che<br>Figu     | cked by of the second s | CPL<br>5 of 5   |
| abbreviation explained | ons are<br>on the          |            |           |         |                  |                |                   |                 |              |                 |                |               |                   |                 |  | 2/05/2020       |
| key sheet.             | יזיייש<br>בוסחק            |            |           |         |                  |                |                   |                 |              |                 |                |               |                   | <u>e</u>        | eledi  | niæ             |
| are in met             | tres. Logged in            | accordance | with BS59 | 30:2015 | Discontinuit     | y column gra   | aphic is illustr  | ative only & do | es not repre | esent discon    | tinuities as f | ound in the c | ore, refer to     | Discontinuity   | Summary Sheet  |                 |

| Project  | A303<br>7A CC  | AMESBUI  | RY TO BE  | RWICK  | DOWN -  | PHASE  | Enginee  | r   | AECOM  |   |  |  |   | Boreho<br>Project                   | le B                        | H72404                  | ļ                                    |
|--|--|--|---|--|---|--|--|---|--|---|--|--|---|-------------------------------------|-----------------------------|-------------------------|--------------------------------------|
| Client   |  |  |   |  |   |  | National   | Grid  | 415459.0   | E   |  |  |   | ,<br>Ground                         |                             | 1.04 m                  |                                      |
| Sampl  | ling   | AYS EN   | JLAND   | Prope  | rties   |  | Strata   | ales  | 142046.6   |   |  |  |   | Ground                              | Level 7.                    | Scale 1                 | :25                                  |
| Depth  | 0  | Sample   | Depth<br>Cased &  | Strength   | W   | SPT N  | Descript   | ion   |  |   |  |  |   |                                     | Depth                       | Leaend                  | Level                                |
| -1.  |  | Туре   | (to Water)  | кра  | %   |  |  | -   |  |   |  |  |   |                                     | G.L.                        |                         | m OD<br>71.24                        |
| 0.10-<br>0.10-<br>0.10-<br>0.10-                                       | - 0.20<br>- 0.20<br>- 0.20<br>- 0.20                     | B<br>D<br>ES   |   | PID  | =3.1ppm   | L  | MADE (<br>sandy<br>rootle<br>cobble<br>and fl<br>coarse                    | GROUND:<br>slight<br>ets and<br>conte<br>lint. G<br>chalk     | Soft an<br>ly grave<br>l roots (<br>ent of an<br>Gravel is<br>t, flint | d firm<br>lly si<br>up to<br>gular<br>angul<br>and ra     | dark l<br>lt with<br>4mm th<br>to suba<br>ar to s<br>re cond | orown s<br>n occas<br>ick) an<br>angular<br>subroun<br>crete.  | lightly<br>sional<br>nd a low<br>concre<br>nded fir   | r<br>ete<br>le to                   | -<br>-<br>-<br>- 0.50       |                         | 70.74                                |
| 0.60-<br>0.60-<br>0.60-<br>0.60-                                       | - 0.70<br>- 0.70<br>- 0.70<br>- 0.70                     | B<br>D<br>ES   |   | PID  | =2.9ppm   | L  | MADE (<br>with a<br>concre<br>fine t<br>Below<br>size)                     | GROUND:<br>a low coste and<br>to coar<br>0.90m,<br>of sof     | Greyish<br>cobble co<br>flint.<br>rse chalk<br>with oc<br>t brown      | white<br>ontent<br>Gravel<br>, flin<br>casion<br>slight   | very g<br>of angu<br>is ang<br>t and n<br>al pock<br>ly sand | gravell<br>ular to<br>gular t<br>care co<br>cets (u<br>dy clay | y silty<br>subang<br>so subro<br>oncrete.<br>up to 80 | r sand<br>gular<br>ounded<br>omm in | -<br>-<br>-                 |                         |                                      |
| 1.00-<br>1.00-<br>1.00-<br>1.20-<br>1.20-                              | - 1.10<br>- 1.10<br>- 1.10<br>- 1.10<br>- 1.65<br>- 1.65 | - B<br>D<br>- ES<br>- B<br>- D<br>-                                      | NIL<br>(DRY)  | PID  | =2.8ppn<br>14   | 1<br>S11   | PROBAI<br>slight<br>conter<br>coarse<br>Below<br>4mm in                    | BLE MAD<br>tly gra<br>nt. Gra<br>e flint<br>1.50m,<br>n size) | DE GROUNE<br>avelly cl<br>avel is s<br>, chalk<br>, with oc<br>of brow | e: Grey<br>ay wit<br>ubangu<br>and qu<br>casion<br>m slig | ish bro<br>h a meo<br>lar to<br>artzite<br>al poc<br>htly sa | own sli<br>lium cc<br>subrou<br>e.<br>cets (u<br>andy cl       | ghtly s<br>obble<br>unded fi<br>up to 15<br>.ay.      | andy<br>ne to<br>mm by              | <br>1.20<br>                |                         | 70.04                                |
| 1.80   |  | -<br>- D   |   |  |   |  |  |   |  |   |  |  |   |                                     | -                           |                         |                                      |
| 2.00<br>2.00   |  | _ es   |   | PID  | =2.8ppm   | ı  |  |   |  |   |  |  |   |                                     | -<br>-                      |                         |                                      |
| 2.20-  | - 2.65   | D  | 2.15<br>(DRY)   |  |   | s5   |  |   |  |   |  |  |   |                                     | -                           |                         |                                      |
| 2.40-  | - 2.80   | в  |   |  |   |  | Soft g<br>Gravel<br>flint,   | greyish<br>l is su<br>, chalk                                 | n green s<br>Ibangular<br>and qua                                      | lightl<br>to su<br>rtzite                                 | y sandy<br>brounde<br>•                                      | y grave<br>ed fine   | elly CLA<br>to coa                                    | Y.<br>Irse                          | 2.40                        |                         | 68.84                                |
| 2.80   |  | - D  |   |  | 20  |  |  |   |  |   |  |  |   |                                     | -                           | ····                    |                                      |
| 3.00<br>3.00   |  | _ ES   |   | PID  | =3.0ppm   | ı  | Below  | 3.10m,  | grading  | to a  | very sa  | andy gr  | avel.   |                                     | -                           |                         |                                      |
| 3.20-<br>3.20<br>3.20-   | - 3.50<br>- 3.65   | в<br>- W   | 3.10<br>(DRY)   |  |   | S18  |  |   |  |   |  |  |   |                                     | - 3.50                      | ▼                       | 67.74                                |
| 3.80   |  | -<br>-<br>- D  |   |  | 16  |  | Medium<br>clayey<br>subang<br>subang<br>chalk                              | n dense<br>y GRAVE<br>gular f<br>gular t<br>and qu            | e light h<br>EL with a<br>Elint and<br>to subrou<br>martzite.          | orownis<br>mediu<br>subro<br>nded f                       | h green<br>m cobbl<br>unded c<br>ine to                      | n sandy<br>le cont<br>chalk.<br>coarse                         | r slight<br>ent of<br>Gravel<br>e flint,              | ly<br>is                            | -<br>-<br>-                 |                         |                                      |
| 4.30-<br>4.30-   | - 4.75<br>- 4.75   | - B<br>- B<br>   | 4.20<br>(3.20)  |  |   | C14  |  |   |  |   |  |  |   |                                     |                             |                         |                                      |
| 5.00   |  | -<br>-<br>D  |   |  |   |  | Below  | 5.00m,  | becomin  | g very  | grave  | lly.   |   |                                     | -                           |                         |                                      |
| Denth  | Hole   |  | Technique   | )  | Crew  | Depth  | Depth L  | Depth to  | Date   | Time  | Depth  | Depth  | Rose to   | in                                  | Depth                       | Rema                    | rks on                               |
| 0.80<br>1.20<br>6.00<br>21.32  | Dia<br>0.40<br>0.30<br>0.20<br>0.15                      | Inspect<br>Inspect<br>Cable H<br>Cable H                                 | cion Pit<br>Cion Pit<br>Percussi<br>Percussi                                  | on<br>on   | Arch<br>DE/SG<br>CR/BB<br>CR/BB   | G.L.<br>0.80<br>0.80<br>1.20<br>1.20<br>3.00                         | NIL<br>NIL<br>NIL<br>NIL<br>3.00   | DRY<br>DRY<br>DRY<br>DRY<br>DRY<br>DRY                        | 13/11/19<br>13/11/19<br>14/11/19<br>14/11/19<br>27/11/19<br>27/11/19   | 08:00<br>18:00<br>08:00<br>18:00<br>08:00<br>18:00        | 3.50   | 3.20   | 3.20  | 20                                  | Sealed<br>NS                | Groun                   | uwater<br>flow                       |
| Remar<br>Symbols a<br>abbreviati<br>explained<br>accompar<br>key sheet | rks Res<br>and<br>ons are<br>on the<br>nying             | Inspect<br>Geotech<br>ES sam<br>At 18.8<br>Chalk J<br>Chalk J<br>determi | cion pit<br>mics. N<br>ple = 2<br>30m and<br>logged i<br>, Append<br>ined fro | hand<br>o serv<br>x vial<br>20.40m<br>n acco<br>ix B (<br>m hand | excavat<br>ices we<br>, 1 x p<br>, UT sh<br>rdance<br>R.N. Mo<br>pressu | ed to<br>re fou<br>plastic<br>loes da<br>with C<br>ortimor<br>are on | 0.80m by<br>nd.<br>jar and<br>maged du<br>IRIA Rep<br>e, 2014,<br>standard | y arche<br>1 1 amb<br>uring d<br>port C5<br>, Whitt<br>1 size | eologist<br>per jar<br>driving c<br>574, 2002<br>les Publ<br>samples   | and ex<br>of samp<br>. Flin<br>.ishing<br>or, wh          | tended<br>ler.<br>ts desc<br>). Inta<br>ere und              | to 1.2<br>cribed<br>act dry<br>lertake                         | om dept<br>as in "<br>densit<br>en, from              | Logging<br>Y<br>labora              | Logo<br>Cheo<br>Figu<br>the | ged by<br>cked by<br>re | JR/JD<br>CPL<br>1 of 5<br>12/05/2020 |
| All dimens<br>are in met   | sions<br>tres.   | Logged in  | accordance  | with BS59  | 30:2015   |  |  |   |  |   |  |  |   |                                     | 5                           |                         |                                      |

#### Cable Percussion

| oject <sub>A303</sub><br>7A CC           | AMESBUR   | Y TO BE               | RWICK           | DOWN - | PHASE  | Engine   | er   | AECOM  |  |  |   |   | <b>Boreho</b><br>Project                     | No P  | BH72404<br>C197708 |                   |
|--|---|-----------------------|-----------------|--------|--|--|--|--|--|--|---|---|--|---|--------------------|-------------------|
| ient <sub>нісни</sub>                    | VAYS ENG  | LAND                  |                 |        |  | Nationa<br>Coordir   | al Grid<br>nates   | 415459.0<br>142046.6   | E<br>N   |  |   |   | Ground                                       | Level 7   | 1.24 m             | OD                |
| ampling                                  |   |                       | Prope           | rties  |  | Strata   | a  |  |  |  |   |   |  |   | Scale 1:           | 25                |
| Depth                                    | Sample<br>Type  | Cased &<br>(to Water) | Strength<br>kPa | w<br>% | SPT N  | Descrip  | otion  |  |  |  |   |   |  | Depth   | Legend             | Lev<br>m OD       |
| 5.30<br>5.55- 6.00<br>5.55- 6.00<br>6.00 | - D<br>- D<br>- B<br>- B<br><br>- D<br><br>- D<br>            | 5.50<br>(3.20)        |                 |        | 54   | CHALL<br>to su<br>Clast<br>with<br>At 5.<br>(up t<br>Betwe<br>subar<br>size)<br>Below<br>clast<br>Betwe<br>frage | (, recoubround<br>s are voccasi<br>.30m, w.<br>co 20mm<br>een 5.5<br>ggular ;<br>).<br>v 6.00m<br>ss.<br>een 6.00m<br>eents () | vered as<br>ed GRAVEI<br>very weak<br>onal blac<br>ith rare<br>in size)<br>0-6.00m,<br>small fli<br>, with ra<br>0-8.50m,<br>up to 30m | slight<br>with a<br>k speciar<br>with out<br>nt frag<br>re oran<br>with ra<br>m in s | ly sand<br>a low of<br>and mecks. Mair<br>ks. Mair<br>ccasion<br>gments<br>ngish l<br>are ang<br>ize). | ly silt<br>cobble<br>lium de<br>crix is<br>flint<br>hal ang<br>(up to<br>prown s<br>gular s | y suban<br>content<br>nsity,<br>white.<br>fragme<br>ular an<br>60mm i<br>taining<br>mall fl | gular<br>white<br>nts<br>d<br>n<br>on<br>int | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                    | 66                |
| 7.00<br>7.05- 8.50<br>7.05- 7.50         | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 7.00<br>(3.30)        |                 |        | \$5  |  |  |  |  |  |   |   |  |   |                    |                   |
| }.50-10.00<br>}.50- 8.95                 | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                | 8.45<br>(3.50)        |                 |        | 56   |  |  |  |  |  |   |   |  |   |                    |                   |
| oring<br>Poth Dia                        | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-                          | Technique             |                 | Crew   | Progre<br>Depth<br>of Hole<br>3.00<br>16.50<br>21.32 | Betwe<br>and r<br>2SS<br>Depth<br>Cased<br>3.00<br>16.50<br>16.50<br>21.30                                       | Depth to<br>Water<br>DRY<br>3.20<br>3.80   | 05-11.50m<br>flint fra<br>28/11/19<br>28/11/19<br>02/12/19<br>02/12/19   | y with<br>gments<br>Time<br>08:00<br>18:00<br>08:00<br>18:00                         | occas:<br>(up to<br>Grour<br>Depth<br>Struck   | ional a<br>o 60mm<br>ndWate<br>Depth<br>Cased   | ngular<br>in size<br>r<br>Rose to   | small).<br>in<br>Mins                        | Depth<br>Sealed   | Remai              | ks on<br>dw at ei |

<u>geolecimi</u>es

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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

| Project A303<br>7A CC   | AMESBUE   | RY TO BE              | RWICK I         | OWN -   | PHASE   | Enginee                | <del>J</del> I                 | AECOM                        |                   |        |                   |                 | Project    | No i                  | 2404<br>2197708 | •                                    |
|---|---|-----------------------|-----------------|---------|---------|------------------------|--------------------------------|------------------------------|-------------------|--------|-------------------|-----------------|------------|-----------------------|-----------------|--------------------------------------|
| Client <sub>HIGHV</sub>   | NAYS ENG  | LAND                  |                 |         |         | Nationa<br>Coordin     | al Grid<br>nates               | 415459.0                     | D E<br>5 N        |        |                   |                 | Ground     | Level 7               | 71.24 M         | OD                                   |
| Sampling  |   |                       | Proper          | ties    |         | Strata                 | a                              |                              |                   |        |                   |                 |            |                       | Scale 1         | :25                                  |
| Depth   | Sample<br>Type  | Cased &<br>(to Water) | Strength<br>kPa | w<br>%  | SPT N   | Descrip                | tion                           |                              |                   |        |                   |                 |            | Depth                 | Legend          | Level<br>m OD                        |
| 10.05-11.00<br>10.05-10.50  | - B<br>- D<br>-<br>-  | 10.00<br>(3.20)       |                 |         | 58      |                        |                                |                              |                   |        |                   |                 |            | -<br>-<br>-<br>-<br>- |                 |                                      |
| 11.00-11.50   | -<br>-<br>-<br>-<br>-   |                       |                 |         |         |                        |                                |                              |                   |        |                   |                 |            |                       |                 |                                      |
| 11.55-13.00<br>11.55-12.00  | - B<br>- D<br>  | 11.50<br>(5.80)       |                 |         | s10     | Betwe<br>suban<br>80mm | en 11.5<br>Igular s<br>in size | 55-13.95n<br>small to<br>a). | a, with<br>medium | flint  | angular<br>fragme | and<br>ents (up | o to       |                       |                 |                                      |
| 13.20-14.00<br>13.20-13.65  | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 13.15<br>(6.20)       |                 |         | S12     |                        |                                |                              |                   |        |                   |                 |            |                       |                 |                                      |
| 14.05-14.50   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-  | 14.00<br>(4.90)       |                 |         |         | Botwo                  | oop 14 5                       | 50_15 55m                    |                   | 02222  | ional a           | ngular          | and        |                       |                 |                                      |
| 14.60-15.55<br>14.60-15.05  | - в<br>- р<br>-   | 14.50<br>(4.20)       |                 |         | S14     | suban<br>80mm          | in size                        | small to                     | medium            | flint  | fragme            | ents (up        | to         | -<br>-<br>-<br>-      |                 |                                      |
| Boring  | <u> </u>  |                       |                 |         | Progre  | ess                    | Dorth                          | 1                            | 1                 | Grour  | ndwate            | r               | ·          | De-t                  |                 | rko                                  |
| Depth Dia   |   | Technique             | e               | Crew    | of Hole | Cased                  | Water                          | Date                         | Time              | Struck | Cased             | Rose to         | In<br>Mins | Sealed                | Grour           | arks on<br>idwater                   |
|   |   |                       |                 |         |         |                        |                                |                              |                   |        |                   |                 |            |                       |                 |                                      |
| Remarks<br>Symbols and<br>abbreviations are<br>explained on the<br>accompanying<br>key sheet.<br>All dimensions |   | accordance            | with BS50       | 20-2015 |         |                        |                                |                              |                   |        | ;                 |                 | -          | Log<br>Chi<br>Fig     |                 | JR/JD<br>CPL<br>3 of 5<br>12/05/2020 |

| Project A303<br>7A C          | AMESBU<br>COUNTESS | RY TO BI                       | ERWICK          | DOWN - | PHASE   | Enginee            | er                   | AECOM               |            |                |                 | ļ            | Boreho<br>Project | No F     | 3H72404<br>PC197708 |              |
|-------------------------------|--------------------|--------------------------------|-----------------|--------|---------|--------------------|----------------------|---------------------|------------|----------------|-----------------|--------------|-------------------|----------|---------------------|--------------|
| Client HIGH                   | IWAYS EN           | GLAND                          |                 |        |         | Nationa<br>Coordin | al Grid              | 415459.<br>142046.  | 0 E<br>6 N |                |                 |              | Ground            | Level 7  | 1.24 m              | OD           |
| Sampling                      |                    |                                | Prope           | rties  |         | Strata             | à                    |                     |            |                |                 |              |                   |          | Scale 1             | :25          |
| Depth                         | Sample<br>Type     | Depth<br>Cased &<br>(to Water) | Strength<br>kPa | w<br>% | SPT N   | Descrip            | otion                |                     |            |                |                 |              |                   | Depth    | Legend              | Leve<br>m OD |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | +        |                     | 7            |
|                               | F                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | F        |                     |              |
|                               | Ę                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | Į        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | ł        |                     |              |
| 15.55-16.00                   | UT80               | 15.50                          | 298             | 30     |         |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
|                               | Ę                  | (3.90)                         |                 |        |         |                    |                      |                     |            |                |                 |              |                   | Į        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | -        |                     |              |
| 16 00-16 10                   | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | F        |                     |              |
| 16.10-16.80                   | ) – в              |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | [        |                     |              |
| 16.10-16.55                   | 5_ D               | 15.50<br>(3.70)                |                 |        | S29     |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
|                               | F                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | ł        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | Ļ        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | ł        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | t        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
| 17.00<br>17.05-17.50          | _ D<br>) UT31      | 17.00                          |                 |        |         |                    |                      |                     |            |                |                 |              |                   | -        |                     |              |
|                               | L                  | (3.50)                         |                 |        |         |                    |                      |                     |            |                |                 |              |                   | Į        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
| 18 50 18 60                   |                    |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | ł        |                     |              |
| 17.50-17.60                   |                    |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | Ĺ        |                     |              |
| 17.60-18.05                   | 5 D                | 17.00                          |                 |        | S41     |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
|                               | -                  | (,                             |                 |        |         |                    |                      |                     |            |                |                 |              |                   | -        |                     |              |
|                               | _                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | L        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | t        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | Į        |                     |              |
| 18.80-19.25                   | 5 - UT53           | 18.75                          | 165             | 27     |         |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
|                               | -                  | (3.70)                         |                 |        |         |                    |                      |                     |            |                |                 |              |                   | -        |                     |              |
|                               | -                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | F        |                     |              |
| 19.25-19.40                   | D                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | -        |                     |              |
|                               | F                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | ł        |                     |              |
| 19.40-20.40<br>19.40-19.85    | ) B<br>5 D         | 19.00                          |                 |        | s45     |                    |                      |                     |            |                |                 |              |                   | Ļ        |                     |              |
|                               | +                  | (3.70)                         |                 |        |         |                    |                      |                     |            |                |                 |              |                   | +        |                     |              |
|                               | F<br>L             |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | ţ        |                     |              |
|                               | F                  |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | ł        |                     |              |
|                               |                    |                                |                 |        |         | Below              | 7 20.001<br>gish gre | m, rare<br>ey silt. | pockets    | (up t          | o 25mm)         | of lig       | ht                | <u> </u> |                     |              |
| Boring<br>Boring              |                    |                                | •               | -      | Depth   | èSS<br>Depth       | Depth to             |                     |            | Groui<br>Depth | ndwate<br>Depth | r<br>Daar ta | in                | Depth    | Rema                | rks on       |
| Depth Dia                     |                    | rechniqu                       | e               | Crew   | of Hole | Cased              | Water                | Date                | ıme        | Struck         | Cased           | ruse (0      | Mins              | Sealed   | Groun               | dwater       |
|                               |                    |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   |          |                     |              |
| Remarks                       | D<br>IS            |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | Log      | iged by             | JR/JD        |
| Symbols and abbreviations are |                    |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | Fig      | ure                 | 4 of 5       |
| explained on the accompanying |                    |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   |          |                     | ~-R          |
| key sheet.<br>All dimensions  |                    |                                |                 |        |         |                    |                      |                     |            |                |                 |              |                   | g        | ननानुवर्गे          | nne          |

are in metres. Logged in accordance with BS5930:2015

| Project   | A303<br>7A CC   | AMESBUF  | RY TO BE                           | RWICK           | DOWN -   | PHASE            | Enginee              | r                 | AECOM    |         |                 |                |         | Borenc<br>Project | No 1              | <b>3H72404</b><br>PC197708 |                                      |
|---|---|--|------------------------------------|-----------------|----------|------------------|----------------------|-------------------|----------|---------|-----------------|----------------|---------|-------------------|-------------------|----------------------------|--------------------------------------|
| Client  | HIGHW   | IAYS ENG   | LAND                               |                 |          |                  | National<br>Coordina | Grid<br>ates      | 415459.0 | E<br>N  |                 |                |         | Ground            | Level             | 71.24 M                    | OD                                   |
| Sampl   | ing   |  |                                    | Prope           | rties    |                  | Strata               |                   |          |         |                 |                |         |                   |                   | Scale 1                    | :25                                  |
| Depth   |   | Sample<br>Type   | Depth<br>Cased &<br>(to Water)     | Strength<br>kPa | W<br>%   | SPT N            | Descript             | ion               |          |         |                 |                |         |                   | Depth             | Legend                     | Level<br>m OD                        |
| 20.40-  | 20.85<br>20.95<br>21.32                                       | - D<br>- D<br>- D<br>- D<br>- D<br>- D<br>- D<br>D<br> | 20.30<br>(3.80)<br>20.30<br>(3.80) | 417             | 27       | \$50/<br>220     |                      |                   | Er       | ld of B | Sorehold        | P              |         |                   | - 21.3:           |                            | 49.92                                |
| Boring  |   | ļ  | ļ                                  | ļ               | <u> </u> | Progr            | ess                  |                   |          |         | Grour           | ndwate         | r       |                   | ļ                 |                            | ļ                                    |
| Depth   | Hole<br>Dia   |  | Techniqu                           | 9               | Crew     | Depth<br>of Hole | Depth L<br>Cased     | Depth to<br>Water | Date     | Time    | Depth<br>Struck | Depth<br>Cased | Rose to | in<br>Mins        | Depth<br>Sealed   | Rema<br>Groun              | rks on<br>dwater                     |
|   |   |  |                                    |                 |          |                  |                      |                   |          |         |                 |                |         |                   |                   |                            |                                      |
| Reman<br>Symbols a<br>abbreviation<br>explained<br>accompan<br>key sheet.<br>All dimens<br>are in met | KS RES<br>and<br>ons are<br>on the<br>hying<br>sions<br>tres. | Logged in  | accordance                         | with BS59       | 30:2015  |                  | +                    |                   |          |         |                 | ·              |         |                   | Log<br>Chi<br>Fig |                            | JR/JD<br>CPL<br>5 of 5<br>12/05/2020 |

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

#### Project No: PC197708

#### Location: BH72404 Depth: 14.05-14.50m

|      |          | РНОТ              | OGRAPHIC BOARD       |         |
|------|----------|-------------------|----------------------|---------|
|      |          | PROJECT<br>NAME   | PHASE 7a<br>COUNTESS |         |
|      |          | PROJECT<br>NUMBER | PC197708             |         |
|      |          | HOLE ID           | BH72404              | ality . |
| DATE | 16/12/19 | NOTES             | 14.05-14.50          |         |
| cm   | 10<br>I  | 20                | 30 40                |         |
|      |          |                   |                      |         |
|      |          |                   |                      |         |
|      |          |                   |                      |         |
| 17   |          |                   |                      |         |

#### Description:

Weak, medium density, white with frequent black specks, CHALK. Discontinuities are subhorizontal to subvertical, very closely spaced (10/40/60), clean with frequent black specks and occasional light orangish brown staining, undulating and smooth. (POSSIBLE GRADE A4)

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

#### Project No: PC197708

#### Location: BH72404 Depth: 15.55-16.00m



#### Description (after triaxial test):

CHALK, recovered as silty subangular to subrounded fine to coarse GRAVEL. Clasts are very weak, low density, white with rare black specks and occasional orangish brown surface staining. Matrix is white and locally orangish brown. With occasional angular to subangular small nodular flint fragments (up to 20 mm in size).

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

#### Project No: PC197708

#### Location: BH72404 Depth: 17.05-17.50m



#### **Description:**

Weak, medium density, white with occasional black specks, CHALK.

At 17.43m subhorizontal discontinuity, clean with frequent black specks and occasional light orangish brown staining, undulating and smooth.

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

Project No: PC197708

Location: BH72404 Depth: 18.80-19.25m



#### Description (after triaxial test):

Very weak, low to medium density, white with rare black specks, CHALK. At 18.85m, with occasional light orangish brown staining.

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

Project No: PC197708

Location: BH72404 Depth: 20.40-20.85m



#### **Description (after triaxial test):**

CHALK, recovered as very silty subangular fine to coarse GRAVEL. Clasts are extremely to very weak, low to density, white with rare black specks. Matrix is white. Below 20.65m, recovered as, white slightly gravelly SILT. Gravel is very weak, low density, white with rare black specks.

NB. UT shoe damaged during sampling.

| Project   | A303<br>7A CC                               | AMESBUR<br>DUNTESS   | Y TO BE   | RWICK  | DOWN -  | PHASE  | Engine   | er   | AECOM  |   |   | <u> </u>  |   | <b>Borehc</b><br>Project  | No P                             | C197708                                 | 5                                    |
|---|---|--|---|--|---|--|--|--|--|---|---|---|---|---------------------------|----------------------------------|---|--------------------------------------|
| Client  | HIGHV                                       | VAYS ENG   | LAND  |  |   |  | Coordin  | ates   | 415625.7<br>142095.6   | E<br>N  |   |   |   | Ground                    | Level 7                          | 2.30 m                                  | n OD                                 |
| Drilling  | 9   | Dopth  | Prope   | rties/Sa   | ampling   | g  | Strata   | a  |  |   |   |   |   |                           | 1                                | Scale                                   | 1:25                                 |
| Core Ru<br>(Core Di                                       | n/Depth<br>a/Time)                          | Cased &<br>(to Water)  | TCR/SCR%  | Length<br>Max/Min  | RQD<br>%  | SPT N<br>(FI)                                    | Descrip  | tion   |  |   |   |   |   |                           | Depth<br>(Level)                 | Legend                                  | Discont<br>inuity                    |
| 0.00-<br>0.00-<br>0.10-<br>0.10-                          | 0.10<br>0.10<br>0.30<br>0.20                | -<br>-<br>-  | B<br>D<br>B<br>D  |  |   |  | MADE<br>grave<br>to 15<br>subar                    | GROUND:<br>lly cla<br>mm in c<br>gular f                       | Soft gr<br>y with m<br>liameter)<br>ine to c                                 | eyish<br>any ro<br>. Grav                         | brown<br>otlets<br>el is<br>chalk             | slightl<br>and sc<br>angular<br>and fli             | y sandy<br>ome root<br>to<br>.nt.                     | s (up                     | G.L.<br>(72.30<br>0.10<br>(72.20 | >                                       |                                      |
| 0.55-<br>0.55-  | 0.70  | -  | B<br>D  |  |   |  | MADE<br>sandy<br>densi<br>coars<br>grave<br>flint  | GROUND:<br>gravel<br>ty, whi<br>e. With<br>and a               | Chalk,<br>ly silt.<br>te, angu<br>some an<br>low sub                         | recove<br>Clast<br>lar to<br>gular<br>angula      | red as<br>s are<br>suban<br>fine to<br>r cobb | cream<br>very we<br>gular a<br>o coars<br>le cont   | slightl<br>eak, low<br>and fine<br>se flint<br>ent of | y<br>to                   | 0.55                             | 2                                       |                                      |
| 1.00-   | 1.20  | -  | B<br>D  |  |   |  | MADE<br>sligh<br>suban<br>brick<br>brick           | GROUND:<br>tly san<br>gular t<br>. Grave<br>and ch             | Firm gr<br>ndy sligh<br>to subrou<br>al is ang<br>nalk.                      | eyish l<br>tly gra<br>nded c<br>ular f            | brown n<br>avelly<br>obble<br>ine to          | mottled<br>clay w<br>content<br>coarse              | l white<br>with a l<br>cof sla<br>flint,              | ow<br>g and               | 1.00<br>(71.30                   | ,                                       |                                      |
| 1.20-<br>1.20-  | 1.70<br>1.65                                | - 1.20<br>(DRY)  | B<br>D  |  |   | s10  | PROBA<br>grave<br>conte<br>coars                   | BLE MAD<br>ally sil<br>ant. Gra<br>se chalk                    | DE GROUND<br>t with a<br>avel is a<br>with so                                | : Firm<br>low s<br>ngular<br>me fli               | cream<br>ubangu<br>to su<br>nt.               | slight<br>lar cha<br>bangula                        | ly sand<br>lk cobb<br>r fine                          | y<br>le<br>to             | -                                |   |                                      |
| 1.90-   | 2.00  | -  | D   |  |   |  |  |  |  |   |   |   |   |                           | -<br>-<br>-<br>-                 |   |                                      |
| 2.20-<br>2.20-  | 2.70  | - 1.50<br>(DRY)<br>-   | В   |  |   | s34  | Below  | 7 2.20m,   | becomin  | g very  | stiff   |   |   |                           |                                  |   |                                      |
| 2.90-<br>3.00-<br>3.00-<br>3.00-                          | 3.00<br>3.50<br>3.45                        | 3.00<br>- (DRY)  | D<br>B<br>W   |  |   | S18  | PROBA<br>claye<br>to su<br>size)<br>Grave<br>chalk | BLE MAI<br>by grave<br>brounde<br>of sof<br>il is an<br>and fl | DE GROUND<br>al with a<br>ad flint<br>it dark b<br>ngular to<br>lint.        | : Medi<br>low co<br>and ra<br>rown s<br>suban     | um den<br>obble<br>re poc<br>lightl<br>gular  | se crea<br>content<br>kets (u<br>y sandy<br>fine to | m sandy<br>of ang<br>p to 50<br>clay.<br>o coarse     | ular<br>mm in             | 2.90<br>_(69.40                  | )<br>                                   |                                      |
| 3.50-<br>3.60-  | 3.60<br>4.00                                | -  | D<br>B  |  |   |  | Firm<br>sandy<br>plast<br>suban                    | greenis<br>CLAY w<br>ic pseu<br>gular f                        | sh grey m<br>with pock<br>dofibrou<br>line to c                              | ottled<br>ets (u<br>s peat<br>oarse               | brown<br>p to 6<br>. Grav<br>flint.           | slight<br>Omm in<br>el is a                         | :ly grav<br>size) o<br>ungular                        | elly<br>f<br>to           | 3.50<br>(68.80<br>               |   |                                      |
| 4.00-   | 4.45  | - 4.00<br>(DRY)<br>-   | D   |  |   | S15  | Mediu<br>GRAVE<br>to su                            | m dense<br>L with<br>brounde                                   | e brown a<br>a low co<br>ed fine t   | nd gre<br>bble c<br>o coar                        | y sand<br>ontent<br>se fli:                   | y sligh<br>. Grave<br>nt.                           | tly sil<br>l is an                                    | ty<br>gular               | 4.20<br>(68.10                   | → · · · · · · · · · · · · · · · · · · · |                                      |
| 4.80-<br>4.80-<br>4.80-                                   | 5.30<br>4.90<br>5.25                        | -<br>-<br>- 4.50   | B<br>D  |  |   | C10  |  |  |  |   |   |   |   |                           | -<br>-<br>-                      | × · · · · · · · · · · · · · · · · · · · |                                      |
| Drilling  |   | ·  |   |  |   | Progre   | ess<br>Depth                                       | Depth to   | <b>P</b> :   | - <b>T</b>  |   | ndwate  | r   | in                        | Denth                            | Rom                                     | arks on                              |
| Depth<br>1.20<br>6.00<br>15.50<br>16.50<br>20.23          | Dia<br>0.40<br>0.20<br>0.15<br>0.12<br>0.12 | Inspect<br>Cable P<br>Cable P<br>Rotary<br>Geobor                        | ion Pit<br>ercussi<br>ercussi<br>Open Ho<br>S                           | on<br>on<br>ole  | Crew<br>DC/LC<br>DC/LC<br>DC/LC<br>SP/PB<br>SP/PB | G.L.<br>6.00<br>6.00<br>15.50<br>15.00           | 6.00<br>6.00<br>15.00<br>15.00                     | Water<br>5.00<br>3.30<br>8.00<br>3.60                          | Date<br>27/11/19<br>27/11/19<br>28/11/19<br>28/11/19<br>04/12/19<br>29/11/10 | 1ime<br>08:00<br>18:00<br>08:00<br>18:00<br>08:00 | Struck<br>4.20                                | Cased<br>4.00                                       | Rose to<br>3.30                                       | Mins<br>20                | Sealed                           | Grou<br>Fast fl                         | ndwater                              |
| Remar<br>Symbols a<br>abbreviati<br>explained<br>accompar | ks Age<br>and<br>ons are<br>on the<br>nying | Inspect<br>service<br>Falling<br>up to g<br>UT at 1<br>SPT at<br>Chalk 1 | ion pit<br>s were<br>Head P<br>round 1<br>4.50-14<br>20.00-2<br>ogged i | hand<br>found.<br>ermeab<br>evel.<br>.95m,<br>0.23m,<br>n acco | excavat<br>ility t<br>0.20m r<br>trip f<br>rdance | ted to<br>test ca<br>recover<br>nammer<br>with C | 1.20m d<br>rried c<br>y.<br>sub brc<br>IRIA Re     | bepth, u<br>out duri<br>oke off<br>oport C5                    | during t   | archae<br>ing at<br>est.<br>. Flin                | ologis<br>a dep<br>ts des                     | ts supe<br>th of 4<br>cribed                        | as in "   | , and mater ad            | no Loge<br>dded Che<br>Figu      | ged by<br>cked by<br>ire                | JD/SI<br>CPL<br>1 of 5<br>12/05/2020 |
| All dimens  | sions<br>res.                               | Chalk",  | Append<br>accordance  | uith BS59  | <b>к.N. Мо</b><br>30:2015                         | Discontinuity                                    | <b>e, 2014</b><br>/ column gra                     | phic is illustr  | tes Publ   | <b>ishing</b><br>es not repre                     | ). Inta                                       | act dry<br>tinuities as f                           | ound in the c   | <b>Y</b><br>ore, refer to | Discontinuity                    | Summary She                             |                                      |

| Project  | A303                 | AMESBUR   | AY TO BE  | ERWICK I                                 | oown -                          | PHASE                                 | Engine   | er  | AECOM  |  |  |   |  | Boreho<br>Project                    | le B                     | H72405                  |                                      |
|--|----------------------|---|---|--|---------------------------------|---------------------------------------|--|---|--|--|--|---|--|--------------------------------------|--------------------------|-------------------------|--------------------------------------|
|  |                      | JUNIESS   |   |  |                                 |                                       | Nationa  | al Grid   | 415625.  | 7 E  |  |   |  | i i ojeot i                          |                          | CI97708                 |                                      |
| Client   | HIGH                 | WAYS ENG  |   |  |                                 |                                       | Coordin  | nates   | 142095.0   | 5 N  |  |   |  | Ground                               | Level 7                  | 2.30 m                  | OD                                   |
| Coro Bur   | /Dopth               | Depth   | Туре  | Length                                   |                                 | SPT N                                 | Strata   | 1   |  |  |  |   |  |                                      |                          | Scale                   | .25<br>Discont-                      |
| (Core Dia  | a/Time)              | Cased &<br>(to Water  | TCR/SCR%  | Max/Min                                  | %                               | (FI)                                  | Descrip  | otion   |  |  |  |   |  |                                      | Depth<br>(Level)         | Legend                  | inuity                               |
| 6.00-<br>6.00-<br>6.00-  | 6.70<br>6.10<br>6.45 | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | B<br>D  |  |                                 | C6                                    | CHALK<br>subar<br>conte<br>low c<br>Matri<br>Betwe<br>Betwe<br>small | C, recov<br>gular f<br>nt of s<br>lensity<br>x is when 6.00<br>en 6.00<br>. flint | rered as<br>time to o<br>subangula<br>and whit<br>ite.<br>0-6.70m,<br>fragment | slight<br>coarse<br>ar chal<br>te. Wit<br>clasts<br>with r<br>ts (up | ly san<br>GRAVEL<br>k. Clas<br>h rare<br>are h:<br>are to<br>to 50mr | ly silt<br>with a<br>sts are<br>brown<br>igh den<br>occasi<br>a in si | y angul<br>low co<br>very w<br>stainin<br>sity.<br>onal an<br>ze). | ar to<br>bble<br>eak,<br>g.<br>gular | ( <u>Lever</u> )<br>     |                         |                                      |
|  |                      | -   |   |  |                                 |                                       | Above<br>of br   | e 6.70m,<br>cown cla  | with ra  | are poc  | kets (ı  | ıp to 5   | Omm in   | size)                                | -                        |                         |                                      |
| 7.00-<br>7.50-<br>7.50-  | 7.10<br>8.00<br>7.95 | -<br>-<br>-<br>-<br>-<br>-<br>(5.50)<br>-<br>-<br>-<br>-                                    | D<br>B<br>D                                       |  |                                 | 54                                    | Betwe<br>mediu   | een 7.50<br>m flint   | 0-8.00m,<br>fragmen  | with o<br>nts (up  | ccasion<br>to 70r  | nal sma<br>mm in s  | ll and<br>ize).  |                                      |                          |                         |                                      |
| 8.50-  | 8.60                 | -   | D   |  |                                 |                                       |  |   |  |  |  |   |  |                                      | -<br>-<br>-<br>-<br>-    |                         |                                      |
| 9.00-  | 9.45                 | 9.00<br>(5.60)<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                                 | ם   |  |                                 | \$5                                   |  |   |  |  |  |   |  |                                      |                          |                         |                                      |
| Drilling   | Hole                 |   | <b>-</b> • ·                                      |  | 0                               | Progre                                | ess<br>Depth   | Depth to  | D-4  | <b>T</b> '   | Grour<br>Depth   | ndwate  | r<br>Dorr í  | in                                   | Depth                    | Rema                    | rks on                               |
| Depth  | Dia                  |   | rechnique   | e  | Crew                            | of Hole                               | Cased  | Water   | Date   | IIME   | Struck   | Cased   | RUSE TO  | Mins                                 | Sealed                   | Groun                   | dwater                               |
| Remark<br>Symbols a<br>abbreviatio<br>explained of<br>accompany<br>key sheet.<br>All dimension | ks AG                | determi<br>test re<br>## Addi<br>Backfil<br>Flush:  | ned fro<br>sults.<br>tional<br>1 detai<br>16.50-2 | om hand<br>detail<br>lls from<br>20.00m, | press<br>added<br>base<br>Air/M | ure on<br>by Cli<br>of hol<br>ist, 0% | standar<br>ent's c<br>e: bent<br>return                              | nd size<br>consulta<br>conite u   | samples<br>int, Rory<br>ip to gro  | or, wh<br>y Mortin<br>ound le  | ere uno<br>more.<br>vel.   | lertake   | n, from  | labora                               | Lory Logo<br>Che<br>Figu | ged by<br>cked by<br>re | JD/SI<br>CPL<br>2 of 5<br>12/05/2020 |

| Project              | A303 AMESBUR<br>7A COUNTESS           | Y TO BERWICK D                  | OWN - PHASE         | Engineer                     | AECOM                |        | E | <b>Borehole</b><br>Project No | BH72405<br>PC197708 |                    |
|----------------------|---------------------------------------|---------------------------------|---------------------|------------------------------|----------------------|--------|---|-------------------------------|---------------------|--------------------|
| Client               | HIGHWAYS ENG                          | LAND                            |                     | National Grid<br>Coordinates | 415625.7<br>142095.6 | E<br>N | C | Ground Level                  | 72.30 M             | OD                 |
| Drilling             | )                                     | Properties/Sa                   | mpling              | Strata                       |                      |        |   |                               | Scale 1             | :25                |
| Core Rur<br>(Core Di | n/Depth Cased &<br>a/Time) (to Water) | Type Length<br>TCR/SCR% Max/Min | RQD SPT N<br>% (FI) | Description                  |                      |        |   | Depth                         | Legend              | Discont-<br>inuity |

| (Core Dia/Time)                  | (to Water)  | TCR/SCR%   | Max/Min   | %       | (FI)          | Descrip        | blion               |                        |                   |               |                   |                |                | (Level)                       | Legena        | inuity            |
|----------------------------------|-------------|------------|-----------|---------|---------------|----------------|---------------------|------------------------|-------------------|---------------|-------------------|----------------|----------------|-------------------------------|---------------|-------------------|
|                                  | _           |            |           |         |               | Poter          |                     | 0 10 10-               | with              |               |                   | ama 1 1        | flint          | _                             |               |                   |
|                                  | _           |            |           |         |               | fragi          | ments (u            | up to 20m              | m in s            | ize).         | angutar           | Smail          | LIIIC          | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
| 10.50-11.00                      | 10 50       | В          |           |         | 95            | At 10          | 0.50m, c            | halk cla               | sts lo            | cally a       | stained           | brown.         | d              | -                             |               |                   |
| 10.30-10.33                      | (6.00)      | D          |           |         | 55            | mediu          | um flint            | fragmen                | ts (up            | to 601        | nm in s           | ize).          |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | _           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | _                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
| 11.50-11.60                      | -           | D          |           |         |               | Betwe          | en 11.5             | 0-11.60m               | , with            | rare a        | angular<br>fragm  | and<br>ents (u | ID to          | -                             |               |                   |
|                                  | -           |            |           |         |               | 70mm           | in size             | e).                    | meara             |               | c rrugm           | (0             | .p 00          | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
| 12.00-12.45                      | 12.00       | D          |           |         | S15           |                |                     |                        |                   |               |                   |                |                | _                             |               |                   |
|                                  |             |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | _           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
| 13.00-13.50                      | 13.00       | D<br>UTF60 |           |         |               | Betwe<br>3mm t | en 13.0             | 0-13.50m               | , cobb            | le of 1       | rinded            | flint w        | vith a         |                               |               |                   |
| 15100 15115                      | (7.00)      | 01100      |           |         |               | Betwe          | en 13.0             | 0-13.10m               | , with            | occas         | ional a           | ngular         | small          | -                             |               |                   |
|                                  | -           |            |           |         |               | and r          | nedium f            | lint fra               | gments            | (up to        | 5 80mm            | in size        | •)•            | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
| 13.50-13.95                      | 13.50       | D          |           |         | S20           | Betwe          | en 13.5<br>ments (u | 50-13.95m<br>10 to 20m | ı, with<br>m in s | rare a        | angular           | small          | flint          | -                             |               |                   |
|                                  |             |            |           |         |               |                |                     | .p 00 101              |                   | ,             |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | _           |            |           |         |               | Betwe          | en 14.1             | 0-14.20m               | . with            | occas         | ional a           | ngular         | small          | _                             |               |                   |
| 14.10-14.20                      | -           | D          |           |         |               | and r          | nedium f            | lint fra               | gments            | (up to        | 5 60mm            | in size        | e).            | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
| 14.50-14.95                      | 14.50       | UT80       |           |         |               | Betwe          | en 14.5<br>gular s  | 50-14.95m<br>mall and  | ∖, with<br>∣mediu | many a many a | angular<br>ts (up | and            | ı x            | -                             |               |                   |
|                                  | -           |            |           |         |               | 110mr          | n in siz            | e).                    |                   |               |                   |                |                | -                             |               |                   |
|                                  | _           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             |               |                   |
|                                  | -           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | -                             | Fit           |                   |
|                                  | F           |            |           |         |               |                |                     |                        | _                 |               | _                 |                |                | -                             | ╞╬┲╬┲╲        |                   |
| 14.95-15.00                      | <u></u>     | D<br>D     |           |         | S46           | Betwee         | en 15.0<br>1.       | 00-15.45m              | , chal            | K Clast       | ts loca           | ⊥⊥y sta        | ined           | <u> </u>                      |               |                   |
| Drilling                         |             |            | ļ         | ļ       | Progre        | ess            |                     |                        |                   | Grour         | ndwate            | r              |                |                               |               |                   |
| Depth Hole                       | -           | Technique  | e         | Crew    | Depth         | Depth          | Depth to            | Date                   | Time              | Depth         | Depth             | Rose to        | in<br>Mina     | Depth                         | Remar         | ks on             |
|                                  |             |            |           |         |               | Cased          | vvater              |                        |                   | SUUCK         | Cased             |                | IVIINS         | Sealed                        | Ground        | water             |
|                                  |             |            |           |         |               |                |                     |                        |                   |               |                   |                |                |                               |               |                   |
|                                  |             |            |           |         |               |                |                     |                        |                   |               |                   |                |                |                               |               |                   |
|                                  |             |            |           |         | ]             |                |                     |                        |                   |               |                   |                |                |                               |               |                   |
| Remarks                          |             |            |           | !       |               |                | ļ                   |                        | ļ                 | 1             | !                 | !              | I              | Logg                          | ed by         | D/ST              |
| AGS                              | l           |            |           |         |               |                |                     |                        |                   |               |                   |                |                | Chec                          | ked by c      | PL                |
| Symbols and<br>abbreviations are |             |            |           |         |               |                |                     |                        |                   |               |                   |                |                | Figur                         | e 3           | ot 5<br>2/05/2020 |
| explained on the                 |             |            |           |         |               |                |                     |                        |                   |               |                   |                |                |                               |               |                   |
| key sheet.                       |             |            |           |         |               |                |                     |                        |                   |               |                   |                |                | Ē                             | എമ്പം         | त्मि              |
| All dimensions are in metres     | Logaed in : | accordance | with BS59 | 30:2015 | Discontinuity | column ar      | aphic is illustra   | ative only & do        | es not repre      | esent discon  | tinuities as f    | ound in the c  | core, refer to | <b>سرح</b><br>Piscontinuity S | Summary Sheet |                   |

| Project                  | A303               | AMESBUI          | RY TO BE   | RWICK I      | DOWN -  | PHASE            | Engine         | ər                  | AECOM                        |                    |                   |                    |                   | Boreho<br>Project | NO PO           | H72405  |                          |
|--------------------------|--------------------|------------------|------------|--------------|---------|------------------|----------------|---------------------|------------------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-----------------|---|--------------------------|
| Client                   | /A CC              | ONIEDD           |            |              |         |                  | Nationa        | al Grid             | 415625.7                     | E                  |                   |                    |                   |                   |                 |   |                          |
| Drilling                 | HIGHW              | AYS ENG          | Prope      | rties/Sa     | molin   | a l              | Coordin        | nates<br>a          | 142095.6                     | 5 N                |                   |                    |                   | Ground            | Level 72        | 2.30 m<br>Scale 1   | OD<br>25                 |
| Core Ru                  | n/Depth            | Depth<br>Cased & | Туре       | Length       | RQD     | SPT N            | Descrip        | otion               |                              |                    |                   |                    |                   |                   | Depth           | Legend  | Discont-                 |
| (Core D                  | ia/Time)           | (to Water        | ICR/SCR/   |              | 70      | (11)             |                |                     |                              |                    |                   |                    |                   |                   | (Level)         |   | inuity                   |
|                          |                    | (8.00)           |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    | F                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | Ļ               |   |                          |
|                          |                    | -                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | 15.45           |   |                          |
|                          |                    | F                |            |              |         |                  | NO FE          | ecovery.            | •                            |                    |                   |                    |                   |                   | - (50.05)       |   |                          |
|                          |                    | -                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    |                  |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | Ţ               |   |                          |
|                          |                    | -                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | <u> </u>        |   |                          |
|                          |                    |                  |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | Ĺ               |   |                          |
|                          |                    | _                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    | _                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | 16.50           |   |                          |
| 16.50-                   | 17.50              | 16.50            | 40<br>0    |              | 0       |                  | CHALK<br>subar | , recov<br>ngular f | vered as<br>fine to c        | a very<br>oarse    | silty<br>GRAVEL   | angula<br>. Clast  | ar to<br>s are w  | very              | (55.80)         |   |                          |
| 16.50-                   | -16.95             | 16.50            | D          |              |         | s59              | weak,<br>local | low de<br>ly crea   | ensity, w<br>m.              | hite.              | Matrix            | is lig             | ght brow          | vn –              | -               |   |                          |
|                          |                    | -                |            |              |         | (AZCL)           | Betwe          | en 16.5             | 50-17.10m                    | ı, assu            | med zoi           | ne of c            | ore los           | 35.               | ļ               |   |                          |
|                          |                    | -                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    |                  |            |              |         |                  | Betwee         | en 17.1<br>jish bro | LO-17.50m<br>own relic       | n, clas<br>spong   | ts wit<br>e trace | h occas<br>es (up  | sional<br>to 20mm | n in              | Ţ               |   |                          |
|                          |                    | -                |            |              |         | (NI)             | size)<br>Betwe | ).<br>en 17.1       | L0-17.20m                    | , with             | occas             | ional a            | ngular            | and               | -               |   |                          |
| -                        |                    | _                |            |              |         |                  | Between bed?   | structu             | 30-17.50m                    | , oran<br>k with   | ge iron<br>iointa | n stain<br>s; frac | ned spor          | ige<br>by         | L               |   |                          |
| 17.50-                   | -19.00             | 17.50            | 67<br>10   | 0.15<br>0.15 | 10      |                  | drill<br>Betwe | ling [Po<br>en 17.5 | ossibly G<br>50-18.00m       | rade A<br>1, assu  | .]. ##<br>med zon | ne of c            | ore los           | -<br>ss.          | -               |   |                          |
| 17.50-                   | -17.95             | 17.50            | D          |              |         | S61<br>(AZCL)    |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    | F                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | Ļ               |   |                          |
|                          |                    | _                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    | -                |            |              |         | (NI)             |                |                     |                              |                    |                   |                    |                   |                   | ļ               |   | •                        |
| 18.30-                   | -18.45             | -                | С          |              |         | (0)              | Betwe<br>##]   | en 18.3             | 30-18.45m                    | n, soli            | d core            | . [Poss            | sibly Gr          | ade A             | -               |   |                          |
|                          |                    | -                |            |              |         |                  | Betwe          | en 18.4             | 15-20.00m                    | , with             | occas             | ional a            | ngular            | to                | Ļ               |   | s<br>N                   |
|                          |                    | -                |            |              |         |                  | 90mm<br>Betwe  | in size             | anali to<br>e).<br>15-20.00m | medium<br>1. dril  | ling fr           | ragment            | ents (u <u>r</u>  | 0 10              | -               |   |                          |
|                          |                    | -                |            |              |         |                  | struc          | tured o             | chalk. ##                    | 1                  | 5                 |                    |                   |                   | Ļ               |   |                          |
|                          |                    | -                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
| 19.00-                   | -20.00             | 19.00            | 40<br>0    |              | 0       | -                | Betwe          | en 19.0<br>m flint  | )0-19.33m<br>fragmen         | n, with<br>its (up | rare a            | angular<br>mm in s | small             | and               | -               |   |                          |
| 19.00-                   | -19.33             | 19.00            | D          |              |         | (NI)<br>592/     |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    | -                |            |              |         | 178              |                |                     |                              |                    |                   |                    |                   |                   | ļ               |   |                          |
|                          |                    | _                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    | _                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    | -                |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | -               |   |                          |
|                          |                    |                  |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | L               |   |                          |
| Drilling                 | g                  |                  |            |              |         | Progre           | ess            |                     |                              | 1                  | Grour             | ndwate             | er                |                   |                 |   |                          |
| Depth                    | Hole<br>Dia        |                  | Technique  | )            | Crew    | Depth<br>of Hole | Depth<br>Cased | Depth to<br>Water   | Date                         | Time               | Depth<br>Struck   | Depth<br>Cased     | Rose to           | in<br>Mins        | Depth<br>Sealed | Rema<br>Groun   | ks on<br>dwater          |
|                          |                    |                  |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   |                 |   |                          |
|                          |                    |                  |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   |                 |   |                          |
| Remar                    | rks <sub>AGS</sub> |                  |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | Logo            | ged by a concerned by | JD/SI<br>CPL             |
| Symbols a<br>abbreviati  | and<br>ons are     |                  |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | Figu            | re 4  | <b>of 5</b><br>2/05/2020 |
| accompar<br>key sheet    | nying              |                  |            |              |         |                  |                |                     |                              |                    |                   |                    |                   |                   | ட<br>செ         | <u>न्</u> रिवर्त  | त्मात्व                  |
| All dimens<br>are in met | sions<br>tres.     | Logged in        | accordance | with BS59    | 30:2015 | Discontinuity    | / column gra   | aphic is illustr    | ative only & do              | es not repre       | esent discon      | tinuities as f     | found in the d    | core, refer to    | Discontinuity § | Summary Sheet   |                          |

| Project                | A303<br>7A CC            | AMESBUR          | Y TO BE    | RWICK     | DOWN -  | PHASE          | Engine       | ər               | AECOM           |              |                |                |               | <b>Boreho</b><br>Project | No E          | BH7240          | 5             |
|------------------------|--------------------------|------------------|------------|-----------|---------|----------------|--------------|------------------|-----------------|--------------|----------------|----------------|---------------|--------------------------|---------------|-----------------|---------------|
| Client                 |                          |                  |            |           |         |                | Nationa      | al Grid          | 415625.7        | E            |                |                |               |                          |               |                 |               |
| Drilling               | HIGHW                    | AYS ENG          | Prope      | rties/Sa  | amplin  | n              | Coordir      | nates            | 142095.6        | N            |                |                |               | Ground                   | Level 7       | Scale           | 0D<br>1·25    |
| Core Rur               | /Depth                   | Depth<br>Cased & | Туре       | Length    | RQD     | 9<br>SPT N     | Descrip      | tion             |                 |              |                |                |               |                          | Denth         | Legend          | Discont-      |
| (Core Dia              | a/Time)                  | (to Water)       | TCR/SCR%   | Max/Min   | %       | (FI)           | Descrip      |                  |                 |              |                |                |               |                          | (Level)       | Legenu          | inuity        |
| 20.00-                 | 20.30                    | 20.00            |            |           |         | S60/<br>150    |              |                  |                 |              |                |                |               |                          | F             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | 20.23         | <b>,</b>        |               |
|                        |                          | _                |            |           |         |                |              |                  | En              | d of B       | orehole        | 8              |               |                          | (52.07        |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | +             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | -             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | Į             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | -             |                 |               |
|                        |                          | _                |            |           |         |                |              |                  |                 |              |                |                |               |                          | F             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | +             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | -             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | Į.            |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | ÷             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | ł             |                 |               |
|                        |                          | _                |            |           |         |                |              |                  |                 |              |                |                |               |                          | Ļ             |                 |               |
|                        |                          | _                |            |           |         |                |              |                  |                 |              |                |                |               |                          | -             |                 |               |
|                        |                          |                  |            |           |         |                |              |                  |                 |              |                |                |               |                          | t             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | Ļ             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | +             |                 |               |
|                        |                          | _                |            |           |         |                |              |                  |                 |              |                |                |               |                          | t -           |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | +             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | ÷             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | Ļ             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | ÷             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | ł             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | Ļ             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | F             |                 |               |
|                        |                          | _                |            |           |         |                |              |                  |                 |              |                |                |               |                          | t             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | l-            |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | F             |                 |               |
|                        |                          | _                |            |           |         |                |              |                  |                 |              |                |                |               |                          | F             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | ÷             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | ł             |                 |               |
|                        |                          | _                |            |           |         |                |              |                  |                 |              |                |                |               |                          | Ļ             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | -             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | ţ             |                 |               |
|                        |                          | -                |            |           |         |                |              |                  |                 |              |                |                |               |                          | +             |                 |               |
|                        |                          | _                |            |           |         |                |              |                  |                 |              | -              |                |               |                          | _             |                 |               |
| Denth                  | Hole                     | -                | Technique  | <u> </u>  | Crew    | Progr<br>Depth | ess<br>Depth | Depth to         | Date            | Time         | Grour<br>Depth | Depth          | r<br>Rose to  | in                       | Depth         | Rem             | arks on       |
| Берш                   | Dia                      |                  | i sonnique |           | 01000   | of Hole        | Cased        | Water            | Duio            |              | Struck         | Cased          | 1.000 10      | Mins                     | Sealed        | Grou            | ndwater       |
|                        |                          |                  |            |           |         |                |              |                  |                 |              |                |                |               |                          |               |                 |               |
|                        |                          |                  |            |           |         |                |              |                  |                 |              |                |                |               |                          |               |                 |               |
| Remar                  | KS AR                    |                  |            |           | ļ       | r              | ļ            | <u> </u>         | <u></u>         | ļ            | 1              | ļ              | ļ ļ           |                          | Log           | iged by         | JD/SI         |
| Symbols a              | nd                       |                  |            |           |         |                |              |                  |                 |              |                |                |               |                          | Che<br>Figu   | ecked by<br>ure | CPL<br>5 of 5 |
| explained of accompany | ns are<br>on the<br>ving |                  |            |           |         |                |              |                  |                 |              |                |                |               |                          |               |                 | 12/05/2020    |
| key sheet.             | ,g                       |                  |            |           |         |                |              |                  |                 |              |                |                |               |                          | g             | eoled           | <u>Eeim</u>   |
| are in metr            | es.                      | Logged in a      | accordance | with BS59 | 30:2015 | Discontinuit   | y column gra | aphic is illustr | ative only & do | es not repre | esent discon   | tinuities as f | ound in the c | ore, refer to            | Discontinuity | Summary Shee    | et            |

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

#### Project No: PC197708

#### Location: BH72405 Depth: 14.50-14.95m



#### **Description:**

CHALK, recovered as creamish white with occasional orangish brown staining, slightly sandy gravelly SILT. Clasts are very weak, low density, white with rare black specks. With many angular and subangular small and medium flints (up to 70mm x 110mm).

| Project                                   | A303<br>7A C                 | AMESBUR                                  | Y TO BE                       | RWICK I              | OWN -                   | PHASE                | Enginee                             | ſ                             | AECOM  |   |  |                                       |                                      | Boreho<br>Proiect | le B<br>No P | C197708                          |                             |
|---|------------------------------|--|-------------------------------|----------------------|-------------------------|----------------------|-------------------------------------|-------------------------------|--|---|--|---------------------------------------|--------------------------------------|-------------------|--------------|----------------------------------|-----------------------------|
| Client                                    |                              |  |                               |                      |                         |                      | National                            | Grid                          | 415742.4   | Ε   |  |                                       |                                      | Oracia            |              |                                  |                             |
| Sampli                                    | na                           | WAYS ENG                                 | LAND                          | Proper               | ties                    |                      | Strata                              | ites                          | 142134.1   | _ IN                                      |  |                                       |                                      | Ground            | Level 7      | 2.66 m<br>Scale 1                | :25                         |
| Depth                                     | 5                            | Sample                                   | Depth<br>Cased &              | Strength             | W                       | SPT N                | Descript                            | ion                           |  |   |  |                                       |                                      |                   | Depth        | Legend                           | Level                       |
|   |                              | Туре                                     | (to Water)                    | кра                  | %                       |                      |                                     |                               |  |   |  |                                       |                                      |                   | G.L.         |                                  | m OD<br>72.66               |
| 0.00-                                     | 0.15                         | B<br>D                                   |                               |                      |                         |                      | MADE (<br>grave)<br>(up to          | ROUND:<br>Lly si<br>5 5mm t   | : Soft br<br>lt with c<br>thick). (                      | cown sl<br>ccasic<br>ravel                | ightly<br>nal roo<br>is angu             | sandy<br>otlets<br>ilar to            | slightl<br>and roo<br>subrou         | y<br>ts<br>nded   | 0.15         |                                  | 72.51                       |
| 0.20-                                     | 0.30                         | - D                                      |                               |                      |                         |                      | MADE O                              | ROUND:                        | : Cream a  | and bro                                   | wn grav                                  | velly s<br>)0mm in                    | ilty sa<br>size)                     | /<br>nd<br>of     | -            | <b>▼</b>                         |                             |
| 0.50-<br>0.50-                            | 0.60<br>0.60                 | – В<br>Д                                 |                               |                      |                         |                      | white<br>is ang<br>flint.           | slight<br>jular t             | tly sandy<br>to subrou                                   | r sligh<br>unded f                        | tly gra<br>ine to                        | ovelly<br>coarse                      | silt. G<br>chalk                     | ravel<br>and      | - 0.50       |                                  | 72.16                       |
|   |                              | -  |                               |                      |                         |                      | MADE C<br>cobble<br>Gravel<br>chalk | ROUND:<br>Conte<br>is and f:  | : White g<br>ent of ar<br>ngular to<br>lint.             | gravell<br>ngular<br>subro                | y silty<br>to suba<br>ounded f           | y sand<br>angular<br>line to          | with a<br>flint.<br>coarse           | low               | +<br>-<br>-  |                                  |                             |
| 1.00-<br>1.00-                            | 1.10<br>1.10                 | — В<br>D<br>-                            |                               |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | 1 20         |                                  | 71 46                       |
| 1.30-<br>1.30-                            | 1.80<br>1.75                 | -<br>- B<br>-<br>-                       | 1.30<br>(1.00)                |                      |                         | S40                  | MADE (<br>sandy<br>conter<br>fine t | ROUND:<br>slight<br>it of f   | : Very st<br>tly grave<br>flint. Gr<br>rse chalk         | iff an<br>ally si<br>avel i<br>with       | d stiff<br>lt with<br>s angul<br>some ri | cream<br>n a low<br>lar to<br>inded f | slight<br>cobble<br>subangu<br>lint. | ly<br>lar         |              |                                  | /1.46                       |
| 1.80-                                     | 1.90                         | -<br>-<br>- D                            |                               |                      | 29                      |                      | At 1.7<br>of cor                    | 70m, su<br>ncrete             | ubangular<br>•   | mediu                                     | m grave                                  | el size                               | d fragm                              | ent               | -            |                                  |                             |
|   |                              | -  |                               |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | +<br>+<br>+  |                                  |                             |
| 2.30-<br>2.30-                            | 2.80<br>2.75                 | - В<br>Д                                 | 1.50                          |                      |                         | S29                  |                                     |                               |  |   |  |                                       |                                      |                   | -            |                                  |                             |
|   |                              | -  | (DRI)                         |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | -            |                                  |                             |
| 2.90-                                     | 3.00                         | -<br>- D                                 |                               |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | -            |                                  |                             |
|   |                              | -  |                               |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | +<br>-<br>-  |                                  |                             |
| 3.30-<br>3.30-                            | 3.80<br>3.75                 | - B<br>D<br>-                            | 1.50<br>(DRY)                 |                      |                         | s14                  |                                     |                               |  |   |  |                                       |                                      |                   | -            |                                  |                             |
| 3.70                                      |                              | -<br>w                                   |                               |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | -            | ¥                                |                             |
| 3.84                                      | 4 . 0.0                      | W  |                               |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | -            | Y                                |                             |
| 3.90-                                     | 4.00                         | _  |                               |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | _            |                                  |                             |
|   |                              | -  |                               |                      |                         |                      |                                     |                               |  |   |  |                                       |                                      |                   | +            |                                  |                             |
| 4.30-<br>4.30-                            | 4.80<br>4.75                 | - В<br>D                                 | 1.50                          |                      |                         | s5                   | POSSIE                              | SLE MAI                       | DE GROUNI  | : Soft                                    | greyis                                   | sh brow                               | n mottl                              | ed                | 4.30         |                                  | 68.36                       |
|   |                              | -  | (3.84)                        |                      |                         |                      | grey s<br>angula<br>chalk.          | ir to s                       | ly sandy<br>subangula                                    | gravel<br>ar fine                         | to coa                                   | arse fl                               | el 15<br>int and                     | L                 | -            |                                  |                             |
|   |                              | -  |                               |                      |                         |                      | Soft of                             | reyisl                        | h brown s  | lightl                                    | y sandy                                  | / sligh                               | tly gra                              | velly             | -            |                                  |                             |
| 4.90-                                     | 5.00                         | - D                                      |                               |                      | 37                      |                      | CLAY v<br>grey p<br>surrou          | vith or<br>pseudof<br>unded i | ccasional<br>fibrous <u>p</u><br>fine to n               | pocke<br>peat. G<br>nedium                | ts (up<br>ravel i<br>flint.              | to 5mm<br>is angu                     | in siz<br>lar to                     | e) of \           | 4.90         |                                  | 67.76                       |
| Boring                                    | Hole                         |  | ļ                             | ļ · · · ·            |                         | Progr                | ess<br>Depth                        | )enth to                      |  |   | Grour                                    | dwate                                 | r                                    | in                | Denth        | Rema                             | rks on                      |
| Depth                                     | Dia                          |  | Techniqu                      | Э                    | Crew                    | of Hole              | Cased                               | Water                         | Date   | Time                                      | Struck                                   | Cased                                 | Rose to                              | Mins              | Sealed       | Groun                            | dwater                      |
| 0.40<br>1.20<br>9.00<br>20.50             | 0.40<br>0.30<br>0.20<br>0.15 | Inspect<br>Inspect<br>Cable F<br>Cable F | ion Pit<br>ercussi<br>ercussi | .on<br>.on           | DE/SG<br>DC/LC<br>DC/LC | 0.40<br>0.40<br>1.20 | NIL<br>NIL<br>NIL<br>NIL            | 0.35<br>G.L.<br>DRY<br>0.50   | 12/11/19<br>12/11/19<br>14/11/19<br>14/11/19<br>25/11/19 | 08:00<br>18:00<br>08:00<br>18:00<br>08:00 | 4.30<br>5.10                             | 1.50<br>4.50                          | 0.35<br>3.85<br>3.70                 | 20<br>20<br>20    | 4.50<br>NS   | Slow see<br>Slow see<br>Fast see | page<br>page<br>page        |
| Remar                                     | KS AGS                       | Inspect<br>Geotech                       | ion pit                       | : hand e<br>To servi | ces we                  | ted to<br>ere fou    | 0.40m by<br>nd.                     | / arche                       | <u>123/11/19</u><br>eologist                             | and ex                                    | tended                                   | to 1.2                                | Om dept                              | h by              | Log          | ged by<br>cked by                | JR/JD<br>CPL                |
| Symbols a<br>abbreviation<br>explained of | nd<br>ons are<br>on the      | Chalk",<br>determi                       | Append<br>ned fro             | lix B (F<br>m hand   | press                   | ortimor<br>ure on    | e, 2014,<br>standard                | , Whitt<br>1 size             | tles Publ<br>samples                                     | or, wh                                    | ). Inta<br>ere und                       | act dry<br>lertake                    | densit<br>n, from                    | y<br>labora       | Figu         |                                  | <b>1 of 5</b><br>12/05/2020 |
| accompany<br>key sheet.                   | ying                         | cest re<br>Backfil                       | l detai                       | ls from              | n base                  | of hol               | e: bento                            | onite u                       | up to gro  | ound le                                   | evel.                                    |                                       |                                      |                   | ſ            | e de la come                     | nies                        |
| are in metr                               | es.                          | Logged in                                | accordance                    | with BS59            | 30:2015                 |                      |                                     |                               |  |   |  |                                       |                                      |                   |              | ~                                |                             |

| Project   | A303<br>7A CC   | AMESBUR  | RY TO BI         | ERWICK D     | own -   | PHASE            | Enginee  | er   | AECOM  |  |  |   |  | Boreho<br>Project                 | le B<br>No ₽   | C197708         |                                     |
|---|---|--|------------------|--------------|---------|------------------|--|--|--|--|--|---|--|-----------------------------------|--|-----------------|-------------------------------------|
| Client  | нтани   | NAYS ENG   | T.AND            |              |         |                  | Nationa  | l Grid   | 415742.4   | EN   |  |   |  | Ground                            | level 7  | 2.66 m          | סכ                                  |
| Sampli  | ng  |  |                  | Proper       | ties    |                  | Strata   | 1  |  |  |  |   |  | oround                            | 20101 7  | Scale 1         | 25                                  |
| Depth   |   | Sample   | Depth<br>Cased & | Strength     | W<br>%  | SPT N            | Descrip  | tion   |  |  |  |   |  |                                   | Depth  | Legend          | Level                               |
| 5.20-<br>5.20-<br>5.20-   | 6.00<br>5.30<br>5.65                                      | - B<br>- D<br>   | 5.20<br>(3.70)   |              |         | С9               | Loose<br>angul<br>flint  | grey a<br>ar to s<br>•   | and brown<br>subrounde   | sandy<br>d fine  | slight<br>to coa   | ly sil<br>arse bl   | ty GRAV<br>ack rin                                       | EL of<br>ded                      | -<br>-<br>-<br>-<br>-<br>-<br>-  | ▼               | 67.46                               |
| 6.30-<br>6.70-<br>6.70-   | 6.40<br>7.20<br>7.15                                      | -<br>- D<br>- В<br>-                                     | 6.70<br>(6.00)   |              | 6.3     | C14              | Mediu<br>GRAVE<br>flint  | m dense<br>L of ar<br>and 1:   | e grey an<br>ngular to<br>imestone.  | d brow<br>subro  | n sandy<br>unded i   | 7 sligh<br>fine to  | tly sil<br>coarse  | ty                                | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                 | 65.96                               |
| 7.90-<br>8.00-<br>8.00-   | 8.00<br>8.50<br>8.45                                      | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 8.00<br>(4.00)   |              |         | 55               | CHALK<br>fine<br>mediu<br>brown<br>Betwe<br>fragm<br>Betwe<br>suban<br>size) | , recon<br>m dens:<br>stain:<br>en 7.90<br>ents (1<br>en 7.90<br>gular r | vered as<br>rse GRAVE<br>ity, whit<br>ing.<br>0-9.10m,<br>up to 30m<br>0-8.00m,<br>nedium fl | slight<br>L. Cla<br>e with<br>with r<br>m in s<br>with r<br>int fr | ly sanc<br>sts are<br>rare l<br>are ang<br>ize).<br>are ang<br>agments | dy silt<br>e very<br>black s<br>gular s<br>gular a<br>s (up t | y suban<br>weak, 1<br>pecks a<br>mall fl<br>nd<br>o 90mm | gular<br>ow to<br>nd<br>int<br>in | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                 | 64.76                               |
| 9.00-<br>9.50-  | 9.10<br>9.95<br>10.10                                     | -<br>D<br>-<br><br>-<br>D<br>-<br><br>-<br>              | 9.00<br>(6.00)   |              |         | 58               | betwe  | en 10.0  | 00-10.60m  | , with   | rare a   | angular   | flint  |                                   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                               |                 |                                     |
| Boring  |   |  |                  |              |         | Progre           | fragm<br>SS  | ents (1  | up to 30m  | m in s   | ize).<br>Grour   | ndwate  | r  |                                   |  |                 |                                     |
| Depth   | Hole<br>Dia   |  | Techniqu         | e            | Crew    | Depth<br>of Hole | Depth<br>Cased   | Depth to<br>Water  | Date   | Time   | Depth<br>Struck  | Depth<br>Cased  | Rose to  | in<br>Mins                        | Depth<br>Sealed  | Remai<br>Ground | ks on<br>dwater                     |
|   |   |  |                  |              |         | 7.50<br>20.50    | 7.50<br>20.00  | 3.80<br>10.70  | 26/11/19<br>26/11/19   | 08:00<br>18:00   |  |   |  |                                   |  |                 |                                     |
| Remarl<br>Symbols a<br>abbreviatic<br>explained d<br>accompany<br>key sheet.<br>All dimensi<br><u>are</u> in metr | ks AGS<br>nd<br>ons are<br>on the<br>ying<br>ions<br>res. | Logged in  | accordance       | e with BS593 | 30:2015 | ]                |  |  |  | <u> </u>   |  |   |  |                                   | Log<br>Che<br>Figu   |                 | FR/JD<br>CPL<br>2 of 5<br>2/05/2020 |

| Project   | A303<br>7A CC                     | AMESBUF  | RY TO BE              | ERWICK D        | own -   | PHASE   | Engine                  | er                               | AECOM                               |                               |                            |                              |                           | Boreho<br>Project | No<br>No  | BH72406<br>PC197708 | 5                             |
|---|-----------------------------------|--|-----------------------|-----------------|---------|---------|-------------------------|----------------------------------|-------------------------------------|-------------------------------|----------------------------|------------------------------|---------------------------|-------------------|---|---------------------|-------------------------------|
| Client  | HIGHW                             | VAYS ENG   | LAND                  |                 |         |         | Nationa<br>Coordin      | al Grid<br>nates                 | 415742.4                            | ₽<br>EN                       |                            |                              |                           | Ground            | Level   | 72.66 M             | OD                            |
| Sampl   | ing                               |  |                       | Proper          | ties    |         | Strata                  | а                                |                                     |                               |                            |                              |                           |                   |   | Scale 1             | :25                           |
| Depth   |                                   | Sample<br>Type   | Cased &<br>(to Water) | Strength<br>kPa | w<br>%  | SPT N   | Descrip                 | otion                            |                                     |                               |                            |                              |                           |                   | Depth   | Legend              | Leve<br>m OD                  |
| 10.50-<br>10.50-<br>10.50-                        | 12.00<br>10.60<br>10.95           | - B<br>- D<br>- D<br><br><br>                            | 10.50<br>(6.40)       |                 |         | 54      |                         |                                  |                                     |                               |                            |                              |                           |                   |   |                     | V / / / / / / / / / / / / / / |
| 11.50-  | 11.60                             | - D<br>- D<br>   | 12.00<br>(7.80)       |                 |         | 56      |                         |                                  |                                     |                               |                            |                              |                           |                   |   |                     |                               |
| 13.00-  | 13.10                             | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                       |                 |         |         | Betwe<br>Betwe<br>mediu | een 13.0<br>een 13.0<br>um flint | 00-13.10r<br>00-13.95r<br>: fragmen | a, chal<br>a, with<br>hts (up | k clast<br>occas:<br>to 80 | ts are<br>ional s<br>mm in s | weak.<br>mall tc<br>ize). |                   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                     |                               |
| 13.50-<br>13.50-<br>14.50-                        | 15.00<br>13.95<br>14.60           | - B<br>D<br>- D<br>                                      | 13.50<br>(8.60)       |                 |         | S10     |                         |                                  |                                     |                               |                            |                              |                           |                   | -   |                     |                               |
|   |                                   | -  |                       |                 |         |         |                         |                                  |                                     |                               |                            |                              |                           |                   | ţ   |                     |                               |
| 15.00-  | 15.45                             | -<br>-<br>_ D  | 15.00                 |                 |         | S7      | Betwe                   | een 15.(                         | 00-15.45r                           | n, occa                       | sional                     | brown                        | stainin                   | g on              | -   |                     |                               |
| Boring  |                                   | ļ  | (2.00)                | !               |         | Progr   | ess                     | Dopth to                         | - •                                 |                               | Grour                      | ndwate                       | r                         | in                | Donth   |                     |                               |
| Depth   | Dia                               |  | Techniqu              | e               | Crew    | of Hole | Cased                   | Water                            | Date                                | Time                          | Struck                     | Cased                        | Rose to                   | Mins              | Sealed  | Groun               | idwater                       |
| Remar   | ks 🔜                              |  |                       |                 |         |         |                         |                                  |                                     |                               |                            |                              |                           |                   | Lo  | ogged by            | JR/JD                         |
| Symbols a<br>abbreviatio<br>explained<br>accompan | and<br>ons are<br>on the<br>lying |  |                       |                 |         |         |                         |                                  |                                     |                               |                            |                              |                           |                   | Ch<br>Fig   |                     | CPL<br>3 of 5<br>12/05/2020   |
| All dimens<br>are in met                          | sions<br>res.                     | Logged in  | accordance            | with BS593      | 30:2015 |         |                         |                                  |                                     |                               |                            |                              |                           |                   | Ľ   | أهجسهدر             |                               |

| Project 7  | A303<br>7A CC                       | AMESBU<br>OUNTESS   | RY TO BI         | ERWICK I        | OWN -  | PHASE | Engine   | er  | AECOM  |   |  |  |                                       | Boreho<br>Project         | No 1                  | BH72406<br>PC197708 | i                                    |
|--|-------------------------------------|---|------------------|-----------------|--------|-------|--|---|--|---|--|--|---------------------------------------|---------------------------|-----------------------|---------------------|--------------------------------------|
| Client I   | HIGHV                               | VAYS EN   | GLAND            |                 |        |       | Nationa<br>Coordir                                 | al Grid<br>nates  | 415742.  | 4 E<br>1 N  |  |  |                                       | Ground                    | Level                 | 72.66 M             | OD                                   |
| Samplin  | ig                                  |   |                  | Proper          | ties   |       | Strata   | a   |  |   |  |  |                                       |                           |                       | Scale 1             | :25                                  |
| Depth  | -                                   | Sample<br>Type  | Depth<br>Cased & | Strength<br>kPa | w<br>% | SPT N | Descrip  | otion   |  |   |  |  |                                       |                           | Depth                 | Legend              | Level<br>m OD                        |
| 16.00-16   | 6.95                                | - D<br>- D<br>- D<br>- D<br>- D<br>- D<br>- D<br>- D<br>- D<br><br> | 16.50            |                 |        | 514   | Betwe  | een 16.<br>ments (m   | 00-16.10<br>up to 30                                       | n, with<br>mm in s                                | i rare j                                     | angular                                  | small                                 | flint                     |                       |                     |                                      |
| 17.50-17   | 7.60                                | -<br>_ D<br>-   |                  |                 |        |       | Betwee<br>and r                                    | een 17.9<br>medium 1  | 50-17.60<br>Elint fra                                      | n, with<br>agments                                | u occas<br>s (up t                           | ional a<br>o 70mm                        | ngular<br>in size                     | small                     | -<br>-<br>-<br>-<br>- |                     |                                      |
| 18.00-18   | 8.45                                | -<br>-<br>-   | 18.00<br>(10.00  |                 |        | S24   | CHALI<br>Clast<br>blacl<br>mediu<br>Betwe<br>fragn | K, recov<br>ts are v<br>k specks<br>um.<br>een 18.0<br>ments (1 | vered as<br>very weal<br>s, angula<br>00-18.45<br>up to 20 | creami<br>t, low<br>ar to s<br>n, with<br>nm in s | sh whi<br>densit<br>ubangu<br>rare<br>size). | te grav<br>y, whit<br>lar and<br>angular | relly SI<br>e with<br>fine t<br>small | LT.<br>rare<br>o<br>flint | -<br>18.00            | 0                   | 54.66                                |
| 18.50-18   | 8.95                                | _UT90<br>_  | 18.00<br>(10.00) |                 |        |       | At 18<br>smali<br>size                             | 8.61m and me<br>).  | nd 18.87<br>edium fl:                                      | n, with<br>int fra                                | angul<br>gments                              | ar and<br>(up to                         | subangu<br>60mm i                     | ılar<br>.n                | -<br>-<br>-<br>-      |                     |                                      |
| 18.95-19<br>19.00-19   | 9.00<br>9.45                        | -<br>D<br>-   | 19.00<br>(10.50) | )               |        | S33   |  |   |  |   |  |  |                                       |                           | -<br>-<br>-<br>-      |                     |                                      |
| 19.50-19   | 9.95                                | <br>  | 19.00<br>(10.50) | 125             | 30     |       |  |   |  |   |  |  |                                       |                           | -<br>-<br>-<br>-      |                     |                                      |
| 19 95-24   | 0 00                                | -   |                  |                 |        |       | At 19<br>(1001                                     | 9.90m, v<br>mm in si  | with sub<br>ize) with                                      | rounded<br>h 5mm t                                | l mediu<br>hick c                            | m nodul<br>ortex.                        | ar flin                               | it                        | ł                     |                     |                                      |
| Boring   | 5.00                                | <sup>ر</sup> _  |                  |                 |        | Progr | 200  |   |  |   | Grou   | ndw.ato                                  | r                                     |                           |                       |                     | 1                                    |
| Denth  | Hole                                |   | Techniqu         | e               | Crew   | Depth | Depth  | Depth to  | Date   | Time  | Depth  | Depth                                    | Rose to                               | in                        | Depth                 | Rema                | rks on                               |
|  | ыа                                  |   | ,                |                 |        |       | Cased  | vvater  |  |   | STUCK  | Cased                                    |                                       | IVIINS                    | Sealed                | Groun               | uw ater                              |
| Remarks<br>Symbols and<br>abbreviations<br>explained on<br>accompanyir<br>key sheet. | S AGS<br>d<br>is are<br>n the<br>ng |   |                  |                 |        |       |  |   |  |   |  |  |                                       |                           |                       |                     | JR/JD<br>CPL<br>4 of 5<br>12/05/2020 |

are in metres. Logged in accordance with BS5930:2015

| Project A303<br>7A CC            | AMESBU<br>OUNTESS | RY TO BI              | ERWICK I        | OOWN -  | PHASE   | Engine             | er               | AECOM    |            |         |        |         | <b>Borehc</b><br>Project | No E     | 3H72406<br>PC197708 |                      |
|----------------------------------|-------------------|-----------------------|-----------------|---------|---------|--------------------|------------------|----------|------------|---------|--------|---------|--------------------------|----------|---------------------|----------------------|
| Client HIGHN                     | NAYS EN           | GLAND                 |                 |         |         | Nationa<br>Coordir | al Grid<br>nates | 415742.4 | 4 E<br>1 N |         |        |         | Ground                   | Level 7  | 72.66 m             | OD                   |
| Sampling                         |                   |                       | Proper          | ties    |         | Strata             | a                |          |            |         |        |         |                          |          | Scale 1             | :25                  |
| Depth                            | Sample<br>Type    | Cased &<br>(to Water) | Strength<br>kPa | w<br>%  | SPT N   | Descrip            | otion            |          |            |         |        |         |                          | Depth    | Legend              | Level<br>m OD        |
| 20.00-20.45                      | D<br>             | 20.00<br>(10.70)      |                 |         | S42     |                    |                  |          |            |         |        |         |                          | -        |                     |                      |
|                                  | _                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | 20.50    |                     | 52.1                 |
|                                  | -                 |                       |                 |         |         |                    |                  | E        | nd of E    | Sorehol | e      |         |                          | -        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | Ļ        |                     |                      |
|                                  | _                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | L        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | ÷        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | -        |                     |                      |
|                                  | F                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | -        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | Ļ        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | -        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | +        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | +        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | Ļ        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | -        |                     |                      |
|                                  | _                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | L        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | +        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | ÷        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | Ļ        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | ł        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | -                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | -        |                     |                      |
|                                  | F                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | F        |                     |                      |
|                                  | _                 |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | Ĺ        |                     |                      |
|                                  | <u> </u>          |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | <u> </u> |                     |                      |
| Boring                           | +                 | +                     | • •             | _       | Progr   | ess<br>Depth       | Depth to         | _        | 1_         | Grour   | ndwate | r       | in                       | Denth    | Rema                | rks on               |
| Depth Dia                        |                   | Techniqu              | e               | Crew    | of Hole | Cased              | Water            | Date     | Time       | Struck  | Cased  | Rose to | Mins                     | Sealed   | Ground              | dwater               |
|                                  |                   |                       |                 |         |         |                    |                  |          |            |         |        |         |                          |          |                     |                      |
| Remarks                          |                   |                       |                 |         | 1       | <u> </u>           | <u> </u>         | <u> </u> | <u> </u>   | 1       |        |         |                          | Log      | iged by             | JR/JD                |
| Symbols and<br>abbreviations are |                   |                       |                 |         |         |                    |                  |          |            |         |        |         |                          | Fig      | ure                 | 5 of 5<br>12/05/2020 |
| explained on the accompanying    |                   |                       |                 |         |         |                    |                  |          |            |         |        |         |                          |          |                     | حالت                 |
| All dimensions                   | l ogged ir        |                       | with BS59       | 30.2015 |         |                    |                  |          |            |         |        |         |                          | 몓        |                     | mmæd                 |

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

#### Project No: PC197708

#### Location: BH72406 Depth: 18.50-18.95m



#### **Description:**

CHALK, recovered as slightly sandy slightly silty subangular and subrounded GRAVEL. Clasts are very weak, low density, white with rare black specks. Matrix is white and with occasional orangish brown staining.

At 18.61m and 18.87m, with angular and subangular small and medium flint fragments (up to 60mm in size).

Project: A303Amesbury to Berwick Down, Phase 7A Countess Roundabout

#### Project No: PC197708

#### Location: BH72406 Depth: 19.50-19.95m



#### **Description (after triaxial test):**

CHALK, recovered as silty angular and subangular fine to coarse GRAVEL. Clasts are very weak, low density, white with rare black specks and orangish brown surface staining. Matrix is white and with rare orangish brown staining.

At 19.90m, with subrounded medium nodular flint (100mm in size) with 5mm thick cortex.

| Project                                 | A303<br>7A CC                        | AMESBUR<br>OUNTESS                                  | Y TO BE  | RWICK                                   | DOWN -                                    | PHASE   | Engineer   | AE   | COM  |  |   | -  |  | <b>Boreho</b><br>Project | le Bl<br>No ₽0                    | H72501                                       |                                      |
|---|--------------------------------------|---|--|---|---|---|--|--|--|--|---|--|--|--------------------------|-----------------------------------|--|--------------------------------------|
| Client                                  | нтани                                | AVS ENG   | T.AND  |   |   |   | National Grid                                    | d 41   | 5374.1   | E  |   |  |  | Ground                   | level 71                          | 1.29 m                                       | OD                                   |
| Drilling                                | )                                    | AIS ENG   | Prope  | rties/Sa                                | ampling                                   | 3   | Strata   | 13   | 2073.0   |  |   |  |  | orouna                   |                                   | Scale 1                                      | :25                                  |
| Core Ru                                 | n/Depth                              | Depth<br>Cased &                                    | Туре   | Length                                  | RQD                                       | SPT N   | Description                                      |  |  |  |   |  |  |                          | Depth                             | Legend                                       | Discont-                             |
| (Core Di                                | a/ l ime)                            | (to Water)  | TCR/SCR%   | wiax/win                                | %   | (FI)  |  |  |  |  |   |  |  |                          | (Level)<br>G.L.                   |  | inuity                               |
| 0.00-                                   | 0.25                                 | -   | B<br>D<br>B<br>ES                                  |   |   |   | MADE GROU<br>sand with<br>to subrou              | IND: S<br>occa<br>inded                      | Soft br<br>sional<br>fine t                                    | own gr<br>rootl<br>o coar                          | avelly<br>ets. G<br>se chal             | slight<br>ravel i<br>lk and              | ly clay<br>s suban<br>flint.             | ey<br>gular              | (71.29)<br>0.25<br>(71.04)        |  |                                      |
| 0.30<br>0.40<br>0.50-<br>0.50           | 0.70                                 | -   | D<br>B<br>ES                                       | PID=:                                   | 8.4ppm                                    |   | MADE GROU<br>clay with<br>subrounde<br>subrounde | ND: F<br>a lo<br>ed cha<br>ed fir            | firm br<br>w cobb<br>alk and<br>ne to c                        | ownish<br>le con<br>flint<br>oarse                 | white<br>tent of<br>Grave<br>chalk a    | sandy<br>E suban<br>el is s<br>and fli   | gravell<br>gular t<br>ubangul<br>nt.     | y<br>o<br>ar to          | 0.50<br>(70.79)                   |  |                                      |
| 0.50                                    |                                      | -   |  | 110-                                    | b. Sppm                                   |   | MADE GROU  | ND: I  | ight b   | rown g   | rey con                                 | ncrete.                                  |  |                          | -                                 | · · · · ·                                    |                                      |
| 0.80-                                   | 1.20                                 | -   | B<br>ES  | PID=:                                   | 8.3ppm                                    |   | PROBABLE silty gra<br>silty of<br>parts to       | MADE<br>wel w<br>orang<br>a sli              | GROUND<br>with oc<br>gish br<br>ghtly                          | : Dens<br>casion<br>own sa<br>sandy                | e crean<br>al poch<br>ndy cla<br>slight | nish wh<br>cets (u<br>ay, gra<br>ly grav | ite san<br>p to 40<br>ding in<br>elly si | dy<br>mm in<br>lt.       | - 0.80<br>(70.49)                 |  |                                      |
| 1.10                                    |                                      | L   | D  |   |   |   | Gravel is chalk and                              | s suba<br>l flir                             | ingular<br>it.   | to su  | brounde                                 | ed fine                                  | to coa                                   | rse                      | Ļ                                 |  |                                      |
| 1.20-<br>1.20-                          | 1.65                                 | - NIL   | B<br>D   |   |   | s37   |  |  |  |  |   |  |  |                          | -                                 | ⊻  |                                      |
| 1.34                                    |                                      | (DRY)   | w  |   |   |   |  |  |  |  |   |  |  |                          | +                                 |  |                                      |
| 2.00                                    |                                      | -<br>-<br>-<br>-<br>-                               | D  |   |   |   |  |  |  |  |   |  |  |                          | -<br>-<br>-<br>-                  | ¥  |                                      |
| 2.20-                                   | 2.65                                 | -   | в  |   |   |   | Below 2.2  | 20m, k                                       | pecomin  | g medi   | um dens                                 | se.                                      |  |                          | +                                 |  |                                      |
| 2.20-                                   | 2.65                                 | - 2.15<br>(1.34)                                    | D  |   |   | S13   |  |  |  |  |   |  |  |                          | ÷                                 |  |                                      |
| 2.20<br>2.20                            |                                      | L   | ES   | PID=                                    | 3.1ppm                                    |   |  |  |  |  |   |  |  |                          | L                                 |  |                                      |
|   |                                      | -<br>-<br>-   |  |   |   |   | Stiff bro<br>recovered<br>subrounde              | ownish<br>las s<br>ad fir                    | n green<br>soft. G<br>ne to c                                  | sligh<br>ravel<br>oarse                            | tly gra<br>is suba<br>chalk a           | avelly<br>angular<br>and fli             | sandy C<br>to<br>nt.                     | LAY,                     | 2.60<br>(68.69)                   |  |                                      |
| 3.00                                    |                                      | -   | D  |   |   |   |  |  |  |  |   |  |  |                          | -                                 |  |                                      |
| 3.20-<br>3.20-<br>3.20                  | 3.65<br>3.65                         | - 3.10<br>(2.80)                                    | B<br>D<br>ES                                       |   |   | S17   |  |  |  |  |   |  |  |                          | -                                 |  |                                      |
| 3.20                                    |                                      | -   |  | PID=:                                   | 8.5ppm                                    |   | Loose bro<br>Gravel is<br>chalk and<br>Below 3.8 | ownish<br>s suba<br>l flir<br>80m, b         | n green<br>angular<br>at.<br>pecomin                           | very<br>to su<br>g crea                            | sandy v<br>brounde<br>mish br           | very cl<br>ed fine<br>cown.              | ayey GR<br>to coa                        | AVEL.<br>rse             | 3.50<br>(67.79)                   |  |                                      |
|   |                                      | -   |  |   |   |   |  |  |  |  |   |  |  |                          | -                                 |  |                                      |
| 4.00                                    |                                      | -   | D  |   |   |   |  |  |  |  |   |  |  |                          | <u> </u>                          |  |                                      |
| 4.30-<br>4.30<br>4.30-<br>4.30          | 4.60<br>4.75                         | -<br>-<br>-<br>(3.70)                               | B<br>ES  | PID=:                                   | 3.4ppm                                    | C6  |  |  |  |  |   |  |  |                          | -<br>-<br>-                       |  |                                      |
|   |                                      | Ľ   | -  |   |   |   | CHALK, re  | cover  | ed as  | slight   | ly sand                                 | ly silt                                  | y to ve                                  | ry                       | 4.60<br>(66.69)                   |  |                                      |
| 4.70-<br>4.70<br>4.75                   | 5.30                                 | -   | B<br>D<br>W  |   |   |   | GRAVEL wi<br>subrounde<br>medium de              | angul<br>th a<br>d cha<br>msity              | lar to<br>low co<br>alk. Cl<br>7 and w                         | subrou<br>bble c<br>asts a<br>hite.                | nded f:<br>ontent<br>re very<br>Matrix  | ine to<br>of sub<br>weak,<br>is cre      | coarse<br>angular<br>low an<br>am and    | to<br>d                  | -                                 |  |                                      |
| 5.00<br>5.00                            |                                      |   | ES   | PID=                                    | 3.0ppm                                    |   | white.   |  |  |  |   |  |  |                          | <u> </u>                          |  |                                      |
| Drilling                                |                                      | 1   |  |   |   | Progre  | 2SS<br>Depth Depth                               | h to   |  |  |   | ndwate                                   | r  | in                       | Denth                             | Roma   | rks on                               |
| Depth                                   | Dia                                  |   | Technique  | 9                                       | Crew                                      | of Hole   | Cased Wat  | er   | Date   | Time   | Struck                                  | Cased                                    | Rose to                                  | Mins                     | Sealed                            | Groun  | dwater                               |
| 1.20<br>6.00<br>16.00<br>18.00<br>30.73 | 0.50<br>0.20<br>0.15<br>0.12<br>0.12 | Inspect<br>Cable F<br>Cable F<br>Rotary<br>Geobor   | ion Pit<br>Percussi<br>Percussi<br>Open Hc<br>S    | :<br>.on<br>.on<br>ole                  | CR/BB<br>CR/BB<br>CR/BB<br>AW/PB<br>AW/PB | G.L.<br>1.20<br>1.20<br>16.00<br>16.00<br>19.90 | NIL D<br>NIL<br>15.30 4.<br>15.30 5.<br>19.90 2. | 25<br>RY 25<br>26<br>00 26<br>50 27<br>00 27 | 5/11/19<br>5/11/19<br>5/11/19<br>5/11/19<br>7/11/19<br>7/11/19 | 08:00<br>18:00<br>08:00<br>18:00<br>08:00<br>18:00 | 2.00<br>6.30                            | 1.60<br>6.10                             | 1.34<br>4.75                             | 20<br>20                 | 5.00<br>NS                        | Slow See<br>Moderate<br>still ri<br>after 20 | page<br>flow,<br>sing<br>mins.       |
| Remar<br>Symbols a<br>abbreviati        | ks AGS                               | Inspect<br>service<br>ES samp<br>** Dril<br>Chalk l | ion pit<br>s were<br>le = 2<br>lers de<br>.ogged i | found.<br>x vial<br>script:<br>n accord | excavat<br>, 2 x p<br>ion.<br>rdance      | ed to<br>plastic<br>with C                      | 1.20m depth<br>jar and 2<br>IRIA Report          | amber<br>c574                                | ler an<br>: jar<br>1, 2002                                     | archae<br>. Flin                                   | ologist                                 | cribed                                   | rvision<br>as in "                       | , and r                  | no Logg<br>Cheo<br>Figur<br>g the | ged by<br>cked by<br>re                      | JD/SI<br>CPL<br>1 of 7<br>12/05/2020 |
| explained<br>accompar                   | on the<br>lying                      | Chalk",<br>determi                                  | Append<br>ned fro                                  | lix B (1<br>m hand                      | R.N. Mo<br>pressu                         | ortimor<br>are on                               | e, 2014, Wh<br>standard si                       | ittle<br>ze sa                               | es Publ<br>mples   | ishing<br>or, wh                                   | ). Inta<br>ere uno                      | act dry<br>lertake                       | densit<br>n, from                        | y<br>labora              | atory                             |  | പ്പം                                 |
| All dimens                              | sions<br>res.                        | test re   | sults.   | with BS59                               | 30:2015                                   | Discontinuit                                    | y column graphic is i                            | illustrativ                                  | e only & do  | es not repre                                       | esent discont                           | tinuities as f                           | ound in the c                            | ore, refer to            | Discontinuity S                   | Summary Sheet                                |                                      |

| Project   | A303   | AMESBUR   | Y TO BE                                 | RWICK I  | - NWOC                              | PHASE  | Enginee  | er  | AECOM  |  |                   |                    |              | <b>Boreho</b><br>Proiect | le<br>No                        | BH72501                      |                                      |
|---|--|---|---|--|-------------------------------------|--|--|---|--|--|-------------------|--------------------|--------------|--------------------------|---------------------------------|------------------------------|--------------------------------------|
| Client  |  |   |   |  |                                     |  | Nationa  | l Grid  | 415374.1   | E  |                   |                    |              |                          |                                 |                              | ~~                                   |
| Drilling  | HIGHN  | NAYS ENG  | LAND                                    | rtios/Sa   | molin                               | r  | Coordin<br>Strata                                  | ates  | 142073.0   | Ν  |                   |                    |              | Ground                   | Level                           | 71.29 M                      | OD<br>•25                            |
| Core Ru   | ∮<br>n/Depth   | Depth   | Туре                                    | Length   | RQD                                 | SPT N  | Deserie  | tion  |  |  |                   |                    |              |                          | Dooth                           |                              | Discont-                             |
| (Core Di  | a/Time)  | (to Water   | TCR/SCR%                                | Max/Min  | %                                   | (FI)   | Descrip  | tion  |  |  |                   |                    |              |                          | (Level)                         | Legend                       | inuity                               |
| 5.35-<br>5.35-  | 5.80<br>5.80   | -<br>-<br>-<br>5.30<br>(5.20)<br>-  | в                                       |  |                                     | Sl   | Betwe<br>flint                                     | en 4.7(   | 0-5.30m, and a constant of the second | with o<br>to 50m                         | ccasion<br>m in s | nal ang<br>ize).   | ular sm      | all                      | -<br>-<br>-<br>-<br>-           |                              |                                      |
| 6.10  |  | -<br>-<br>-<br>-<br>-<br>-<br>-   | D                                       |  |                                     |  |  |   |  |  |                   |                    |              |                          | -<br>-<br>-<br>-<br>-<br>-      |                              |                                      |
| 6.90-<br>6.90-  | 7.90<br>7.35   | -<br>6.85<br>(5.00)<br>-<br>-<br>-<br>-<br>-<br>-                                 | В                                       |  |                                     | 53   |  |   |  |  |                   |                    |              |                          | -<br>-<br>-<br>-<br>-<br>-<br>- |                              |                                      |
| 8.10  |  | -<br>-<br>-<br>-<br>-   | D                                       |  |                                     |  | At 8.<br>(up t<br>Below                            | 10m, w:<br>o 20mm                                 | ith rare<br>in size)<br>, clasts (   | angula<br>•<br>with o                    | r smal            | l flint<br>nal ora | fragme       | nts                      | -<br>-<br>-<br>-<br>-           |                              |                                      |
| 8.45-<br>8.45-<br>9.70  | 9,50<br>8,90   | - 8.40<br>(4.20)<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | BD                                      |  |                                     | 55   | stain<br>Betwe<br>flint                            | ing.<br>en 8.4<br>fragme                          | 5-9.50m, ents (up  | with o<br>to 50m                         | ccasion<br>m in s | nal ang            | ular sm      | all                      |                                 |                              |                                      |
|   |  | -   |   |  |                                     |  |  |   |  |  |                   |                    |              |                          | -                               |                              |                                      |
| Drilling  | 9  |   | ļ                                       |  |                                     | Progre   | ess  |   | 1  |  | Grour             | ndwate             | r            |                          |                                 |                              | ↓ I                                  |
| Depth   | Hole<br>Dia  |   | Technique                               | 9  | Crew                                | Depth<br>of Hole<br>19.90<br>30.40<br>30.40<br>30.73 | Depth<br>Cased<br>19.90<br>30.40<br>30.40<br>30.40 | Depth to<br>Water<br>2.00<br>2.00<br>2.00<br>2.00 | Date<br>28/11/19<br>28/11/19<br>02/12/19<br>02/12/19   | Time<br>08:00<br>18:00<br>08:00<br>18:00 | Depth<br>Struck   | Depth<br>Cased     | Rose to      | in<br>Mins               | Depth<br>Sealed                 | Rema<br>Groun                | rks on<br>dwater                     |
| Remar<br>Symbols a<br>abbreviatie<br>explained<br>accompan<br>key sheet.<br>All dimension | ks Actions<br>and<br>ons are<br>on the<br>hying<br>sions | ## Addi<br>Backfil<br>Chisell<br>Flush:   | tional<br>1 detai<br>ing: 0.<br>18.00-3 | detail<br>ls from<br>70-0.80<br>30.40m,<br>with BS59 | added<br>n base<br>)m for<br>Air/Mi | by Cli<br>of hol<br>60 min<br>ist, 0%                | ent's c<br>e: bent<br>utes.<br>return              | onsulta<br>onite a                                | ant, Rory<br>seal up t   | Morti<br>o grou                          | more.<br>nd leve  | el.                | und in the c | ore, refer to            | Lo<br>Ch<br>Fig<br>Discontinuit | gged by<br>necked by<br>gure | JD/SI<br>CPL<br>2 of 7<br>12/05/2020 |

| Project                  | A303<br>7A C    | AMESBUE          | RY TO BE   | RWICK I   | OOWN -  | PHASE         | Enginee      | ər               | AECOM           |              |                |                 |               | Boreho<br>Project | No E          | 3H72501<br>C197708  |                      |
|--------------------------|-----------------|------------------|------------|-----------|---------|---------------|--------------|------------------|-----------------|--------------|----------------|-----------------|---------------|-------------------|---------------|---------------------|----------------------|
| Client                   |                 |                  |            |           |         |               | Nationa      | al Grid          | 415374.1        | LE           |                |                 |               | Cround            |               | 1 00 m              |                      |
| Drilling                 | HIGH            | VAYS ENC         |            | rties/Sa  | mplin   | a             | Strata       | ales             | 142073.0        |              |                |                 |               | Ground            | Levei         | Scale 1             | :25                  |
| Core Ru                  | n/Depth         | Depth<br>Cased & | Туре       | Length    | RQD     | SPT N         | Descrip      | tion             |                 |              |                |                 |               |                   | Depth         | Legend              | Discont-             |
| (Core Di                 | a/Time)         | (to Water        | TCR/SCR%   | , Max/Min | %       | (FI)          |              |                  |                 |              |                |                 |               |                   | (Level)       |                     | inuity               |
| 10.05-<br>10.05-         | 11.50           | -10.00           | B<br>D     |           |         | <b>S</b> 3    |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | <u>(</u> 3.90)   |            |           |         |               |              |                  |                 |              |                |                 |               |                   | F             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Ì             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | ÷             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Į.            |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | <u> </u>         |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Ę             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | F             |                     |                      |
| 11.50-                   | 12.50           | -                | в          |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
| 11.50-                   | 11.95           | 11.45<br>(3.60)  |            |           |         | S4            |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Į             |                     |                      |
|                          |                 |                  |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | F             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Ļ             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | F             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Ę             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
| 13.00                    |                 | -                | D          |           |         |               | Below        | 7 13.00m         | , very s        | silty.       |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | F             |                     |                      |
| 13.25-                   | 14.50           | -                | в          |           |         |               | Betwe        | en 13.2          | 25-14.70r       | a, with      | occas          | ional a         | ngular        | small             | F             |                     |                      |
| 13.25-                   | 13.70           | (4.10)           | D          |           |         | 519           | and m        | nedium i         | lint fra        | agments      | (up to         | 6 90mm          | in size       | .).               | ļ.            |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 |                  |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Į             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | F             |                     |                      |
|                          |                 |                  |            |           |         |               |              |                  |                 |              |                |                 |               |                   |               |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Ę             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Ĺ             |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | -             |                     |                      |
| 14.70                    | 16 55           | -                | D          |           |         |               | Betwe        | en 14.7          | 5-16.00r        | a, reco      | vered a        | as slig         | htly sa       | ndy               | -             |                     |                      |
| 14.75-                   | 15.20           | 14.70            | D          |           |         | S31           | siit.        |                  |                 |              |                |                 |               |                   | Į.            |                     |                      |
|                          |                 | -                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | +             |                     |                      |
| Drilling                 | )<br>Hole       |                  | •<br>•     |           | Crow    | Progre        | ess<br>Depth | Depth to         | Doto            | Time         | Grour<br>Depth | ndwate<br>Depth | Poso to       | in                | Depth         | Rema                | irks on              |
| Depth                    | Dia             |                  | rechnique  | ÷         | CIEW    | of Hole       | Cased        | Water            | Dale            | rime         | Struck         | Cased           | ruse to       | Mins              | Sealed        | Groun               | dwater               |
|                          |                 |                  |            |           |         |               |              |                  |                 |              |                |                 |               |                   |               |                     |                      |
|                          |                 |                  |            |           |         |               |              |                  |                 |              |                |                 |               |                   |               |                     |                      |
| Kemar                    | KS AG           | 5                |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Log<br>Che    | iged by<br>ecked by | JD/SI<br>CPL         |
| Symbols a<br>abbreviatio | and<br>ons are  |                  |            |           |         |               |              |                  |                 |              |                |                 |               |                   | Figu          | ure                 | 3 of 7<br>12/05/2020 |
| accompan<br>kev sheet    | on the<br>tying |                  |            |           |         |               |              |                  |                 |              |                |                 |               |                   | <br>តា        |                     | ഫിദ്ദ                |
| All dimens               | sions<br>tres.  | Logged in        | accordance | with BS59 | 30:2015 | Discontinuity | / column gra | phic is illustra | ative only & do | es not repre | esent discon   | tinuities as f  | ound in the c | ore, refer to     | Discontinuity | Summary Sheet       |                      |

| Project  | A303<br>7A C0                     | AMESBUR                             | RY TO BE   | RWICK I   | DOWN -  | PHASE            | Enginee                          | er  | AECOM  |  |                                    |                             |                                     | Boreho<br>Project | le E<br>No P  | 3H72501<br>C197708 |                  |
|--|-----------------------------------|-------------------------------------|------------|-----------|---------|------------------|----------------------------------|---|--|--|------------------------------------|-----------------------------|-------------------------------------|-------------------|---|--------------------|------------------|
| Client   |                                   |                                     |            |           |         |                  | Nationa                          | l Grid  | 415374.1   | E  |                                    |                             |                                     | ,<br>0            |   |                    | 00               |
| Drilling   | HIGH                              | WAYS ENG                            | Prope      | rties/Sa  | amplin  | n                | Strata                           | ates  | 142073.0   | N  |                                    |                             |                                     | Ground            | Level 7   | Scale 1            | 0D<br>·25        |
| Core Ru  | 9<br>n/Depth                      | Depth<br>Cased &                    | Туре       | Length    | RQD     | SPT N            | Doscrip                          | tion  |  |  |                                    |                             |                                     |                   | Dopth   | Logond             | Discont-         |
| (Core Di   | a/Time)                           | (to Water)                          | TCR/SCR%   | Max/Min   | %       | (FI)             | Descrip                          | lion  |  |  |                                    |                             |                                     |                   | (Level)   | Legend             | inuity           |
| 15.55-   | -16.00                            | -<br>-<br>-<br>15.30<br>(4.00)<br>- | D          |           |         | 531              | Betwe                            | en 15.5<br>e flint                                | 55-16.00m<br>:s (up to                                       | , with<br>25mm                               | rare ;<br>in size                  | subangu<br>e).              | lar fin                             | e to              | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                    |                  |
|  |                                   | -                                   |            |           |         |                  | No re                            | covery  |  |  |                                    |                             |                                     |                   | (55.29  |                    |                  |
|  |                                   |                                     |            |           |         |                  |                                  |   |  |  |                                    |                             |                                     |                   |   |                    |                  |
| 18.00-   | 18.70                             | - 18.00                             | U<br>D     |           |         | s81              | silty<br>Clast<br>densi<br>light | en 18.0<br>angula<br>s are e<br>ty, whi<br>brown. | or 18.45m<br>ar to sub<br>extremely<br>ite with<br>. [from S | , CHAL<br>angula<br>weak<br>rare b<br>PT sam | r fine<br>to ver<br>lack s<br>ple] | to coa<br>y weak,<br>pecks. | as very<br>rse GRA<br>low<br>Matrix | VEL.              | -<br>-<br>-<br>-  |                    |                  |
| 18.70-   | -19.90<br>                        | 18.70<br>                           | 0          |           |         | (NR)             |                                  |   |  |  |                                    |                             |                                     |                   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-  |                    |                  |
| Drilling   | )<br>]                            | 19.90                               | U          |           |         | Progr            | ess                              |   |  |  | Grour                              | ndwate                      | r                                   |                   |   |                    |                  |
| Depth  | Hole<br>Dia                       | -                                   | Technique  | 9         | Crew    | Depth<br>of Hole | Depth<br>Cased                   | Depth to<br>Water                                 | Date   | Time   | Depth<br>Struck                    | Depth<br>Cased              | Rose to                             | in<br>Mins        | Depth<br>Sealed   | Rema<br>Groun      | rks on<br>dwater |
|  |                                   |                                     |            |           |         |                  |                                  |   |  |  |                                    |                             |                                     |                   |   |                    |                  |
| Remar  | ks <sub>AG</sub>                  | 5                                   |            |           |         |                  |                                  |   |  |  |                                    |                             |                                     |                   | Log   | ged by<br>ecked by | JD/SI<br>CPL     |
| Symbols a<br>abbreviation<br>explained<br>accompany<br>key sheet | and<br>ons are<br>on the<br>nying |                                     |            |           |         |                  |                                  |   |  |  |                                    |                             |                                     |                   | Figu  |                    |                  |
| are in met   | res.                              | Logged in a                         | accordance | with BS59 | 30:2015 | Discontinuit     | y column gra                     | phic is illustr                                   | ative only & do  | es not repre                                 | esent discon                       | tinuities as f              | ound in the c                       | ore, refer to     | Discontinuity   | Summary Sheet      |                  |

| Project A303<br>7A CC  | AMESBUF   | RY TO BE          | RWICK I           | own -    | PHASE                 | Enginee  | ər   | AECOM   |   |   |  |   | Boreho<br>Project                                   | le Bl<br>No ₽C   | H72501        |                                     |
|--|---|-------------------|-------------------|----------|-----------------------|--|--|---|---|---|--|---|---|--|---------------|-------------------------------------|
| Client HIGHN   | VAYS ENG  | LAND              |                   |          |                       | Nationa<br>Coordin   | al Grid  | 415374.1  | E<br>N  |   |  |   | Ground  | Level 71   | L.29 m        | OD                                  |
| Drilling   |   | Prope             | rties/Sa          | mpling   | g                     | Strata   | a  |   |   |   |  |   |   |  | Scale 1       | :25                                 |
| Core Run/Depth<br>(Core Dia/Time)  | Depth<br>Cased &<br>(to Water   | Type<br>TCR/SCR%  | Length<br>Max/Min | RQD<br>% | SPT N<br>(FI)         | Descrip  | otion  |   |   |   |  |   |   | Depth<br>(Level)   | Legend        | Discont-<br>inuity                  |
|  | -<br>-<br>-<br>-<br>-<br>-  |                   |                   |          |                       | Betwe<br>silty<br>Clast<br>densi<br>light<br>fragm   | een 19.9<br>7 angula<br>25 are e<br>27 whi<br>2 brown.<br>ments (1   | 90-20.35m<br>ar to sub<br>extremely<br>ite with<br>. With ra<br>ap to 20m   | , CHAL<br>angula<br>weak<br>rare b<br>re ang<br>m in s  | K, reco<br>r fine<br>to very<br>lack sp<br>ular sp<br>ize).   | overed<br>to coa<br>weak,<br>pecks.<br>nall fl<br>[from S  | as very<br>rse GR4<br>low<br>Matrix<br>int<br>PT samp   | AVEL.<br>is<br>ple]                                 | -<br>-<br>-<br>-<br>-                                    |               |                                     |
| 21.40-22.90<br>21.40-21.85<br>21.40-22.90  | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 20<br>0<br>D<br>D |                   | 0        | S69<br>(AZCL)         | Betwe<br>silty<br>Clast<br>densi<br>light<br>fragm   | een 21.4<br>7 angula<br>5 are é<br>ty, whi<br>2 brown.<br>ments (u   | 40-21.85m<br>ar to sub<br>extremely<br>ite with<br>. With ra<br>up to 20m   | , CHAL<br>angula<br>weak<br>rare b<br>re ang<br>m in s  | K, rec<br>to ver<br>lack s<br>ular s<br>ize).   | overed<br>to coa<br>y weak,<br>pecks.<br>nall fl<br>from S   | as very<br>rse GRA<br>low<br>Matrix<br>int<br>PT samp   | VVEL.<br>is<br>ble]                                 | +<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |               |                                     |
| 22.90-24.40  | _<br>-<br>-<br><br>_22.90   | 97                | 0.26              | 49       | (NI)                  | CHALK<br>suban<br>extre<br>with<br>brown<br>mediu  | C, recov<br>Igular f<br>Emely we<br>occasic<br>1. With<br>Im flint   | vered as<br>line to c<br>eak to ve<br>onal blac<br>many ang<br>fragmen  | a very<br>oarse<br>ry wea<br>k spec<br>ular t<br>ts (up   | silty<br>GRAVEL<br>k, low<br>ks. Mat<br>o suban<br>to 70  | angula<br>. Clast<br>densit<br>trix is<br>ngular<br>m in s   | r to<br>s are<br>y, whit<br>light<br>small t<br>ize).   | :e<br>:o  | -<br>22.60<br>(48.69)<br>-<br>22.90<br>_(48.39)          |               |                                     |
| 22.90-23.35  | 22.90   | 53<br>D           | 0.11              |          | (NI)<br>\$50          | Very<br>occas<br>where   | weak, 1<br>sional h<br>seen a  | low to me<br>black spe<br>are:  | dium d<br>cks, C  | HALK. 1   | , white<br>Discont   | with<br>inuitie   | /<br>es   | -  |               |                                     |
| 23.60-23.77  | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                     | с                 |                   |          | (2)                   | Set 1<br>clean<br>with<br>Set 2<br>commi<br>speck<br>stain<br>[POSS<br>Betwe<br>angul<br>occas<br>fragm<br>Betwe<br>angul<br>occas<br>fragm<br>At 24 | L are 0-<br>h or inf<br>many bl<br>2 are 36<br>Linuted of<br>the stand of the stand of the stand of the stand of<br>the stand of the stand o | -15 degree<br>Filled (0<br>lack spector<br>degrees<br>thalk, st<br>cccasiona<br>exade A1 #<br>90-23.30m<br>subangular<br>to 30m<br>6-23.50m<br>subangular<br>to 30m<br>d 24.25m<br>d 24.25m | es, me<br>/0/1)<br>ks.<br>, clea<br>epped<br>l oran<br>#]<br>, non<br>r fine<br>o suba<br>m in s<br>, non<br>r fine<br>o suba<br>m in s<br>, with | dium sp<br>marl, s<br>n or in<br>and ron<br>gish br<br>intact<br>ito coa<br>ngular<br>ize).<br>intact<br>ito coa<br>ngular<br>ize).<br>intact | paced (<br>stepped<br>hfilled<br>ugh wit<br>rown su<br>, recov<br>arse gr<br>small<br>, recov<br>arse gr<br>small<br>ish bro | 140/350<br>and ro<br>(0/1/1)<br>h many<br>rrface<br>ered as<br>favel. W<br>flint<br>ered as<br>favel. W<br>flint<br>wn reli | )/560)<br>)ugh<br>.)<br>black<br>Mith<br>Mith<br>.c | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-           |               | 1                                   |
| 24.40-25.90<br>24.40-24.85   | _24.40<br>-24.40  | 87<br>65<br>D     | 0.56<br>0.14      | 65       | (AZCL)<br>S57<br>(NI) | Between silty  | en 24.6<br>en 24.6<br>v angula   | 50-24.80m<br>ar to sub  | , assu<br>, non<br>angula   | intact  | ne of c<br>, recov<br>to coa   | ore los<br>ered as<br>irse gra  | ss.<br>vel.   | -<br>-<br>-  |               |                                     |
|  | -   |                   |                   |          |                       | At 24  | 4.90m, v   | with a gr   | ey mar  | l seam  | (up to   | ) 1mm th  | nick).  | -  |               | 1                                   |
| Drilling   |   | ļ                 |                   |          | Progr                 | ess  |  |   | 1   | Grour   | ndwate   | r   | •   |  |               | ↓                                   |
| Depth Hole<br>Dia  |   | Technique         | 9                 | Crew     | Depth<br>of Hole      | Depth<br>Cased   | Depth to<br>Water  | Date  | Time  | Depth<br>Struck   | Depth<br>Cased   | Rose to   | in<br>Mins  | Depth<br>Sealed  | Rema<br>Groun | rks on<br>dwater                    |
|  |   |                   |                   |          |                       |  |  |   |   |   |  |   |   |  |               |                                     |
| Remarks Symbols and<br>abbreviations are<br>explained on the<br>accompanying<br>key sheet.<br>All dimensions<br>are in metror. | Logned in   | accordance        | with BS50'        | 30:2015  | Discontinuit          | V colume are   | anhic is illust  | ative only & do   |   | l   | tinuities as f   | und in the o  | sore refer to                                       | Logg<br>Chec<br>Figur                                    | re            | D/SI<br>CPL<br>5 of 7<br>12/05/2020 |

| Project  | A303<br>7A CC  | AMESBUF                          | RY TO BE      | RWICK I           | DOWN -   | PHASE                 | Enginee   | ər  | AECOM  |  |  | -  |  | <b>Boreho</b><br>Project                 | le E<br>No p               | <b>3H7250</b> 1<br>C197708 |                                      |
|--|--|----------------------------------|---------------|-------------------|----------|-----------------------|---|---|--|--|--|--|--|--|----------------------------|----------------------------|--------------------------------------|
| Client   | нтани  | AYS ENG                          | TAND          |                   |          |                       | Nationa   | al Grid   | 415374.1   |  |  |  |  | Ground                                   | level 7                    | 1.29 m                     | OD                                   |
| Drilling   | )  |                                  | Prope         | rties/Sa          | ampling  | g                     | Strata  | a   | 1120751  |  |  |  |  | Cround                                   | 20101 7                    | Scale 1                    | :25                                  |
| Core Rur   | n/Depth<br>a/Time)   | Depth<br>Cased &<br>(to Water    | Type          | Length<br>Max/Min | RQD<br>% | SPT N<br>(FI)         | Descrip   | otion   |  |  |  |  |  |  | Depth                      | Legend                     | Discont-<br>inuity                   |
| 25.48-   | 25.70  | -<br>-<br>-<br>-<br>-            | с             |                   |          | (3)                   | At 25<br>spong  | 5.30m ar<br>ge trace  | nd 25.63r<br>es (up to   | n, with<br>5 20mm  | orang<br>in siz  | ish bro<br>e).   | wn reli  | с  | -<br>-<br>-<br>-<br>-<br>- |                            | 1                                    |
| 25.90-<br>25.90-   | 27.40<br>26.35   |                                  | 87<br>50<br>D | 0.18<br>0.06      | 22       | (AZCL)<br>S79<br>(NI) | Betwe<br>Betwe<br>silty<br>With<br>fragm  | een 25.9<br>een 26.1<br>7 angula<br>rare ar<br>ments (u   | 90-26.10r<br>LO-26.33r<br>ar to sub<br>ngular to<br>up to 20r  | n, assu<br>n, non<br>pangula<br>p suban<br>nm in s                                   | intact<br>intact<br>intact<br>gular<br>size).                              | ne of c<br>, recov<br>to coa<br>small f  | ore los<br>ered as<br>rse gra<br>lint  | s.<br>vel.                               | -<br>-<br>-<br>-           |                            |                                      |
| 26.97-   | 27.15  |                                  | c             |                   |          | (8)                   | Betwe<br>degre<br>speck<br>At 26<br>Betwe<br>degre<br>speck<br>Betwe<br>degre<br>chalk          | een 26.4<br>ees, cle<br>5.56m, v<br>een 26.6<br>ees, cle<br>ts.<br>een 26.7<br>ees, inf<br>t, stepp           | 45-26.54<br>ean, step<br>50-26.70<br>ean, step<br>70-26.82<br>Filled (1<br>ped and 1                   | n, disc<br>pped an<br>rey mar<br>n, disc<br>pped an<br>n, disc<br>Lmm thi<br>rough w | continu<br>d roug<br>continu<br>d roug<br>continu<br>ck) wi<br>vith ma     | ity inc<br>h with<br>(up to<br>ity inc<br>h with<br>ity inc<br>th comm<br>ny blac  | lined 7<br>many bl<br>1mm th<br>lined 8<br>many bl<br>lined 6<br>inuted<br>k speck | 0<br>ack<br>ick).<br>0<br>ack<br>0<br>s. | -<br>-<br>-<br>-<br>-<br>- |                            |                                      |
|  |  | -                                |               |                   |          | (NI)                  | Betwe<br>silty<br>With<br>mediu<br>Betwe  | en 27.1<br>occasio<br>m flint<br>en 27.3  | L7-27.40<br>ar to sub<br>onal angu<br>fragmen<br>30-27.40<br>Lint2 ##                                  | n, non<br>pangula<br>ilar to<br>nts (up<br>n, poss                                   | intact<br>ar fine<br>suban<br>to 90<br>sible 1                             | , recov<br>to coa<br>gular s<br>mm in s<br>arge so                                 | ered as<br>rse gra<br>mall to<br>ize).<br>lid                                      | vel.                                     | -<br>-<br>-                |                            | 1                                    |
| 27.40-<br>27.40-   | 28.90<br>27.85   | _27.40<br>- 27.40<br>-<br>-<br>- | 88<br>47<br>D | 0.21<br>0.10      | 33       | (AZCL)<br>578<br>(NI) | Betwee<br>Betwee<br>silty<br>With<br>fragm  | een 27.4<br>een 27.5<br>7 angula<br>rare ar<br>ments (u   | 40-27.58<br>58-28.00<br>ar to sub<br>gular to<br>pular to<br>pular to                                  | n, assu<br>n, non<br>cangula<br>c suban<br>nm in s                                   | med zo:<br>intact<br>r fine<br>gular<br>ize).                              | ne of c<br>, recov<br>to coa<br>small f  | ore los<br>ered as<br>rse gra<br>lint  | s.<br>vel.                               | -<br>-<br>-<br>-           |                            |                                      |
| 28.44-   | 28.65  | -<br>-<br>-<br>-<br>-<br>-       | с             |                   |          | (2)                   | At 28<br>mediu<br>Betwe<br>relic<br>Betwe<br>spong  | 3.32m, v<br>m flint<br>een 28.6<br>sponge<br>een 28.7<br>ge bed v   | vith rare<br>fragmen<br>55-29.90r<br>traces<br>75-28.90r<br>vith pale                                  | e angul<br>nts (up<br>n, with<br>(up to<br>n, oran<br>e green                        | ar to<br>to 80<br>much<br>30mm<br>nge iro<br>glauc                         | subangu<br>mm in s<br>orangis<br>in size<br>n-stain<br>onite.                      | lar sma<br>ize).<br>h brown<br>).<br>ed nodu<br>##                                 | ll to<br>lar                             | -<br>-<br>-<br>-<br>-<br>- |                            | 1                                    |
| 28.90-<br>28.90-   | 30.40<br>29.35   | _28.90<br>- 28.90                | 96<br>71<br>D | 0.40<br>0.07      | 50       | (NI)<br>581           | Betwe<br>angul<br>At 29<br>fossi  | een 28.9<br>Lar and<br>9.20m, a   | 90-29.12<br>subangul<br>subhor:<br>thick).   | n, non<br>Lar fin<br>izontal<br>[inoce   | intact<br>e to c<br>sheet<br>ramid   | , recov<br>oarse g<br>like b<br>##]  | ered as<br>ravel.<br>ivalve  |  | -<br>                      |                            |                                      |
| 29.86-   | 30.26  | -<br>-<br>-<br>-<br>-<br>-       | с             |                   |          | (3)                   | Betwee<br>relic<br>green<br>nodul<br>At 29<br>1mm t<br>At 29<br>flint<br>Betwee<br>marl<br>marl | een 29.2<br>sponge<br>dar bed.<br>0.50m ar<br>chick).<br>0.63m, w<br>fragme<br>sean 29.8<br>seams (<br>seams. | 20-29.45<br>a traces<br>onitic ar<br>nd 29.60<br>with rare<br>ants (up<br>30-30.40<br>(up to 3r<br>##] | n, with<br>(up to<br>nd oran<br>n, with<br>a angul<br>to 25m<br>n, with<br>nm thic   | a much<br>50mm<br>age iro<br>a grey<br>ar to<br>m in s<br>occas<br>k). [t] | orangis<br>in size<br>n-stain<br>marl se<br>subangu<br>ize).<br>ional g<br>hin int | h brown<br>). [wea<br>ed spon<br>ams (up<br>lar sma<br>rey wis<br>erwoven          | kly<br>ge<br>to<br>11<br>Py<br>grey      | +<br>-<br>-<br>-<br>-<br>- |                            |                                      |
| Drilling   |  | :<br>I                           | ł             |                   |          | Progr                 | ess<br>Denth  | Depth to  | -  |  |  | ndwate   | r<br> -  | in                                       | Depth                      | Roma                       | arks on                              |
| Depth  | Dia  |                                  | Technique     | e                 | Crew     | of Hole               | Cased   | Water   | Date   | Time   | Struck   | Cased  | Rose to  | Mins                                     | Sealed                     | Grour                      | adw ater                             |
| Remar<br>Symbols a<br>abbreviatio<br>explained<br>accompan<br>key sheet.<br>All dimens | ks Actions are by the b |                                  | accordance    | with BS59         | 30.2015  | Discontinuit          |   | anhic is illustr  |  | L  |  | tinuities as f   |  | ore refer to                             | Log<br>Che<br>Figu         | ged by<br>ecked by<br>are  | JD/SI<br>CPL<br>6 of 7<br>12/05/2020 |

| Project                  | A303<br>7A CC     | AMESBUR          | Y TO BE    | RWICK     | DOWN -   | PHASE         | Enginee       | r               | AECOM           |              |                |                |               | Boreho<br>Project | No PC                         | H72501          |               |
|--------------------------|-------------------|------------------|------------|-----------|----------|---------------|---------------|-----------------|-----------------|--------------|----------------|----------------|---------------|-------------------|-------------------------------|-----------------|---------------|
| Client                   | utauk             |                  |            |           |          |               | National      | l Grid          | 415374.1        | E            |                |                |               | Ground            |                               | 20 m            |               |
| Drilling                 | q                 | AIS ENG          | Prope      | rties/Sa  | ampling  | a             | Strata        | ales            | 142073.0        | IN           |                |                |               | Ground            | Level /1                      | Scale 1         | :25           |
| Core Ru                  | n/Depth           | Depth<br>Cased & | Туре       | Length    | RQD      | SPT N         | Descript      | ion             |                 |              |                |                |               |                   | Depth                         | Leaend          | Discont-      |
| (Core Di                 | ia/Time)          | (to Water)       | TCR/SCR%   | Max/Min   | %        | (FI)          |               |                 |                 |              |                |                |               |                   | (Level)                       |                 | inuity        |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | -                             |                 | 1             |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | t                             |                 |               |
| 30.40-                   | -30.73            | _30.40           | D          |           |          | s100/         |               |                 |                 |              |                |                |               |                   | L                             |                 |               |
|                          |                   | -                |            |           |          | 180           |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | 30.73                         |                 |               |
|                          |                   | [                |            |           |          |               |               |                 | En              | аогв         | orenoie        | 9              |               |                   | (40.56)                       |                 |               |
|                          |                   | _                |            |           |          |               |               |                 |                 |              |                |                |               |                   | <u> </u>                      |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
|                          |                   |                  |            |           |          |               |               |                 |                 |              |                |                |               |                   | t                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | -                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | -                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | -                             |                 |               |
|                          |                   | Ľ                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Ĺ                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
|                          |                   | _                |            |           |          |               |               |                 |                 |              |                |                |               |                   | <u> </u>                      |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | ÷                             |                 |               |
|                          |                   | Ľ                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Į                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | L I                           |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | -                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | ÷                             |                 |               |
|                          |                   | [                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Į.                            |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
|                          |                   | _                |            |           |          |               |               |                 |                 |              |                |                |               |                   | -                             |                 |               |
|                          |                   | L                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Ĺ                             |                 |               |
|                          |                   | [                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Į                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | -                             |                 |               |
|                          |                   |                  |            |           |          |               |               |                 |                 |              |                |                |               |                   | Ĺ                             |                 |               |
|                          |                   | F                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Ļ                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
|                          |                   | _                |            |           |          |               |               |                 |                 |              |                |                |               |                   | <u> </u>                      |                 |               |
|                          |                   | Ľ                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Ĺ                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | F                             |                 |               |
|                          |                   | -                |            |           |          |               |               |                 |                 |              |                |                |               |                   | -                             |                 |               |
|                          |                   | F                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Į į                           |                 |               |
|                          |                   | F                |            |           |          |               |               |                 |                 |              |                |                |               |                   | + I                           |                 |               |
|                          |                   | F                |            |           |          |               |               |                 |                 |              |                |                |               |                   | +                             |                 |               |
| Delle                    |                   |                  |            |           |          | Der           |               |                 |                 |              | 0              | aluce (        | _             |                   | -                             |                 |               |
|                          | y<br>Hole         | -                | Technique  | <u> </u>  | Crew     | Depth         | ESS<br>Depth  | Depth to        | Date            | Time         | Grour<br>Depth | Depth          | Rose to       | in                | Depth                         | Rema            | rks on        |
| Берш                     | Dia               |                  | . connique |           | 5.544    | of Hole       | Cased         | Water           | Date            |              | Struck         | Cased          |               | Mins              | Sealed                        | Groun           | dwater        |
|                          |                   |                  |            |           |          |               |               |                 |                 |              |                |                |               |                   |                               |                 |               |
|                          |                   |                  |            |           |          |               |               |                 |                 |              |                |                |               |                   |                               |                 |               |
| Remar                    | rks 🚚             |                  |            |           | <u> </u> | ł             |               |                 |                 |              |                |                |               |                   |                               | ed bv           | JD/SI         |
| Symbols :                | and and           | 1                |            |           |          |               |               |                 |                 |              |                |                |               |                   | Chec                          | ked by          | CPL<br>7 of 7 |
| abbreviati<br>explained  | ons are<br>on the |                  |            |           |          |               |               |                 |                 |              |                |                |               |                   |                               |                 | 2/05/2020     |
| accompar<br>key sheet    | nying             |                  |            |           |          |               |               |                 |                 |              |                |                |               |                   | ட                             | <u>नि</u> द्यति | त्नीहर        |
| All dimens<br>are in met | sions<br>tres.    | Logged in a      | accordance | with BS59 | 30:2015  | Discontinuity | y column grap | ohic is illustr | ative only & do | es not repre | sent discont   | tinuities as f | ound in the c | ore, refer to     | <b>لرح</b><br>Discontinuity S | Summary Sheet   |               |

| Project   | A303<br>7A CC  | AMESBUR<br>OUNTESS   | Y TO BE   | RWICK  | DOWN -   | PHASE  | Engineer B<br>AECOM P   | orehol<br>roject N                | e BH                                    | <b>172502</b><br>197708   |                                     |
|---|--|--|---|--|--|--|---|-----------------------------------|---|---|-------------------------------------|
| Client  | HIGHW  | NAYS ENG   | LAND  |  |  |  | National Grid 415409.2 E<br>Coordinates 142074.9 N G  | round I                           | Level 71                                | .47 m (   | OD                                  |
| Drilling  | g  |  | Prope   | rties/Sa   | ampling  | g  | Strata  |                                   | ;                                       | Scale 1:  | 25                                  |
| Core Ru<br>(Core D  | n/Depth<br>ia/Time)  | Depth<br>Cased &<br>(to Water)   | Type<br>TCR/SCR%  | Length<br>Max/Min  | RQD<br>%   | SPT N<br>(FI)  | Description   |                                   | Depth<br>(Level)                        | Legend  | Discont-<br>inuity                  |
| 0.10-<br>0.10-<br>0.10-<br>0.10-<br>0.50-<br>0.50-<br>0.50-<br>0.50-                              | - 0.20<br>- 0.20<br>- 0.20<br>- 0.20<br>- 0.60<br>- 0.60<br>- 0.60 | -<br>-<br>-<br>-<br>-<br>-   | B<br>D<br>ES<br>D<br>ES   | PID=:  | 2.9ppm   |  | MADE GROUND: Soft brown slightly sandy slightly<br>gravelly silt with occasional rootlets. Gravel<br>angular to subrounded fine to coarse chalk and<br>flint.<br>MADE GROUND: Greyish white gravelly silty sand<br>a low cobble content of angular to subangular<br>concrete and flint. Gravel is angular to subang<br>fine to coarse brick, chalk, concrete and flint                              | is<br>with<br>ular                | G.L.<br>(71.47)<br>0.20<br>(71.27)      |   |                                     |
| 1.00-<br>1.00-<br>1.00-<br>1.20-<br>1.20-   | - 1.10<br>- 1.10<br>- 1.10<br>- 1.10<br>- 1.70<br>- 1.65           | -<br>-<br>-<br>-<br>-<br>-<br>(DRY)  | B<br>D<br>ES<br>B<br>D  | PID=:  | 2.6ppm   | s32  | PROBABLE MADE GROUND: Creamish white very grave<br>silty sand with a low cobble content of angular<br>subangular flint. Gravel is angular to subangul<br>fine to coarse chalk and flint.<br>PROBABLE MADE GROUND: White, locally light brow<br>slightly sandy slightly gravelly silt with<br>occasional small nodular flint fragments (up to<br>45mm in size).                                      | lly<br>to<br>ar<br>n,             | 0.80<br>(70.67)<br>-<br>1.20<br>(70.27) |   |                                     |
| 2.00-<br>2.00-<br>2.00-<br>2.20-<br>2.20-   | - 2.10<br>- 2.10<br>- 2.10<br>- 2.70<br>- 2.65                     | -<br>-<br>-<br>-<br>-<br>-<br>(DRY)<br>-   | D<br>ES<br>B<br>D   | .8ppm  |  | 539  |   | -                                 | ·<br>·<br>·<br>·<br>·<br>·<br>·         |   |                                     |
| 2.80-<br>2.80-<br>3.00-<br>3.00-<br>3.00-<br>3.20-<br>3.20-                                       | - 3.20<br>- 2.90<br>- 3.10<br>- 3.10<br>- 3.10<br>- 3.70<br>- 3.65 | -<br>-<br>-<br>-<br>-<br>(DRY)   | B<br>D<br>ES<br>2<br>B<br>D   | .7ppm  |  | S28  | Very stiff greyish brown slightly sandy gravell<br>CLAY with a low cobble content of flint. Gravel<br>angular to subrounded fine to coarse flint and<br>chalk.<br>Below 3.20m, stiff with occasional medium flint<br>fragments (up to 70mm in size).  | y<br>is                           | 2.90<br>_(68.57)                        |   |                                     |
| 3.60<br>4.00-<br>4.00-<br>4.30-<br>4.30-<br>4.30-   | - 4.10<br>- 4.10<br>- 4.10<br>- 4.80<br>- 4.80<br>- 4.40<br>- 4.75 | -<br>-<br>-<br>-<br>-<br>-<br>(3.60)<br>-  | W<br>ES<br>B<br>D   | .8ppm  |  | C14  | Medium dense greyish brown sandy GRAVEL with a<br>medium cobble content of subangular flint. Grav<br>is angular to subangular fine to coarse flint.<br>Medium dense greyish brown sandy GRAVEL. Gravel<br>angular to subangular fine to coarse flint.   | el                                | _ 4.00<br>(67.47)<br>4.30<br>(67.17)    | I   |                                     |
| Drilling  | )<br>Hole  | -<br>-<br>   |   |  |  | Progre   | ss Groundwater  |                                   | - Depth                                 |   | ks on                               |
| Depth<br>1.20<br>6.00<br>15.00<br>30.22   | Dia<br>0.40<br>0.20<br>0.15<br>0.12                                | Inspect<br>Cable F<br>Cable F<br>Geobor  | Technique<br>ion Pit<br>Percussi<br>Percussi<br>S   | e<br>.on<br>.on  | Crew<br>Arch<br>DC/LC<br>DC/LC<br>SW/PB  | of Hole<br>G.L.<br>1.20<br>1.20<br>15.00<br>15.00<br>21.00       | Costal  Deptition  Date  Time  Deptition  Deptition  Rose to    Cased  Water  14/11/19  08:00  4.30  4.30  3.60    NIL  DRY  14/11/19  18:00  4.30  4.30  3.60    NIL  DRY  14/11/19  18:00  4.30  4.30  3.60    15.00  7.00  02/12/19  08:00  4.30  4.30  3.60    15.00  0.3/12/19  08:00  4.30  4.30  4.30  4.30    21.00  3.50  03/12/19  18:00  4.30  4.30  4.30                                | Mins<br>20                        | Sealed<br>NS                            | Ground<br>Ground  | dw ater                             |
| Remai<br>Symbols a<br>abbreviati<br>explained<br>accompar<br>key sheet<br>All dimens<br>are in me | ks<br>and<br>ons are<br>on the<br>hying<br>sions<br>tres.          | Inspect<br>Chalk 1<br>Chalk",<br>determi<br>test re<br>## Addi<br>Backfil<br>Flush:<br>Logged in a | ion pit<br>ogged i<br>Append<br>ned fro<br>sults.<br>tional<br>l detai<br>15.00-3<br>accordance | hand of<br>n according B (1<br>m hand<br>detail<br>ls from<br>80.00m,<br>with BS59 | axcavat<br>rdance<br>R.N. Mo<br>pressu<br>added<br>n base<br>Air/Mi<br>30:2015 | ted to<br>with Cortimor<br>ure on<br>by Cli<br>of hol<br>ist, 0% | .20m by archeologist. No services were found.<br>RIA Report C574, 2002. Flints described as in "L<br>a, 2014, Whittles Publishing). Intact dry density<br>standard size samples or, where undertaken, from<br>ent's consultant, Rory Mortimore.<br>: bentonite grout up to ground level.<br>return.<br>column graphic is illustrative only & does not represent discontinuities as found in the cor | ogging<br>labora<br>e, refer to l | the Logge<br>Check<br>tory Figure       | ed by I<br>ked by I<br>a I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I<br>I | ED/SI<br>CPL<br>L of 7<br>2/05/2020 |

| Project  | A303<br>7A CC  | AMESBUR   | Y TO BE             | RWICK I   | DOWN -  | PHASE          | Engineer  | AECOM  |  |                             |  |                                | Boreho<br>Project I | le B<br>No P  | H72502                  |                                      |
|--|--|---|---------------------|-----------|---------|----------------|---|--|--|-----------------------------|--|--------------------------------|---------------------|---|-------------------------|--------------------------------------|
| Client   |  |   |                     |           |         |                | National Grid   | 415409.2   | E  |                             |  |                                | 0                   |   |                         | 00                                   |
| Drilling   | HIGHW  | AYS ENG   | Prope               | rties/Sa  | mplin   | n              | Strata  | 142074.9   | N  |                             |  |                                | Ground              | Level 7   | 1.47 m<br>Scale 1       | 0D<br>•25                            |
| Core Ru  | n/Depth  | Depth<br>Cased &  | Туре                | Length    | RQD     | SPT N          | Description   |  |  |                             |  |                                |                     | Denth   |                         | Discont-                             |
| (Core Di   | a/Time)  | (to Water)  | TCR/SCR%            | Max/Min   | %       | (FI)           | Description   |  |  |                             |  |                                |                     | (Level)   | Legend                  | inuity                               |
| 5.20-<br>5.20-<br>5.30-<br>5.30-   | 5.30<br>5.30<br>6.00<br>5.75                                 | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-   | D<br>ES 2<br>B<br>D | .7ppm     |         | s1             | CHALK, reco<br>Clasts are<br>occasional   | vered as<br>very weak<br>black spe                                       | white<br>, medi<br>cks an                            | and cru<br>um den<br>gular, | eam gra<br>sity, w<br>fine t                   | velly S<br>hite wi<br>co coars | ILT.<br>th<br>e.    | <br>(66.27<br>  |                         |                                      |
| 6.50-  | 6.60   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                          | D                   |           |         | \$9            |   |  |  |                             |  |                                |                     | -<br>-<br>-<br>-<br>-<br>-<br>-   |                         |                                      |
| 8.00-  | 8.10   | (6.00)<br>-<br>-<br>-<br>-<br>-<br>-  | D                   |           |         |                | CHALK, reco   | vered as   | silty  | angula                      | r to su  | bangula                        | r                   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                         |                                      |
| 8.50-<br>8.50-   | 9.00<br>8.95   | -<br>-<br>-<br>-<br>(5.60)<br>-<br>-<br>-<br>-  | B<br>D              |           |         | 56             | Time to Coa<br>content. Cl<br>medium dens<br>Matrix is 1<br>Between 8.5<br>and medium | rse GRAVE<br>asts are<br>ity, whit<br>ight brow<br>0-9.00m,<br>flint fra | L a wi<br>very w<br>e with<br>n.<br>with o<br>gments | eak to<br>rare 1<br>ccasion | weak,<br>weak,<br>black s<br>nal ang<br>in siz | ular sm                        | all                 | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-  |                         |                                      |
| 9.50-  | 9.60   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | D                   |           |         | 57             |   |  |  |                             |  |                                |                     | -<br>-<br>-<br>-<br>-<br>-  |                         |                                      |
| Drilling   | )<br>Holo  |   |                     | ;l        |         | Progre         | +<br>ess<br>Depth Dopth +/  | -  |  |                             | ndwate   | r                              | in                  | Denth   | Romo                    | rks on                               |
| Depth  | Dia  |   | Technique           | 9         | Crew    | of Hole        | Cased Water   | Date   | Time   | Struck                      | Cased  | Rose to                        | Mins                | Sealed  | Groun                   | dwater                               |
|  |  |   |                     |           |         | 21.00<br>30.22 | 21.00 3.00<br>30.00 3.00  | 04/12/19<br>04/12/19   | 08:00<br>18:00                                       |                             |  |                                |                     |   |                         |                                      |
| Remar<br>Symbols a<br>abbreviatio<br>explained<br>accompan<br>key sheet.<br>All dimens<br>are in met | ks AGS<br>and<br>ons are<br>on the<br>yving<br>sions<br>res. | Logged in a   | accordance          | with BS59 | 30:2015 | Discontinuit   | y column graphic is illust  | rative only & do   | es not repre   | esent discon                | tinuities as f                                 | ound in the c                  | ore, refer to       | Logg<br>Che<br>Figu<br>Discontinuity  | ged by<br>cked by<br>re | ED/SI<br>CPL<br>2 of 7<br>12/05/2020 |

| Project                 | A303<br>7A CC   | AMESBUR              | RY TO BE   | RWICK I   | DOWN -  | PHASE            | Enginee        | er                | AECOM              |           |              |                  |               | Boreho<br>Project | le E<br>No T     | BH72502       |                     |
|-------------------------|-----------------|----------------------|------------|-----------|---------|------------------|----------------|-------------------|--------------------|-----------|--------------|------------------|---------------|-------------------|------------------|---------------|---------------------|
| Client                  |                 | JONILDD              |            |           |         |                  | Nationa        | l Grid            | 415409.2           | E         |              |                  |               |                   |                  |               |                     |
|                         | HIGHV           | WAYS ENG             | LAND       | rtion/Sc  | molio   | a                | Coordin        | ates              | 142074.9           | Ν         |              |                  |               | Ground            | Level            | 71.47 M       | OD                  |
| Coro Pu                 | y<br>n/Donth    | Depth                | Туре       | Length    |         | 9<br>SPT N       | Sirala         | 1                 |                    |           |              |                  |               |                   |                  | Scale I       | Discont-            |
| (Core Di                | ia/Time)        | Cased &<br>(to Water | TCR/SCR%   | Max/Min   | %       | (FI)             | Descrip        | tion              |                    |           |              |                  |               |                   | Depth<br>(Level) | Legend        | inuity              |
|                         |                 |                      |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | _                |               |                     |
|                         |                 |                      |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | _                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | _                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | [                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
| 11.00-                  | -11.10          | <b>—</b>             | D          |           |         |                  | Betwe          | en 11.(           | 0-11.10m,          | with      | occas        | ional a          | ngular        | small             | _                |               |                     |
|                         |                 | -                    |            |           |         |                  | 11110          | .b (up (          |                    | 0110      |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | Ľ                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   |                  |               |                     |
| 11.50-                  | 12.00           |                      | в          |           |         |                  | Betwe          | en 11.5           | 50-12.00m,         | with      | occas        | ionala           | ngular        | small             | -                |               |                     |
| 11.50-                  | -11.95          | (6.30)               | Б          |           |         | 55               | and m          | edium 1           | lints (up          | to 8      | Omm in       | sıze).           |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | Ľ                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   |                  |               |                     |
|                         |                 | L                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | _                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
| 12.50-                  | -12.60          | Ľ                    | D          |           |         |                  | Betwe          | en 12.5           | 50-12.60m <i>.</i> | with      | occas        | ional a          | ngular        | and               |                  |               |                     |
|                         |                 |                      | _          |           |         |                  | subro<br>90mm  | unded a           | small and          | mediu     | m flint      | t fragm          | ents (u       | ip to             |                  |               |                     |
|                         |                 | _                    |            |           |         |                  | 501121         |                   | - / •              |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
| 12.00                   | 12 45           | -                    | _          |           |         | <b>505</b>       |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
| 13.00-                  | -13.45          | (6.60)               | ע          |           |         | 525              |                |                   |                    |           |              |                  |               |                   | _                |               |                     |
|                         |                 | Ľ                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   |                  |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | _                |               |                     |
|                         |                 | F                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | Ľ                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
| 14.00-                  | -14.10          | <b>—</b>             | D          |           |         |                  |                |                   |                    |           |              |                  |               |                   | _                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
| 14.50-                  | -14.95          | 14.50                | D          |           |         | S26              |                |                   |                    |           |              |                  |               |                   | _                |               |                     |
|                         |                 | (7.00)               |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | -                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | -                |               |                     |
|                         |                 | F                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | 1                |               |                     |
|                         |                 | <u> </u>             |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | 15.00            |               |                     |
| Drilling                | <br>n           |                      |            |           |         | Progra           | CHALK          | , recov           | vered as a         | very      | Groun        | angula<br>ndwate | r to<br>r     |                   | (56.47           | 7)            |                     |
| Depth                   | Hole<br>Dia     |                      | Technique  | 9         | Crew    | Depth<br>of Hole | Depth<br>Cased | Depth to<br>Water | Date               | Time      | Depth        | Depth<br>Cased   | Rose to       | in<br>Mins        | Depth<br>Sealed  | Rema          | rks on<br>dwater    |
|                         | 2.0             |                      |            |           |         |                  |                |                   |                    |           |              |                  |               |                   |                  | 2.10411       |                     |
|                         |                 |                      |            |           |         |                  |                |                   |                    |           |              |                  |               |                   |                  |               |                     |
| Pomo                    | ke 🗖            |                      |            |           |         |                  |                |                   |                    |           |              |                  |               |                   |                  | <u> </u>      |                     |
| Remar                   | AG              | 3                    |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | Log              | ged by        | ED/SI               |
| Symbols a<br>abbreviati | and<br>ions are |                      |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | Fig              | ure           | 3 of 7<br>2/05/2020 |
| explained<br>accompar   | on the<br>nying |                      |            |           |         |                  |                |                   |                    |           |              |                  |               |                   |                  |               | _9_                 |
| key sheet               | sions           |                      |            |           |         |                  |                |                   |                    |           |              |                  |               |                   | g                |               | MES                 |
| are in met              | tres.           | Logged in            | accordance | with BS59 | 30:2015 | Discontinuity    | / column gra   | phic is illustr   | ative only & does  | not repre | esent discon | tinuities as f   | ound in the c | ore, refer to     | Discontinuity    | Summary Sheet |                     |
| Drillina                                  |   | Prope     | rties/Sa     | molin | 2                              | Strata Sca  | e 1:25      |
|---|---|-----------|--------------|-------|--------------------------------|---|-------------|
| Core Run/Depth                            | Depth<br>Cased &                              |           | Length       | RQD   | SPT N                          | Description Destription   | gend Discon |
| 15.00-16.40                               |   | 100<br>4  |              | 0     | (NI)                           | subangular fine to coarse GRAVEL with a low cobble<br>content. Clasts are extremely weak to very weak,<br>low density and white. Matrix is white with<br>occasional angular to subangular small to medium<br>flint fragments (up to 60mm in size).  |             |
| 16.28-16.34                               | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>16.40 | C<br>85   | 0.20         | 23    | (AZCL)                         | Between 16.26-16.36m, discontinuity inclined 90<br>degrees, clean, undulating and rough with many<br>black specks.<br>Between 16.28-16.34m, solid core.<br>Between 16.30-16.36m, discontinuity inclined 40 (55.07)  | <u> </u>    |
| 16.40-16.85                               | -16.40<br>-<br>-                              | D         | 0.05         |       | S48<br>(NI)                    | <pre>degrees, clean, planar and smooth with many black specks. Very weak, locally extremely weak, medium density white with occasional black specks CHALK. Discontinuities where seen: Set 1 are: 0-20 degrees, very closely to medium spaced (40/225/600), clean or infilled (0/1/1) with</pre>  |             |
|   | -<br>-<br>-                                   |           |              |       | (10)                           | comminuted chalk or grey marl, stepped or planar<br>and rough with many black specks.<br>Set 2 are: 30-40 degrees, very closely to medium<br>spaced (30/235/580), clean or infilled (0/0/1) with<br>comminuted chalk, stepped or undulating and rough<br>with many black specks.<br>Set 3 are: 60-70 degrees, clean (0/0/0) stepped or  |             |
| 17.67-17.75                               | -   | с         |              |       | (NI)                           | IgRADE A2]<br>Between 16.40-16.52m, assumed zone of core loss.<br>Between 16.52-16.90, non intact, recovered as<br>angular to subangular fine to coarse gravel, with  |             |
| 17 00 10 40                               | -   | 07        | 0.07         | 7     | (0)<br>(NT)                    | occasional small and medium flint fragments (up to<br>80mm in size).<br>At 16.90m, with orangish brown relic sponge traces  |             |
| 17.90-19.40<br>17.90-18.35<br>17.90-18.24 |   | 25<br>D   | 0.02         | ,     | s100/                          | At 17.30m, with orangish brown relic sponge traces (up to 40mm in size).<br>Between 17.40-17.67m, non intact, recovered as  |             |
|   | -   |           |              |       | 190<br>(11)                    | angular to subangular fine to coarse gravel, with<br>occasional angular and subangular small and medium<br>flint fragments (up to 80mm in size).<br>At 17.84m, with orangish brown relic sponge traces  |             |
| 18.53-18.63                               | <br>-<br>-<br>-<br>-<br>-<br>-                | C         |              |       | (NI)                           | The set of |             |
| 19.40-21.00<br>19.40-19.78                | _19.40<br>-19.40<br>-                         | 84<br>58  | 0.31<br>0.06 | 44    | (AZCL)<br>C105/<br>230<br>(NI) | Between 19.40-19.65m, assumed zone of core loss.<br>Between 19.65-20.00m, non intact, recovered as<br>silty angular to subangular, fine to coarse gravel.<br>With occasional angular to subangular small flint<br>fragments (up to 30mm in size).   |             |
| D 'II'                                    | _   |           |              |       |                                |   |             |
| Drilling<br>Depth Hole                    |   | Technique | ۵            | Crew  | Progr<br>Depth                 | SS Groundwater Depth Depth to Date Time Depth Depth Rose to in Depth  | Remarks on  |
| Remarks Remarks                           |   |           |              |       |                                | Logged b<br>Checked   | y ED/SI     |

A 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

| Project A303 AMES   | BURY TO B          | ERWICK       | DOWN -  | PHASE                 | Enginee  | er  | AECOM   |   |  |  |  | Boreho<br>Project | No PO                | H72502                  |                                      |
|---|--------------------|--------------|---------|-----------------------|--|---|---|---|--|--|--|-------------------|----------------------|-------------------------|--------------------------------------|
| Client HIGHWAYS   | ENGLAND            |              |         |                       | Nationa  | l Grid  | 415409.2  | 2 E   |  |  |  | Ground            | level 7              | 1.47 m                  | OD                                   |
| Drilling  | Prope              | erties/Sa    | amplin  | q                     | Strata   | 1   | 11207102  |   |  |  |  | Orouna            | 20101 7.             | Scale 1                 | :25                                  |
| Core Run/Depth Cas  | oth Type           | Length       | RQD     | SPT N                 | Descrip  | tion  |   |   |  |  |  |                   | Depth                | Legend                  | Discont-                             |
| (Core Dia/Time) (to V   | ater) ICR/SCR      | % wax/win    | %       | (FI)                  |  |   |   |   |  |  |  |                   | (Level)              |                         | inuity                               |
|   |                    |              |         | (5)                   | Betwe  | en 20.5   | 53-20.63m   | n, disc   | continu  | ity inc  | lined 9                                      | 0                 | -<br>-<br>-<br>-     |                         |                                      |
|   |                    |              |         |                       | black<br>Betwe<br>betwe<br>with<br>Betwe           | specks<br>en 20.5<br>en 80-9<br>many bl                         | 5-20.63m<br>5-20.63m<br>0 degree<br>.ack spec               | n, disc<br>es, cle<br>eks.  | continu:<br>an, sto  | ity inc<br>epped a<br>ne of c                      | lined<br>nd roug                             | h                 | -<br>-<br>-          |                         |                                      |
| 21.00-22.50 21.   | 00 92<br>47        | 0.37<br>0.06 | 25      | (AZCL)                | Betwe<br>very<br>grave                             | en 21.1<br>silty a<br>l with                                    | .2-24.56m<br>ingular t<br>a low su                          | n, non<br>to suba<br>ubangul                                      | intact<br>Ingular<br>ar cobl   | , recov<br>fine t<br>ble con                       | ered as<br>o coars<br>tent.                  | e<br>Ie           | -                    |                         |                                      |
|   |                    |              |         | (NI)                  |  |   |   |   |  |  |  |                   | -<br>-<br>-          |                         | 1                                    |
| 21.92-22.00   | с                  |              |         | (5)                   | Betwe<br>betwe                                     | en 22.1<br>en 80 a  | .7-22.50m<br>and 90 de                                      | n, disc   | continu:   | ity inc  | lined<br>ating a                             | ind               | -<br>-<br>           |                         |                                      |
| -   | 50 80              | 0.40         | 37      |                       | smoot<br>Betwe                                     | h with<br>en 22.5   | many bla  | ack spe   | med zo   | ne of c  | ore los                                      | s.                | -                    |                         |                                      |
| 22.50-22.73 22.   | 45<br>50           | 0.15         | 57      | (AZCL)<br>C100/<br>80 | At 22  | .75m an   | nd 22.90n   | n, well   | devel  | oped fl  | int ban                                      | lds               | +                    |                         |                                      |
|   |                    |              |         | (NI)                  | and i<br>Betwe<br>silty<br>With<br>mediu           | nclined<br>en 22.8<br><sup>r</sup> angula<br>occasic<br>m flint | l fractur<br>30-23.20m<br>ur to suk<br>onal angu<br>fragmer | res. ##<br>n, non<br>pangula<br>llar to<br>hts (up                | intact<br>ir fine<br>subang<br>to 60   | , recov<br>to coa<br>gular s<br>mm in s            | rered as<br>rse gra<br>mall an<br>ize).      | uvel.<br>Nd       | +<br>-<br>           |                         |                                      |
| 23.30-23.45   | с                  |              |         | (3)                   |  |   |   |   |  |  |  |                   | -<br>-<br>-          |                         | 2                                    |
|   |                    |              |         |                       | Betwe<br>incli<br>undul                            | ned bet<br>ating a  | ween 80<br>and smoot  | and 90  | degree<br>many   | isconti<br>es, cle<br>black s                      | nuity<br>an,<br>pecks.                       | a                 | -                    |                         |                                      |
| 24.00-25.50 24.<br>24.00-24.24 24.                              | 00 100<br>60<br>00 | 0.24<br>0.04 | 16      | (NI)<br>C100/<br>90   | mediu<br>[23.9<br>Betwe<br>silty<br>With<br>fragm  | m flint<br>0-24.00<br>en 24.0<br>angula<br>occasio              | fragmer<br>m, large<br>0-24.20m<br>ar to sub<br>onal angu   | nts (up<br>full<br>full<br>n, non<br>pangula<br>llar to<br>m in s | to 10<br>core fi<br>intact<br>intact<br>suban<br>size).  | Omm in<br>lint.##<br>, recov<br>to coa<br>gular s  | size).<br>]<br>ered as<br>rse gra<br>mall fl | vel.<br>.int      | +                    |                         | . 1                                  |
|   |                    |              |         | (13)                  | Betwe<br>degre<br>stepp<br>Betwe<br>degre<br>speck | en 24.3<br>es, inf<br>ed and<br>en 24.6<br>es, cle<br>s.        | 6-24.49n<br>illed (1<br>rough wi<br>3-24.67n<br>ean, ster   | n, disc<br>mm thi<br>th man<br>n, disc<br>ped an                  | ck) with the second sec | ity inc<br>th grey<br>k speck<br>ity inc<br>h with | lined 9<br>marl,<br>s.<br>lined 5<br>many bl | 0<br>i0<br>.ack   | +<br><br>-           |                         |                                      |
|   |                    |              |         | (NI)                  | flint<br>Betwe<br>silty                            | fragme<br>en 24.8<br>angula                                     | n rare a<br>ents (up<br>2-25.00m<br>ar to sub               | to 30m<br>to non<br>angula  | m in s<br>intact<br>ir fine  | ize).<br>, recov<br>to coa                         | r small<br>ered as<br>rse gra                | vel.              |                      |                         | 3                                    |
| Drilling  | +                  | +            | +       | Progre                | ess  | Donth to  |   |   | Grour  | ndwate   | r  | :-                | Denth                | D                       |                                      |
| Depth Dia   | Techniqu           | е            | Crew    | of Hole               | Cased  | Water   | Date  | Time  | Struck   | Cased  | Rose to                                      | in<br>Mins        | Sealed               | Rema<br>Groun           | dwater                               |
|   |                    |              |         |                       |  |   |   |   |  |  |  |                   |                      |                         |                                      |
| Remarks<br>Symbols and<br>abbreviations are<br>explained on the |                    |              | -       |                       |  |   |   |   |  |  | -  |                   | Logo<br>Cheo<br>Figu | ged by<br>cked by<br>re | ED/SI<br>CPL<br>5 of 7<br>12/05/2020 |
| accompanying<br>key sheet.<br>All dimensions<br>are in metres.  | d in accordance    | e with BS59  | 30:2015 | Discontinuity         | y column gra                                       | phic is illustra  | ative only & do   | es not repre  | esent discon   | tinuities as f                                     | ound in the c                                | core, refer to    | Discontinuity        |                         |                                      |

| Project | A303 AMESBURY TO BERWICK DOWN - PHASE<br>7A COUNTESS | Engineer      | AECOM      | Borehole<br>Project No | BH72502<br>PC197708 |
|---------|--|---------------|------------|------------------------|---------------------|
|         |  | National Grid | 415409.2 E |                        |                     |

| Client HIGHWAYS EN   | IGLAND                   |                   |          |                                   | Coordin  | nates   | 142074.9   | N  |  |   |   | Ground                                    | Level 71                                | L.47 M                 | OD   |
|--|--------------------------|-------------------|----------|-----------------------------------|--|---|--|--|--|---|---|---|---|------------------------|--|
| Drilling   | Prope                    | rties/Sa          | mpling   | g                                 | Strata   | à   |  |  |  |   |   |   |   | Scale 1                | :25  |
| Core Run/Depth Cased<br>(Core Dia/Time) (to Wat  | Type<br>Type<br>TCR/SCR% | Length<br>Max/Min | RQD<br>% | SPT N<br>(FI)                     | Descrip  | otion   |  |  |  |   |   |   | Depth<br>(Level)                        | Legend                 | Discont-<br>inuity                           |
| 25.50-27.00 25.50<br>25.50-25.72 25.50<br>25.70-25.95  | ) 95<br>77<br>C          | 0.32<br>0.20      | 57       | (4)<br>(NI)<br>C100/<br>70<br>(3) | At 25<br>(up t<br>At 25<br>mediu<br>fragm<br>fract<br>At 25<br>(up t<br>Betwe<br>silty<br>angul<br>30mm<br>Betwe<br>brown<br>At 26<br>Betwe<br>angul<br>occas<br>fragm | 5.05, wi<br>co 25mm<br>5.26m, w<br>mm flint<br>nented a<br>cures ar<br>cures ar<br>cures ar<br>cures ar<br>cures ar<br>co 15mm<br>sen 25.5<br>fine t<br>fine t<br>f | ith orang<br>in size)<br>with angu<br>fragmen<br>around fl<br>ad some n<br>with oran<br>in size)<br>50-25.70m<br>co coarse<br>subangula<br>a).<br>78-25.90m<br>sponge t<br>with a gr<br>23-26.28m<br>subangular<br>tup to 40m  | ish br<br>ilar to<br>ints:<br>atural<br>gish b<br>i<br>grave<br>r smal<br>a, with<br>races<br>rey mar<br>a, non<br>r fine<br>co suba<br>m in s | own rei<br>subang<br>to 80<br>many du<br>inclin<br>rown re<br>intact<br>1 flind<br>occas:<br>(up to<br>1 seam<br>intact<br>to coo<br>ngular<br>ize). | lic spo<br>gular s<br>mm in s<br>rilling<br>hed fra<br>alic sp<br>, recov<br>n occas<br>t fragm<br>ional o<br>20mm i<br>(up to<br>, recov<br>arse gr<br>small | nge tra<br>mall an<br>ize). [<br>induce<br>ctures.<br>onge tr<br>ered as<br>ional<br>ent (up<br>rangish<br>n size)<br>1mm th<br>ered as<br>avel. W<br>flint | d<br>core<br>d<br>##]<br>aces<br>to<br>to |   |                        |  |
| 27.00-28.50 27.00  | ) 86<br>67               | 0.66              | 62       | (AZCL)                            | Betwe  | een 27.0  | )0-27.21¤  | ı, assu  | med zon  | ne of c   | ore los   | s.  | -<br>-<br>-<br>-                        |                        |  |
| 27.00-27.26 27.00  | c                        |                   |          | C100/<br>105<br>(NI)              | Betwe<br>angul   | en 27.2<br>Lar to s   | 21-27.40m<br>subangula   | , non<br>r fine  | intact<br>to coa   | , recov<br>arse gr  | ered as<br>avel.  | l   | -                                       |                        |  |
| -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-  |                          |                   |          | (2)                               | At 27<br>fossi<br>Betwe<br>relic<br>devel<br>##]<br>Betwe<br>relic   | 2.60m, w<br>11 (plat<br>een 28.0<br>sponge<br>loped or<br>een 28.4<br>sponge  | with a successful as a succesf | bhoriz<br>) (up<br>), with<br>(up to<br>on-sta   | ontal :<br>to 4mm<br>. much d<br>. 50mm :<br>ined no<br>. much d<br>. 50mm :   | sheet-l<br>thick)<br>orangis<br>in size<br>odular<br>orangis<br>in size   | ike biv<br>•<br>h brown<br>). [wel<br>sponge<br>h brown<br>). [wel  | alve<br>1<br>bed.                         |   |                        | 2  |
| 28.50-30.00 28.50<br>28.50-28.71 - 28.50   | ) 69<br>59               | 0.33<br>0.09      | 43       | (AZCL)<br>C100/<br>60<br>(NI)     | devel<br>##]<br>Betwe<br>Betwe<br>angul  | een 28.5<br>een 28.5<br>een 28.9  | range, ir<br>50-28.97m<br>97-29.10m<br>subangula   | a, assu<br>a, non-<br>ar fine  | ined no<br>med zon<br>intact   | odular<br>ne of c<br>, recov<br>arse gr   | sponge<br>ore los<br>ered as<br>avel.   | bed.                                      | -<br>-<br>-<br>-<br>-<br>-              |                        |  |
| 29.46-29.77  | с                        |                   |          | (4)                               | Betwe<br>degre<br>occas  | een 29.7<br>ees, cle<br>sional b  | 79-29.87m<br>san, undu<br>black spe  | , disc<br>lating<br>cks.   | ontinu:<br>and sr  | ity inc<br>nooth w  | lined 5<br>ith  | 0   | +<br>-<br>-<br>-<br>-                   |                        |  |
| Drilling   | <u> </u>                 |                   |          | Progre                            | ess  |   |  |  | Grour  | ndwate  | r   |   | <u> </u>                                |                        | <u>                                     </u> |
| Depth Dia  | Technique                | 9                 | Crew     | Depth<br>of Hole                  | Depth<br>Cased   | Depth to<br>Water   | Date   | Time   | Depth  | Depth<br>Cased  | Rose to   | in<br>Mine                                | Depth<br>Sealed                         | Rema                   | rks on<br>dwater                             |
|  |                          |                   |          |                                   | Jaseu  | vvalei  |  |  | GUUCK  | Jaseu   |   | 111115                                    | Jealeu                                  | Groun                  | awalti                                       |
|  |                          |                   |          |                                   |  |   |  |  |  |   |   |   |   |                        |  |
| Remarks<br>Symbols and<br>abbreviations are<br>explained on the<br>accompanying<br>key sheet.<br>All dimensions<br>are in metres. Logged i | n accordance             | with BS59         | 30:2015  | Discontinuity                     | ı column gra   | aphic is illustr  | ative only & do  | es not repre   | esent discon   | tinuities as f  | ound in the c   | ore, refer to                             | Logg<br>Chec<br>Figu<br>Discontinuity S | ed by<br>cked by<br>re | ED/SI<br>CPL<br>6 of 7<br>12/05/2020         |

| Project                  | A303<br>7A CC   | AMESBUR          | RY TO BE   | RWICK 1   | DOWN -  | PHASE          | Engine       | ər                | AECOM           |              |                |                 |               | Boreho<br>Proiect | le B            | H72502            |               |
|--------------------------|-----------------|------------------|------------|-----------|---------|----------------|--------------|-------------------|-----------------|--------------|----------------|-----------------|---------------|-------------------|-----------------|-------------------|---------------|
| Client                   |                 |                  |            |           |         |                | Nationa      | al Grid           | 415409.2        | E            |                |                 |               |                   |                 |                   |               |
| Drilling                 | HIGHW           | AYS ENG          | Prope      | rties/Sa  | ampling | n              | Coordin      | nates<br>a        | 142074.9        | Ν            |                |                 |               | Ground            | Level 71        | 1.47 m<br>Scale 1 | OD<br>•25     |
| Core Ru                  | n/Depth         | Depth<br>Cased & | Туре       | Length    | RQD     | SPT N          | Descrip      | otion             |                 |              |                |                 |               |                   | Denth           |                   | Discont-      |
| (Core Di                 | a/Time)         | (to Water)       | TCR/SCR%   | , Max/Min | %       | (FI)           | Desenp       |                   |                 |              |                |                 |               |                   | (Level)         | Ecgenia           | inuity        |
| 30.00-                   | 30.22           | 30.00            |            |           |         | C100/<br>70    |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | _                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | 30.22           |                   |               |
|                          |                 | Ę                |            |           |         |                |              |                   | En              | d of B       | orehole        | e               |               |                   | - (41.25)       |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | _                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | Ę                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | _                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | _                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | _                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | F                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | _                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | _                |            |           |         |                |              |                   |                 |              |                |                 |               |                   |                 |                   |               |
|                          |                 | F                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | F                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | _                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
|                          |                 | -                |            |           |         |                |              |                   |                 |              |                |                 |               |                   | -               |                   |               |
| <b></b>                  |                 | <u> </u>         |            |           |         |                |              |                   |                 |              |                |                 |               |                   |                 |                   |               |
| Depth                    | )<br>Hole       | -                | Technique  | 2         | Crew    | Progr<br>Depth | ess<br>Depth | Depth to          | Date            | Time         | Grour<br>Depth | ndwate<br>Depth | r<br>Rose to  | in                | Depth           | Rema              | rks on        |
| Deptin                   | Dia             |                  | - connique | •         |         | of Hole        | Cased        | Water             | Duis            |              | Struck         | Cased           | 1.000 10      | Mins              | Sealed          | Groun             | dwater        |
|                          |                 |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   |                 |                   |               |
|                          |                 |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   |                 |                   |               |
| Remar                    | ks AGS          |                  |            |           | ļ       | 1              | ļ            | ļ                 |                 | <u> </u>     | L              | ļ               |               |                   | Logo            | jed by            | ED/SI         |
| Symbols a                | and             |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   | Cheo<br>Figu    | cked by<br>re     | CPL<br>7 of 7 |
| explained                | on the<br>lying |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   |                 |                   | 0             |
| key sheet.<br>All dimens | ions            |                  |            |           |         |                |              |                   |                 |              |                |                 |               |                   | e               | œœi               | MES           |
| are in met               | res.            | Logged in a      | accordance | with BS59 | 30:2015 | Discontinuit   | y column gra | aphic is illustra | ative only & do | es not repre | sent discont   | tinuities as f  | ound in the c | ore, refer to     | Discontinuity S | Summary Sheet     |               |

| Project  | A303  | AMESBUR  | RY TO BE  | RWICK  | OOWN -   | PHASE                                  | Enginee   | er  | AECOM   |  |  |   |   | Boreho<br>Project                       |   | H72504  |                                      |
|--|---|--|---|--|--|--|---|---|---|--|--|---|---|---|---|---|--------------------------------------|
|  | /   | JONIESS  |   |  |  |  | Nationa   | l Grid  | 415426.4  | Е  |  |   |   | riojeot                                 | NO F  | .197700   |                                      |
| Client   | HIGH  | VAYS ENG   | LAND  |  |  |  | Coordin   | ates  | 142007.1  | Ñ  |  |   |   | Ground                                  | Level 70  | 0.76 m  | OD                                   |
| Drilling   |   | Depth  | Prope   | rties/Sa   | mpling   |  | Strata  | 1   |   |  |  |   |   |   |   | Scale 1   | :25                                  |
| Core Run<br>(Core Dia  | i/Depth<br>a/Time)                          | Cased &<br>(to Water)  | TCR/SCR%  | Max/Min  | RQD<br>%   | (FI)                                   | Descrip   | tion  |   |  |  |   |   |   | Depth<br>(Level)  | Legend  | Discont-<br>inuity                   |
| 0.10-<br>0.10-   | 0.20<br>0.20                                |  | B<br>D  |  |  |  | PROBA<br>sandy<br>rootl<br>coars                                    | BLE MAI<br>slight<br>ets.G<br>e chall               | DE GROUND<br>ly grave<br>ravel is<br>and fli                                  | : Soft<br>lly si<br>angula<br>nt.                  | to fin<br>lt with<br>r to su                       | rm brow<br>1 occas<br>1bround                     | n sligh<br>ional<br>ed fine                       | tly<br>to                               | G.L.<br>(70.76)<br>0.20<br>(70.56)                      |   |                                      |
| 0.50-<br>0.50-   | 0.60<br>0.60                                | -<br>-<br>-  | B<br>D  |  |  |  | PROBA<br>silty<br>suban<br>fine                                     | BLE MAI<br>r sand v<br>gular f<br>to coar           | DE GROUND<br>with a lo<br>ilint. Gr<br>rse chalk                              | : Crea<br>w cobb<br>avel i<br>and f                | mish wh<br>ble cont<br>s angu<br>lint.             | nite ve<br>cent of<br>lar to                      | ry grav<br>angula<br>subroun                      | relly<br>r to<br>ded                    | -<br>-<br>-   |   |                                      |
| 1.00-<br>1.00-   | 1.10<br>1.10                                |  | B<br>D  |  |  |  |   |   |   |  |  |   |   |   | -<br>-<br>-   |   |                                      |
| 1.50-<br>1.50-   | 1.60<br>1.60                                | -<br>-<br>-<br>-   | B<br>D  |  |  |  | PROBA<br>a low<br>flint<br>sligh<br>subro                           | BLE MAI<br>cobble<br>, gradi<br>tly gra<br>ounded f | DE GROUND<br>content<br>ing in pa<br>avelly si<br>fine to c                   | : Whit<br>of an<br>rts to<br>lt. Gr<br>oarse       | e sandy<br>gular t<br>a slig<br>avel is<br>chalk a | y silty<br>to suba<br>ghtly s<br>angul<br>and fli | gravel<br>ngular<br>andy<br>ar to<br>nt.          | with                                    | - 1.30<br>(69.46)<br>-                                  |   |                                      |
| 1.90-<br>1.90-<br>2.05-<br>2.05-   | 2.00<br>2.00<br>2.50<br>2.50                | - 2.00<br>(DRY)  | B<br>D<br>B<br>D  |  |  | S24                                    | PROBA<br>sandy<br>6mm i<br>suban                                    | BLE MAI<br>silty<br>n size)<br>gular t              | DE GROUND<br>gravel w<br>) of soft<br>to subrou                               | : Medi<br>ith oc<br>brown<br>nded f                | um dens<br>casiona<br>clayey<br>ine to             | se crea<br>al pock<br>y sand.<br>coarse           | m sligh<br>ets (up<br>Gravel<br>flint             | tly<br>to<br>is<br>and                  | 2.00<br>(68.76)   |   |                                      |
| 2.26   |   | -<br>-   | W   |  |  |  | chalk   | •   |   |  |  |   |   |   | -<br>-<br>-   |   |                                      |
| 2.60   |   | -  | D   |  |  |  | Brown<br>suban<br>quart   | very s<br>gular t<br>zite.                          | sandy cla<br>co subrou  | yey GR<br>nded f                                   | AVEL. (<br>ine to                                  | Fravel<br>coarse                                  | is<br>flint                                       | and                                     | 2.60<br>(68.16)   |   |                                      |
| 3.00<br>3.10-<br>3.10-   | 3.60<br>3.55                                | 3.00<br>(DRY)  | D<br>B  |  |  | С7                                     | Loose<br>GRAVE<br>flint<br>subro<br>limes                           | e light<br>L with<br>and lipunded f<br>stone.       | greenish<br>a low co<br>mestone.<br>Eine to c                                 | grey<br>bble c<br>Grave<br>oarse                   | sandy s<br>content<br>l is su<br>quartz:           | slightl<br>of qua<br>ubangul<br>ite, fl           | y claye<br>rtzite,<br>ar to<br>int and            | У                                       | 2.90<br>(67.86)<br>-<br>-                               | $\mathbf{\nabla}_{\mathbf{a}_{1},\ldots,\mathbf{a}_{n}}^{\mathbf{b}_{1},\ldots,\mathbf{b}_{n}}$ |                                      |
| 4.00<br>4.10-<br>4.10-   | 4.55<br>4.55                                | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-   | D<br>B  |  |  | C12                                    | Mediu<br>with<br>limes<br>to co                                     | m dense<br>a low o<br>toone. C<br>parse qu          | a light b<br>sobble co<br>Fravel is<br>martzite,                              | rownis<br>ntent<br>suban<br>flint                  | h grey<br>of quar<br>gular t<br>and l:             | very s<br>tzite,<br>o subr<br>meston              | andy GR<br>flint<br>ounded<br>e.                  | AVEL<br>and<br>fine                     | - 4.00<br>- (66.76)<br>                                 |   |                                      |
| 5.00   |   | -<br>-<br>-  | D   |  |  | Progr                                  |   |   |   |  | Groun  | dwate   | r   |   | -   |   |                                      |
| Depth  | Hole  |  | Techniaue   | 9  | Crew   | Depth                                  | Depth   | Depth to  | Date  | Time   | Depth  | Depth   | Rose to   | in                                      | Depth   | Rema  | irks on                              |
| 1.40<br>2.00<br>7.10<br>13.50<br>15.00<br>30.38  | DIA<br>0.50<br>0.20<br>0.15<br>0.12<br>0.12 | Inspect<br>Inspect<br>Cable F<br>Cable F<br>Rotary<br>Geobor   | cion Pit<br>cion Pit<br>Percussi<br>Percussi<br>Open Ho<br>S                                    | on<br>on<br>le   | Arch<br>JR<br>CR/BB<br>CR/BB<br>AW/PB<br>AW/PB             | G.L.<br>2.00<br>G.L.<br>11.50<br>13.50 | NIL<br>11.40<br>13.00   | vvater<br>1.90<br>2.20<br>4.20                      | 13/11/19<br>13/11/19<br>18/11/19<br>18/11/19<br>19/11/19<br>19/11/19          | 08:00<br>18:00<br>08:00<br>18:00<br>08:00<br>18:00 | 1.80<br>3.20                                       | Vased<br>NIL<br>3.10                              | 1.80<br>2.26                                      | 171INS<br>20<br>20                      | Sealed  | Groun<br>Slow inf<br>Moderate<br>seepage.   | iuwater                              |
| Remark<br>Symbols at<br>abbreviatio<br>explained of<br>accompany<br>key sheet.<br>All dimensi<br>are in metr | KS REAL                                     | Inspect<br>Geotech<br>drillin<br>** Dril<br>Chalk 1<br>Chalk 1<br>Chalk",<br>determi<br>test re<br>Logged in | cion pit<br>nics. N<br>g.<br>llers de<br>logged i<br>Append<br>ined fro<br>sults.<br>accordance | hand of<br>serve<br>script:<br>n accor<br>ix B (1<br>m hand<br>with BS59 | ices we<br>ices we<br>cdance<br>N. Mo<br>pressu<br>30:2015 | ere fou<br>with C<br>prtimor<br>ure on | 1.40m F<br>nd. Pit<br>IRIA Re<br>e, 2014<br>standar<br>/ column gra | by arche<br>backfi<br>port C5<br>, Whitt<br>d size  | eologist<br>illed and<br>574, 2002<br>les Publ<br>samples<br>ative only & dog | and ex<br>re-ex<br>. Flin<br>ishing<br>or, wh      | tended<br>cavated<br>ts desc<br>). Inta<br>ere und | to 2.0<br>I prior<br>cribed<br>act dry<br>lertake | Om dept<br>to sta<br>as in "<br>densit<br>n, from | h by<br>rt of<br>Logging<br>Y<br>labora | Logg<br>Chec<br>Figu<br>the<br>atory<br>Discontinuity S | ged by<br>cked by<br>re   | JD/SI<br>CPL<br>1 of 7<br>12/05/2020 |

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 Shee

| Project                                    | A303                             | AMESBUR                                  | NY TO BE                     | RWICK I                     | DOWN -                 | PHASE  | Enginee  | ər   | AECOM  |   |                                      |                               |                                | Boreho<br>Project     | le E  | H72504                   |                                      |
|--|----------------------------------|--|------------------------------|-----------------------------|------------------------|--|--|--|--|---|--------------------------------------|-------------------------------|--------------------------------|-----------------------|---|--------------------------|--------------------------------------|
| <b>O</b>                                   | /A CC                            | JUNIESS                                  |                              |                             |                        |  | Nationa  | al Grid  | 415426.4   | 4 E   |                                      |                               |                                | Tiojeet               | NO P  | CI97708                  |                                      |
| Client                                     | HIGHV                            | VAYS ENG                                 | LAND                         |                             |                        |  | Coordin  | ates   | 142007.  | i N   |                                      |                               |                                | Ground                | Level 7   | 0.76 m                   | OD                                   |
| Drilling                                   |                                  | Depth                                    | Type                         | rties/Sa                    | mplin                  | g<br>ODT N   | Strata   | à  |  |   |                                      |                               |                                |                       |   | Scale 1                  | :25                                  |
| Core Run<br>(Core Dia                      | /Depth<br>/Time)                 | Cased &<br>(to Water                     | TCR/SCR%                     | Max/Min                     | RQD<br>%               | (FI)   | Descrip  | otion  |  |   |                                      |                               |                                |                       | Depth<br>(Level)  | Legend                   | Discont-<br>inuity                   |
| 5.40-<br>5.40<br>5.40-                     | 5.85<br>5.85                     | -<br>-<br>-<br>(5.00<br>-<br>-<br>-<br>- | B<br>D                       |                             |                        | 56   | CHALK<br>SILT.<br>with<br>Betwe<br>(up t           | C recove<br>Clasts<br>occasic<br>sen 5.44<br>co 30mm | ered as o<br>s are ver<br>onal blac<br>D-5.85m,<br>in size           | cream,<br>ry weak<br>ck spec<br>with r<br>).                              | slight:<br>, medin<br>ks.<br>are ang | ly grav<br>um dens<br>gular s | relly sa<br>ity, wh<br>mall fl | indy<br>lite<br>lints | <br>-<br>- 5.40<br>- (65.36<br>-<br>-<br>-<br>-   |                          |                                      |
| 6.30                                       |                                  | -  | D                            |                             |                        |  |  |  |  |   |                                      |                               |                                |                       | -   |                          |                                      |
| 7.00<br>7.10-<br>7.10-                     | 8.00<br>7.55                     | 6.00<br>(5.60)<br>                       | D<br>B<br>D                  |                             |                        | 56   | Betwe<br>and m<br>CHALK                            | en 7.10<br>ledium d                                  | 0-8.00m,<br>Elints (1  | with c<br>up to 6   | ccasion<br>Omm in<br>y sandy         | nal ang<br>size).<br>y silty  | rular sm                       | nall<br>Ty            | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                          |                                      |
| 8.20                                       |                                  | -<br>-<br>-<br>-<br>-                    | D                            |                             |                        |  | At 8.  | 20m, wi  | ith rare   | arts. C<br>white w<br>nite.   | r small                              | are ver<br>casiona            | y weak,<br>l black<br>s (up t  | :0                    | -<br>-<br>-<br>-<br>-<br>-  |                          |                                      |
| 8.55-<br>8.55-                             | 9.20<br>9.00                     | - 8.50<br>(2.50)<br>-<br>-               | B<br>D                       |                             |                        | S11  | Betwe<br>mediu                                     | een 8.55<br>m flint                                  | 5-9.20m,<br>t fragmen  | with r<br>nts (up   | are ang<br>to 60                     | gular s<br>mm in s            | mall to                        |                       | -<br>-<br>-<br>-<br>-   |                          |                                      |
| 9.20                                       |                                  | -<br>-<br>-<br>-                         | D                            |                             |                        |  |  |  |  |   |                                      |                               |                                |                       | -<br>-<br>-<br>-  |                          |                                      |
| 9.80-1<br>9.80-1<br>9.80                   | L0.50<br>L0.25                   | 9.75<br>(2.60)                           | в<br>D<br>D                  |                             |                        | S4   |  |  |  |   |                                      |                               |                                |                       | -<br>-  |                          |                                      |
| Drilling                                   |                                  |  |                              |                             |                        | Progre   | ess  |  |  |   | Grour                                | ndwate                        | r                              |                       |   |                          |                                      |
| Depth                                      | Hole                             |  | Technique                    | e                           | Crew                   | Depth<br>of Hole                                   | Depth  | Depth to<br>Water                                    | Date   | Time  | Depth                                | Depth                         | Rose to                        | in<br>Mine            | Depth<br>Sealed   | Rema                     | rks on<br>dwater                     |
|  | Jia                              |  |                              |                             |                        | 13.50<br>18.20<br>18.20<br>25.70<br>25.70<br>30.38 | 13.00<br>18.20<br>18.20<br>25.70<br>25.70<br>30.20 | 2.30<br>2.30<br>2.00<br>2.00<br>2.00<br>2.00         | 20/11/19<br>20/11/19<br>21/11/19<br>21/11/19<br>25/11/19<br>25/11/19 | 9 08:00<br>9 18:00<br>9 08:00<br>9 18:00<br>9 18:00<br>9 08:00<br>9 18:00 | OLIUCK                               | Cased                         |                                |                       | Geardu  | Groun                    | G W ULGI                             |
| Symbols ar<br>abbreviation<br>explained of | KS AGS<br>nd<br>ns are<br>on the | ## Addi<br>Backfil<br>Flush:             | tional<br>1 detai<br>15.00-3 | detail<br>ls from<br>0.20m, | added<br>base<br>Air/M | by Cli<br>of hol<br>ist, 0%                        | ent's c<br>e: bent<br>return                       | consulta<br>conite u                                 | ant, Rory<br>up to gro   | y Morti<br>ound le  | more.<br>vel.                        |                               |                                |                       | Log<br>Che<br>Figu  | ged by<br>cked by<br>ire | JD/SI<br>CPL<br>2 of 7<br>12/05/2020 |
| key sheet.<br>All dimensionare in metre    | ons                              | Logged in                                | accordance                   | with BS59                   | 30:2015                | Discontinuity                                      | / column gra                                       | phic is illustr                                      | rative only & do   | oes not repre   | esent discon                         | tinuities as f                | ound in the o                  | core, refer to        | Discontinuity   | Summary Sheet            |                                      |

| Project                   | A303               | AMESBUR              | NY TO BE   | RWICK I           | DOWN -   | PHASE         | Enginee        | r                 | AECOM            |              |               |                |                | Boreho<br>Project | le E                       | SH72504           |                    |
|---------------------------|--------------------|----------------------|------------|-------------------|----------|---------------|----------------|-------------------|------------------|--------------|---------------|----------------|----------------|-------------------|----------------------------|-------------------|--------------------|
|                           | /A CC              | JUNIESS              |            |                   |          |               | National       | l Grid            | 415426 4         | F            |               |                |                | Tioject           |                            | 0197708           |                    |
| Client                    | HIGHW              | VAYS ENG             | LAND       |                   |          |               | Coordin        | ates              | 142007.1         | Ň            |               |                |                | Ground            | Level 7                    | 0.76 M            | OD                 |
| Drilling                  | 1                  | Donth                | Prope      | rties/Sa          | mpling   | g             | Strata         |                   |                  |              |               |                |                |                   | 1                          | Scale 1           | :25                |
| Core Rur<br>(Core Dia     | n/Depth<br>a/Time) | Cased &<br>(to Water | TCR/SCR%   | Length<br>Max/Min | RQD<br>% | SPT N<br>(FI) | Descript       | tion              |                  |              |               |                |                |                   | Depth<br>(Level)           | Legend            | Discont-<br>inuity |
|                           |                    | _                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | _                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | Ľ                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | Ī                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | F                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | ł                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    |                      |            |                   |          |               |                |                   |                  |              |               |                |                |                   | [                          |                   |                    |
| 11.00                     |                    | _                    | D          |                   |          |               |                |                   |                  |              |               |                |                |                   | <u> </u>                   |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | F                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    |                      |            |                   |          |               |                |                   |                  |              |               |                |                |                   | Ī                          |                   |                    |
|                           |                    | _                    |            |                   |          |               | Below          | 11.55m            | n, clasts        | with         | occasio       | onal li        | .ght ora       | ngish             | -                          |                   |                    |
| 11.55-<br>11.55-          | 12.00<br>12.00     | 12.50                | B<br>D     |                   |          | S11           | brown<br>Betwe | staini<br>en 11.5 | .ng.<br>5-12.00m | n, with      | occas         | ional a        | ngular         | small             | F                          |                   |                    |
|                           |                    | (2.30)               |            |                   |          |               | flint          | fragme            | ents (up         | to 50m       | m in s:       | ize).          |                |                   | ł                          |                   |                    |
|                           |                    |                      |            |                   |          |               |                |                   |                  |              |               |                |                |                   | Ī                          |                   |                    |
|                           |                    | _                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | L                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | F                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | _                    |            |                   |          |               | At 12          | .50m, w           | vith rare        | angul        | ar smal       | ll flin        | nt fragm       | ents              | Ĺ                          |                   |                    |
| 12.55                     |                    | -                    | D          |                   |          |               | (up to         | o 30mm            | in size)         | •            |               |                |                |                   | -                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | F                          |                   |                    |
|                           |                    | _                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | Ĺ                          |                   |                    |
| 13.05-                    | 13.50              | 13.00<br>(4.20)      |            |                   |          | S16           |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | 13.50                      |                   |                    |
|                           |                    | -                    |            |                   |          |               | CHALK          | * *               |                  |              |               |                |                |                   | (57.26                     |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | F                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | ł                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   |                            |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | F                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | -                          |                   |                    |
|                           |                    | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | F                          |                   |                    |
|                           |                    | F                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | t                          |                   |                    |
|                           |                    | [                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | [                          |                   |                    |
|                           |                    | F                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | ŀ                          |                   |                    |
|                           |                    | F                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | ł                          |                   |                    |
|                           |                    | F                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | ł                          |                   |                    |
| 15.00-<br>Drilling        | 15.45              | 15.00                | D          |                   |          | S47           | Betwe          | en 15.0           | 0-15.60n         | n, no r      | ecovery       | y.<br>ndw.ato  | ٥r             |                   | <u> </u>                   |                   |                    |
| Depth                     | Hole               |                      | Technique  | 9                 | Crew     | Depth         | Depth I        | Depth to          | Date             | Time         | Depth         | Depth          | Rose to        | in<br>Mine        | Depth                      | Rema              | rks on             |
|                           | Jid                |                      |            |                   |          |               | Caseu          | vvalel            |                  |              | GUIUCK        | Jased          |                | 111115            | Jealed                     | Groun             |                    |
|                           |                    |                      |            |                   |          |               |                |                   |                  |              |               |                |                |                   |                            |                   |                    |
| Remar                     | ks 📕               |                      |            |                   |          | <u> </u>      |                |                   |                  |              |               |                | ļ              |                   | Log                        | ged by            | JD/SI              |
| Symbols a                 | nd                 | -                    |            |                   |          |               |                |                   |                  |              |               |                |                |                   | Che                        | ecked by<br>ure   | CPL<br>3 of 7      |
| abbreviation explained    | ons are<br>on the  |                      |            |                   |          |               |                |                   |                  |              |               |                |                |                   |                            |                   | 2/05/2020          |
| accompany<br>key sheet.   | ying               |                      |            |                   |          |               |                |                   |                  |              |               |                |                |                   | ្រា                        | <u>व्य</u> ान्दित | त्रीहर             |
| All dimens<br>are in metr | ions<br>res.       | Logged in            | accordance | with BS59         | 30:2015  | Discontinuit  | y column grap  | ohic is illustra  | ative only & do  | es not repre | esent discont | tinuities as f | found in the c | ore, refer to     | <b>کے</b><br>Discontinuity | Summary Sheet     |                    |

| Project  | A303<br>7A CC                 | AMESBUF                       | RY TO BE       | RWICK 1      | DOWN -   | PHASE           | Enginee  | er  | AECOM  |  |   |   |   | Boreho<br>Project                            | le B<br>No po  | H72504                  | ļ                                    |
|--|-------------------------------|-------------------------------|----------------|--------------|----------|-----------------|--|---|--|--|---|---|---|--|--|-------------------------|--------------------------------------|
| Client   | UTCUM                         | 17 Y G FNG                    |                |              |          |                 | Nationa  | l Grid  | 415426.4   | E E  |   |   |   | Ground                                       |  | 0.76 m                  | OD                                   |
| Drilling   | g                             | AIS ENG                       | Prope          | rties/Sa     | amplin   | g               | Strata   |   | 142007.1   |  |   |   |   | Ground                                       | Level /(   | Scale 1                 | :25                                  |
| Core Ru  | in/Depth                      | Depth<br>Cased &              | Туре           | Length       | RQD      | SPT N           | Descrip  | tion  |  |  |   |   |   |  | Depth  | Legend                  | Discont-                             |
| (Core D  | ia/ Time)                     | (to water                     | TCN SCR/       |              | 70       | (11)            |  |   |  |  |   |   |   |  | (Level)  | 1 1                     |                                      |
| 15.00-   | -15.60                        | <br>                          | 0              |              |          | (NR)            |  |   |  |  |   |   |   |  | -<br>-<br>-<br>-   |                         |                                      |
| 15.60-   | -16.70                        |                               | 27             |              |          | (AZCL)          | CHALK<br>suban<br>suban<br>low t<br>With<br>coars<br>Betwe                             | , recov<br>gular f<br>gular c<br>o mediu<br>occasic<br>e flint<br>en 15.6             | vered as<br>fine to c<br>cobble c<br>m densit<br>onal angu<br>t fragmer<br>50-16.40m                 | very s<br>coarse<br>ontent.<br>y and<br>ular an<br>its.<br>a, assu                 | GRAVEL<br>GRAVEL<br>Clast:<br>white.<br>d subar<br>med zor                                | ngular<br>with a<br>s are v<br>Matrix<br>ngular<br>ne of c            | to<br>low<br>ery weat<br>is whi<br>fine to<br>ore los         | ak,<br>ite.<br>ss.                           | - 15.60<br>(55.16)<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                         |                                      |
| 16.70-<br>16.70-                                 | -18.20<br>-17.15              | -<br>16.70<br>16.70<br>-<br>- | 100<br>19<br>D | 0.11<br>0.03 | 7        | 548<br>(NI)     | At 16<br>fragm   | .70m, v<br>wents (u   | with occa<br>up to 30m   | asional<br>m in s  | . small<br>ize).  | subang  | ular fl   | Lint   | -<br>-<br>-<br>-<br>-                                      |                         |                                      |
|  |                               | -                             |                |              |          |                 | At 17<br>size)   | .45m, v   | with a su  | ıbangul  | ar med  | ium fli   | nt (100   | )mm in                                       | 17.55<br>(53.21)   |                         | 2222                                 |
| 17.83-   | -17.92                        | -<br>-<br>-<br>               | с              |              |          | (11)            | Very<br>Disco<br>Set 1<br>clean<br>stepp<br>and o<br>Set 2<br>space                    | weak, 1<br>ontinuit<br>are 0-<br>or inf<br>ped or p<br>occasior<br>are 30<br>ed, clea | low to me<br>ties when<br>-20 degre<br>filled ((<br>planar an<br>hal orang<br>0-40 degr<br>an or inf | edium d<br>re seen<br>bes, cl<br>)/0/1)<br>nd roug<br>gish br<br>rees, c<br>Eilled | lensity<br>are:<br>osely<br>with co<br>h with<br>cown su:<br>cown su:<br>losely<br>(0/0/1 | , white<br>spaced<br>omminut<br>many h<br>rface s<br>and ve<br>) with | CHALK.<br>(70/70/<br>ed chal<br>lack sp<br>taining<br>ry clos | (140),<br>lk,<br>pecks<br>J.<br>sely<br>ited | -<br>-<br>-<br>-   |                         |                                      |
| 18.20-   | -19.70<br>-18.65              | 18.20<br>18.20<br>-<br>-      | 40<br>6<br>D   |              | 0        | S44<br>(AZCL)   | Chaik<br>orang<br>[GRAD<br>At 17<br>trace<br>Betwe<br>degre<br>black<br>stain<br>CHALK | c, stepp<br>jish bro<br>DE A3]<br>2.85m, v<br>es (up t<br>es, cle<br>cspecks<br>ing.  | vered as   | ace sta<br>e orang<br>n size)<br>n, disc<br>llating<br>casiona<br>silty            | ining.<br>ish bro<br>continu:<br>and su<br>l orang  | own rel<br>ity incomooth w<br>gish br                                 | ic spor<br>lined 9<br>with ran<br>own sur                     | nge<br>90<br>ce<br>cface                     | (52.56)  |                         |                                      |
|  |                               | -<br>-<br>-<br>-              |                |              |          |                 | fine<br>conte<br>densi<br>light<br>small<br>size)<br>Betwe                             | to coar<br>ent. Cla<br>ty, whi<br>brown.<br>to med<br>en 18.2                         | rse GRAVF<br>asts are<br>ite with<br>. With oc<br>dium flir<br>20-19.10m                             | EL with<br>very w<br>many b<br>ccasion<br>nt frag<br>n, assu                       | a low<br>yeak, lo<br>black sp<br>al ang<br>ments<br>med zon                               | subang<br>ow to m<br>pecks.<br>ular to<br>(up to<br>ne of c           | ular co<br>edium<br>Matrix<br>subang<br>70mm in<br>ore los    | bble<br>is<br>gular<br>h<br>ss.              | -<br>  |                         |                                      |
|  |                               | -                             |                |              |          | (NI)            | Below<br>spong<br>Betwe  | 7 19.40m<br>e trace<br>en 19.6  | n, clasts<br>es (up to<br>51-19.70m  | s with<br>20mm<br>n, inta  | many o:<br>in size<br>act sect  | rangish<br>e).<br>tion of   | brown   | relic  | -  |                         |                                      |
| 19.70-<br>19.70-                                 | -21.20<br>-20.15              | 19.70<br>19.70<br>            | 83<br>55       | 0.13<br>0.03 | 24       | (AZCL)<br>S96   | Very<br>black<br>Set 1<br>(60/2<br>commi<br>undul                                      | weak, m<br>specks<br>are 0-<br>10/480)<br>nuted c<br>ating a                          | medium de<br>s CHALK.<br>-20 degre<br>), clean<br>chalk or<br>and rough                              | ensity,<br>Discon<br>ees, cl<br>or inf<br>marl,<br>n or sm                         | white<br>tinuit<br>osely<br>illed<br>stepped<br>booth with                                | with c<br>ies whe<br>to medi<br>(0/0/1)<br>d occas<br>ith mar         | ccasion<br>re seen<br>um spac<br>with<br>ionally<br>y black   | nal<br>n are:<br>ced<br>xs                   | 19.70<br>(51.06)<br>-                                      |                         |                                      |
| Drilling   | g<br>Hole                     |                               | Toohaia        | ·            | Crow     | Progre<br>Depth | ess<br>Depth   | Depth to  | Data   | Time   | Grour<br>Depth  | ndwate<br>Depth   | r<br>Rose to  | in   | Depth  | Rema                    | arks on                              |
| Depth  | Dia                           |                               | ıecnniqu       | e            | CIEW     | of Hole         | Cased  | Water   | Dale   | TIME   | Struck  | Cased   | RUSE [0   | Mins   | Sealed   | Groun                   | dwater                               |
| Remain Symbols abbreviation                      | and<br>ions are               | 9                             |                |              | <u> </u> | 1               |  |   | !  | ļ  | 1   | <u> </u>  | <u> </u>  | <u> </u>                                     | Logg<br>Chec<br>Figur                                      | ged by<br>cked by<br>re | JD/SI<br>CPL<br>4 of 7<br>12/05/2020 |
| accompar<br>key sheet<br>All dimens<br>are in me | nying<br>t.<br>sions<br>tres. | Logged in                     | accordance     | with BS59    | 30:2015  | Discontinuity   | y column gra   | phic is illustr   | rative only & do   | oes not repre  | esent discon  | tinuities as f  | ound in the o   | core, refer to                               | Discontinuity S  |                         |                                      |

| Project | A303 AMESBURY TO BERWICK DOW<br>7A COUNTESS | 1 - PHASE | Engineer | AECOM | <b>Borehole</b><br>Project No | BH72504<br>PC197708 |
|---------|---|-----------|----------|-------|-------------------------------|---------------------|
|         |   |           |          |       |                               |                     |

| Client                   | HIGHW               | AYS ENG                        | LAND             |                   |          |                | Nationa<br>Coordir | al Grid<br>nates     | 415426.4<br>142007.1   | E<br>N             |                   |                    |                    | Ground        | Level 7                | 0.76 M          | OD                 |
|--------------------------|---------------------|--------------------------------|------------------|-------------------|----------|----------------|--------------------|----------------------|------------------------|--------------------|-------------------|--------------------|--------------------|---------------|------------------------|-----------------|--------------------|
| Drilling                 | g                   |                                | Prope            | rties/Sa          | mpling   | 9              | Strata             | a                    |                        |                    |                   |                    |                    |               |                        | Scale 1         | :25                |
| Core Ru<br>(Core Di      | n/Depth<br>ia/Time) | Depth<br>Cased &<br>(to Water) | Type<br>TCR/SCR% | Length<br>Max/Min | RQD<br>% | SPT N<br>(FI)  | Descrip            | otion                |                        |                    |                   |                    |                    |               | Depth<br>(Level)       | Legend          | Discont-<br>inuity |
|                          |                     |                                |                  |                   |          | (NI)           | speck              | s and c              | occasiona              | al oran            | gish b            | rown su            | rface              |               |                        |                 |                    |
|                          |                     | -                              |                  |                   |          |                | Betwe              | en 20.3              | 38-25.321              | n, Set             | 2 are             | 30-40 d            | egrees,            |               | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          | (7)            | close<br>(0/0/     | ely and<br>(1) with  | very clo<br>n comminu  | sely s<br>ted ch   | paced,<br>alk or  | clean<br>rare g    | or infi<br>rey mar | 11ed<br>1,    | -                      |                 | 1                  |
|                          |                     | -                              |                  |                   |          |                | stepp<br>speck     | ed or u<br>s and c   | undulatir<br>occasiona | ng and<br>al oran  | rough v<br>gish b | with ma<br>rown su | ny blac<br>rface   | k             | -                      |                 | 2                  |
|                          |                     | _                              |                  |                   |          | (NI)           | stair<br>Betwe     | ning.<br>Men 26.3    | 38-28.48r              | n, Set             | 3 are             | 50-60 d            | egrees,            |               | _                      |                 |                    |
|                          |                     |                                |                  |                   |          |                | close<br>undul     | aly and<br>ating a   | medium s<br>and rough  | spaced,<br>with    | clean             | (0/0/0<br>onal bl  | ) stepp<br>ack spe | ed or<br>cks  | -                      |                 | . 2                |
| 20.80-                   | -20.97              | _                              | с                |                   |          |                | and of POSS        | orangish<br>SIBLY GF | n brown s<br>RADE A21  | surface            | stain             | ing.               | _                  |               | -                      |                 | 2                  |
|                          |                     | _                              |                  |                   |          | (5)            | Betwe              | en 19.7              | 70-19.951<br>95-20.151 | n, assu            | med zon           | ne of c            | ore los<br>ered as | s.            | -                      |                 |                    |
|                          |                     | <u> </u>                       |                  |                   |          |                | silty              | angula               | ar to sub $15-20.54$   | angula             | r fine            | to coa             | rse gra            | vel.          | <u> </u>               |                 |                    |
|                          |                     | -                              |                  |                   |          |                | silty              | y angula             | ar to sub              | angula             | r fine            | to coa             | rse gra            | vel.          | -                      |                 |                    |
| 21.20-                   | 22.70               | 21.20                          | 100              | 0.36              | 40       |                | size)              |                      |                        | with               | occos             | (up co             | rongiah            |               | -                      |                 |                    |
| 21.20-                   | 21.65               | - 01 00                        | D                | 0.07              |          | (NI)           | brown              | n relic              | sponge t               | races              | (up to            | 35mm i             | n size)            | •             | _                      |                 |                    |
|                          |                     |                                |                  |                   |          | 592            | nodul              | ar spor              | ige bed.               | ##]                | range .           | iron-st            | ained              | •             | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          |                | degre              | es, cle              | an, undu               | lating             | and si            | nooth w            | ith man            | y<br>Y        | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          |                | stair              | ing.                 | and occ                | asiona             | i orang           | gish br            | own sur            | face          | -                      |                 |                    |
| 21.79-                   | -21.96              |                                | С                |                   |          |                | Betwe<br>angul     | en 21.0<br>Lar to s  | 00-21.05<br>subangula  | n, non<br>ar fine  | intact<br>to coa  | , recov<br>arse gr | ered as<br>avel. W | ith           | -                      |                 | ·                  |
|                          |                     |                                |                  |                   |          | (4)            | many<br>(up t      | angular<br>:o 50mm   | to suba<br>in size)    | ngular             | small             | flint              | fragmen            | ts            |                        |                 | 1                  |
|                          |                     | -                              |                  |                   |          |                | Betwe<br>silty     | en 21.2<br>7 angula  | 20-21.60m<br>ar to sub | n, non<br>Dangula  | intact<br>r fine  | , recov<br>to coa  | ered as<br>rse gra | very<br>vel.  | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          |                | With<br>fragm      | many ar<br>ments (u  | ngular to<br>up to 40m | suban<br>m in s    | gular :<br>ize).  | small f            | lint               |               | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          |                | Betwe<br>green     | en 21.2<br>glauco    | 25-21.40m<br>phitic no | n and 2<br>odular  | 2.25-2<br>chalks  | 2.40m,<br>. ##     | possibl            | e             | -                      |                 | 1                  |
|                          |                     | _                              |                  |                   |          | (NI)           | At 21<br>trace     | 1.44m, v<br>es (up t | vith much<br>to 6mm in | n orang<br>n size) | ish bro           | own rel            | ic spon            | ge            | -                      |                 | 2                  |
|                          |                     | -                              |                  |                   |          | (15)           | At 22<br>Betwe     | 2.20m, v<br>en 22.3  | vith a ci<br>36-22.57m | rcular             | fossi<br>intact   | l (10mm<br>, recov | diamet<br>ered as  | er).          | -                      |                 | 2                  |
| 22.70-                   | -24.20              | 22.70                          | 80               | 0.22              | 15       |                | angul<br>many      | lar to s<br>angular  | subangula<br>to suba   | ir fine<br>ingular | to coa<br>small   | arse gr<br>to med  | avel. W<br>ium fli | ith<br>nt     | -                      |                 |                    |
| 22.70-                   | 23.15               | 22.70                          | 40<br>D          | 0.02              |          | (AZCL)<br>S99/ | fragm<br>Betwe     | ents (u              | 1p to 90m<br>70-23.00m | m in s<br>n, assu  | ize).<br>med zon  | ne of c            | ore los            | s.            | -                      |                 |                    |
|                          |                     | _                              |                  |                   |          | 295            | Betwe              | en 23.0              | )0-23.30m              | n, non             | intact            | , recov            | ered as            |               | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          | (NI)           | silty              | r angula             | ar to sub              | angula             | r fine            | to coa             | rse gra            | vel.          | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          |                | At 23              | 8.30m, v             | with occa              | sional             | angula            | ar to s            | ubangul            | ar            | -                      |                 |                    |
| 23.30-                   | 23.52               | -                              | C                |                   |          |                | small              | flint                | fragment               | up t               | o 50mm            | in siz             | e).                |               | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          | (5)            |                    |                      |                        |                    |                   |                    |                    |               | -                      |                 |                    |
|                          |                     | [                              |                  |                   |          |                |                    |                      |                        |                    |                   |                    |                    |               | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          | (NT)           | Betwe              | en 23.6              | 59-23.891<br>Subangula | n, non<br>ar fine  | intact            | , recov            | ered as            | th a          | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          | (              | subar              | ngular c             | cobble. V              | Vith ma            | ny ang            | ular to<br>m in si | subang             | ular          | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          | (6)            | At 23              | 8.95m, v             | with a su              | ubhoriz            | ontal             | grey ma            | rl seam            | (1mm          | -                      |                 | 2                  |
|                          |                     | _                              |                  |                   |          | (0)            | Betwe              | en 24.0              | 0-24.091               | n, non<br>ar fine  | intact            | , recov            | ered as            |               | -                      |                 |                    |
| 24.20-                   | -25.70              | 24.20                          | 100              | 0.36              | 53       |                | Betwe              | en 24.2              | 20-24.40               | n, non             | intact            | , recov            | ered as            | vel           | -                      |                 | ·                  |
| 24.20-                   | -24.45              | 24.20                          | 60               | 0.20              |          | (NI)<br>S100/  | With               | many ar              | ngular to              | suban              | gular (           | small f            | lint               |               | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          | 100            | Betwe              | en 24.2              | 20-25.701              | n, Poss            | ibly G            | rade Al            | •                  |               | -                      |                 |                    |
|                          |                     | _                              |                  |                   |          |                | At 24              | 1.60m, v             | with a gr              | ey mar             | l seam            | (1mm t             | hick).             |               | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          |                | Betwe              | en 24.7              | 76-24.82               | ı, with            | some :            | angular            | and                |               | -                      |                 |                    |
|                          |                     | -                              |                  |                   |          | (1)            | subar<br>size)     | ngular s             | small fli              | nt fra             | gments            | (up to             | 30mm i             | n             | -                      |                 |                    |
|                          |                     | <u>-</u>                       |                  |                   |          |                | At 25              | 5.02m <i>,</i> v     | with a su              | ıbangul            | ar gre            | y marl             | seam (1            | mm            | -                      |                 |                    |
| Drilling                 |                     |                                |                  |                   |          | Drogra         | thick              | z).                  |                        | 5                  | Grouw             |                    | r                  |               |                        |                 |                    |
| Denth                    | Hole                |                                | Technique        | <u> </u>          | Crew     | Depth          | Depth              | Depth to             | Date                   | Time               | Depth             | Depth              | Rose to            | in            | Depth                  | Rema            | rks on             |
| Doptil                   | Dia                 |                                | roomiqu          | 5                 |          | of Hole        | Cased              | Water                |                        |                    | Struck            | Cased              |                    | Mins          | Sealed                 | Groun           | dwater             |
|                          |                     |                                |                  |                   |          |                |                    |                      |                        |                    |                   |                    |                    |               |                        |                 |                    |
|                          |                     |                                |                  |                   |          |                |                    |                      |                        |                    |                   |                    |                    |               |                        |                 |                    |
| Remar                    | ks 🔜                |                                |                  |                   |          | 1              |                    |                      |                        | ļ                  | 1                 | ļ                  | ļļ                 |               | Load                   | ged by          | JD/SI              |
| Symbols a                | and                 |                                |                  |                   |          |                |                    |                      |                        |                    |                   |                    |                    |               | Che<br>Figu            | cked by re      | CPL<br>5 of 7      |
| abbreviati<br>explained  | ons are<br>on the   |                                |                  |                   |          |                |                    |                      |                        |                    |                   |                    |                    |               |                        |                 | 2/05/2020          |
| accompar<br>key sheet    | nying               |                                |                  |                   |          |                |                    |                      |                        |                    |                   |                    |                    |               | പ്                     | <u>ज</u> ित्वनि | त्रीव्य            |
| All dimens<br>are in met | sions<br>tres.      | Logged in a                    | accordance       | with BS59         | 30:2015  | Discontinuit   | / column gra       | aphic is illustr     | ative only & do        | es not repre       | esent discon      | tinuities as f     | ound in the c      | ore, refer to | -رے<br>؟ Discontinuity | Summary Sheet   |                    |

| Project   | A303<br>7A CO                            | AMESBUR<br>UNTESS | Y TO BE    | RWICK I           | OOWN -  | PHASE                 | Engineer  | 1  | AECOM  |   |  |  |  | <b>Boreho</b><br>Project                    | le E<br>No p           | BH72504<br>C197708         |                                      |
|---|--|-------------------|------------|-------------------|---------|-----------------------|---|--|--|---|--|--|--|---|------------------------|----------------------------|--------------------------------------|
| Client  | нтсни                                    | AYS ENG           | T.AND      |                   |         |                       | National (  | Grid 4   | 415426.4   | EN  |  |  |  | Ground                                      | level 7                | 70.76 M                    | OD                                   |
| Drilling  | 3  |                   | Prope      | rties/Sa          | mpling  | g                     | Strata  |  |  |   |  |  |  | oround                                      | 2010. 7                | Scale 1                    | :25                                  |
| Core Ru   | n/Depth                                  | Depth<br>Cased &  | Type       | Length<br>Max/Min | RQD     | SPT N                 | Descriptio  | on   |  |   |  |  |  |   | Depth                  | Legend                     | Discont-                             |
|   | a/ rime)                                 |                   |            |                   | 70      | (1)                   | At 25.1<br>trace (  | 17m, wi<br>(20mm i   | ith an c<br>in size)   | rangis<br>•   | h brow   | n relic  | sponge   | 1   | (Level)                |                            | 2                                    |
|   |  | -<br>-<br>-       |            |                   |         | (NI)                  | At 25.3<br>fragmen<br>Between<br>angulan<br>low sub<br>Between  | 38m, wi<br>nts (up<br>n 25.38<br>r to su<br>bangula<br>n 25.70                             | ith angu<br>p to 50m<br>3-25.70m<br>ubangula<br>ar cobbl<br>0-26.00m                                   | lar to<br>m in s<br>, non<br>r fine<br>e cont<br>, assu                               | suban<br>ize).<br>intact<br>to co<br>ent.<br>med zo                              | gular s<br>, recov<br>arse gr<br>ne of c   | mall fl<br>ered as<br>avel wi<br>ore los   | int<br>th a<br>s.                           | +<br>-<br>-<br>-       |                            |                                      |
| 25.70-  | 27.20                                    | 25.70             | 80<br>32   | 0.11<br>0.05      | 13      | (AZCL)                |   |  |  |   |  |  |  |   | -                      |                            |                                      |
|   |  |                   |            |                   |         | (NI)                  | Between<br>silty a<br>With ma<br>flint f<br>full co   | n 26.00<br>angular<br>any suk<br>Eragmer<br>ore fli  | 0-26.38m<br>r to sub<br>pangular<br>nts (up<br>ints. ##  | , non<br>angula<br>to su<br>to 60m<br>]   | intact<br>r fine<br>bround<br>m in s   | , recov<br>to coa<br>ed smal<br>ize). [  | ered as<br>rse gra<br>l and m<br>large n   | vel.<br>edium<br>early                      |                        |                            |                                      |
| 26.38-  | 26.48                                    | -                 | с          |                   |         |                       | Below 2   | 26.38m,  | , GRADE  | A2. ##  | 1  |  |  |   | -                      |                            | 3                                    |
|   |  | <br>-<br>-<br>-   |            |                   |         | (8)                   | Between<br>degrees<br>black s<br>Between<br>silty a   | n 26.69<br>s, clea<br>specks.<br>n 26.90<br>angular  | 9-26.81m<br>an, step<br>)-27.50m<br>r to sub   | , disc<br>ped an<br>, non<br>angula   | ontinu<br>d roug<br>intact<br>r fine   | ity inc<br>h with<br>, recov<br>to coa   | lined 8<br>occasio<br>ered as<br>rse gra   | 0<br>nal<br>vel.                            | +-<br>+<br>+<br>+<br>+ |                            | 3                                    |
|   |  | -                 |            |                   |         |                       |   |  |  |   |  |  |  |   | -                      |                            |                                      |
| 27.20-  | 28.70                                    | 27.20             | 100        | 0.22              | 32      | (NI)                  |   |  |  |   |  |  |  |   | -                      |                            |                                      |
| 27.20-  | 27.53                                    | 27.20             |            | 0.05              |         | C100/<br>180          |   |  |  |   |  |  |  |   | -                      |                            |                                      |
|   |  | -<br>-<br>-       |            |                   |         |                       | Between<br>incline<br>(openeo   | n 27.70<br>ed 85 d<br>d durir  | 0-28.10m<br>degrees,<br>ng loggi   | , inci<br>clean<br>ng).   | pient<br>, undu  | discont<br>lating  | inuity<br>and rou  | gh.   | -<br>-<br>-            |                            |                                      |
| 28.48-  | 28.70                                    |                   | с          |                   |         | (2)                   | At 28.1<br>fragmer<br>Between<br>degrees<br>specks<br>Between<br>silty a<br>Between<br>relic s<br>develop | 10m, wints (up<br>n 28.10<br>s, clea<br>n 28.40<br>angular<br>n 28.43<br>sponge<br>ped ora | ith angu<br>p to 30m<br>)-28.35m<br>an, step<br>)-28.43m<br>c to sub<br>3-28.70m<br>traces<br>ange, ir | lar to<br>m in s<br>, disc<br>ped an<br>, non<br>angula<br>, with<br>(up to<br>on-sta | suban<br>ize).<br>ontinu<br>d roug<br>intact<br>r fine<br>many<br>50mm<br>ined a | gular s<br>ity inc<br>h with<br>, recov<br>to coa<br>orangis<br>in size<br>nd poss | mall fl<br>lined 7<br>many bl<br>ered as<br>rse gra<br>h brown<br>). [wel<br>ible gr | int<br>0<br>ack<br>very<br>vel.<br>1<br>een | +                      |                            | 3                                    |
| 28.70-  | 30.20                                    | 28.70             | 67         | 0.50              | 45      |                       | glaucor<br>Betweer  | nitic r<br>n 28.70   | nodular<br>)-29.20m  | sponge<br>, assu  | bed.<br>med zo   | ##]<br>ne of c   | ore los  | s.  | -                      |                            |                                      |
| 28.70-  | 28.91                                    | -<br>28.70<br>    | 56         | 0.05              |         | (AZCL)<br>C100/<br>60 |   |  |  |   |  |  |  |   | +<br>+<br>+            |                            |                                      |
|   |  | -                 |            |                   |         | (NI)                  | Between<br>angular<br>with mu<br>20mm in<br>bed. ##   | n 29.20<br>r to su<br>uch ora<br>n size)<br>#]   | )-29.36m<br>ibangula<br>angish b<br>). [oran   | , non<br>r fine<br>rown r<br>ge iro   | intact<br>to co<br>elic s<br>n stai  | , recov<br>arse gr<br>ponge t<br>ned nod   | ered as<br>avel. C<br>races (<br>ular sp   | lasts<br>up to<br>onge                      |                        |                            |                                      |
| 29.58-  | 30.08                                    | <br>-<br>-<br>-   | с          |                   |         | (4)                   | orangis<br>size).<br>At 29.4<br>to 1mm<br>Between<br>to 5mm<br>At 29.8<br>flint f                         | 43m, wi<br>thick)<br>n 29.58<br>thick)<br>88m, wi<br>fragmer                               | wn relic<br>ith a su<br>).<br>3-29.83m<br>).<br>ith rare<br>nts (up                                    | spong<br>bhoriz<br>, with<br>angul<br>to 10m  | e trac<br>ontal<br>many<br>ar to<br>m in s                                       | grey ma<br>grey ma<br>grey ma<br>subangu<br>ize).                                  | rl seam<br>rl seam<br>rl seam<br>lar sma   | u in<br>(up<br>s (up<br>ll                  | +-<br>-<br>-<br>-<br>- |                            |                                      |
| Drilling  | )  |                   | ļ          | ·                 |         | Progre                | SS Dooth ID   | ooth f-  |  |   | Grou   | ndwate   | r  | in .  | Denth                  |                            |                                      |
| Depth   | Dia                                      | -                 | Technique  | e                 | Crew    | of Hole               | Cased V   | apin to<br>Nater   | Date   | Time  | Struck   | Cased  | Rose to  | in<br>Mins                                  | Sealed                 | Groun                      | dwater                               |
| Domo  | ke <b>F</b> i                            |                   |            |                   |         |                       |   |  |  |   |  |  |  |   |                        |                            |                                      |
| Symbols a<br>abbreviatio<br>explained<br>accompan | AGS<br>and<br>ons are<br>on the<br>hying |                   |            |                   |         |                       |   |  |  |   |  |  |  |   | Log<br>Che<br>Figu     | iged by<br>ecked by<br>ure | JD/SI<br>CPL<br>5 of 7<br>12/05/2020 |
| key sheet.<br>All dimens                          | sions                                    |                   | accordance | with BSE0         | 30.2015 | Discontinuit          | oolump arc-t-   | o is illustrat   | iivo only °  | not ror   | agent discord  | tinuition co f   | ound in the -  | oro refer to                                | Ľ                      | and adv                    | ਆਵਿਤ                                 |

| Project                  | A303<br>7A CC     | AMESBUR<br>DUNTESS | Y TO BE    | RWICK I   | DOWN -  | PHASE         | Enginee        | er                | AECOM               |                  |                  |                    |                    | <b>Boreho</b><br>Project | No PO         | H72504        |               |
|--------------------------|-------------------|--------------------|------------|-----------|---------|---------------|----------------|-------------------|---------------------|------------------|------------------|--------------------|--------------------|--------------------------|---------------|---------------|---------------|
| Client                   | итси              | NAVE ENC           | רוא ג זי   |           |         |               | Nationa        | l Grid            | 415426.4            | E                |                  |                    |                    | Ground                   |               | 176 m         |               |
| Drilling                 | q                 | VAIS ENG           | Prope      | rties/Sa  | ampling | q             | Strata         | 1                 | 142007.1            |                  |                  |                    |                    | Ground                   | Level 7       | Scale 1       | :25           |
| Core Ru                  | n/Depth           | Depth<br>Cased &   | Туре       | Length    | RQD     | SPT N         | Descrip        | tion              |                     |                  |                  |                    |                    |                          | Depth         | Legend        | Discont-      |
| (Core Di                 | ia/Time)          | (to Water          | TCR/SCR%   | , Max/Min | %       | (FI)          |                |                   |                     |                  |                  |                    |                    |                          | (Level)       |               | inuity        |
|                          |                   | -                  |            |           |         |               | Betwe<br>relic | en 29.9<br>sponge | 97-30.10m<br>traces | , with<br>(up to | many o<br>20mm : | orangis<br>in size | h brown<br>. [nodu | lar                      | F             |               | 1             |
| 30.20-                   | -30.38            | 30.20              |            |           |         | C96/95        | spong<br>Betwe | e bed.<br>en 30.( | ##]<br>)0-30.20m    | , with           | many g           | grey ma            | rl seem            | s (up                    | ł             |               |               |
|                          |                   | -                  |            |           |         |               | to 3m          | m thick           | c) with w           | ispy g           | rey par          | rtings             | (1mm th            | lck).                    | 30.38         |               |               |
|                          |                   | -                  |            |           |         |               |                |                   | En                  | αοιΒ             | orenoi           | 3                  |                    |                          | (40.38        |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | ÷             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Į             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | ł             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | -             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Ĺ             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | l-            |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | F             |               |               |
|                          |                   |                    |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | t             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Į             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | ÷             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | t             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | F             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | l-            |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | ł             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Ļ             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | +             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | t             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | t             |               |               |
|                          |                   | _                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | <b>—</b>      |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | F             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | t             |               |               |
|                          |                   | Ę                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Į             |               |               |
|                          |                   |                    |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | F             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | ÷             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Į             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Ļ             |               |               |
|                          |                   | _                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | <u>+</u>      |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | t             |               |               |
|                          |                   | Ę                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Į             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | ÷             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | +             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | İ.            |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Ļ             |               |               |
|                          |                   | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | F             |               |               |
| <b>D</b>                 |                   | <u> </u>           | <u> </u>   |           |         |               |                |                   |                     |                  | -                |                    |                    |                          | <u> </u>      |               |               |
| Drilling                 | g<br>Hole         |                    | Technique  | 2         | Crew    | Depth         | ess<br>Depth   | Depth to          | Date                | Time             | Grour<br>Depth   | Depth              | r<br>Rose to       | in                       | Depth         | Rema          | rks on        |
| Берш                     | Dia               |                    | · connique | ,         | 0.00    | of Hole       | Cased          | Water             | 20.0                |                  | Struck           | Cased              |                    | Mins                     | Sealed        | Groun         | dwater        |
|                          |                   |                    |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          |               |               |               |
|                          |                   |                    |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          |               |               |               |
| Remar                    | rks 📊             |                    |            |           |         | 1             |                |                   |                     |                  | l                | ļ                  | <u> </u>           |                          | Load          | ged by        | JD/SI         |
| Symbols a                | and               | -                  |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | Che<br>Figu   | cked by<br>re | CPL<br>7 of 7 |
| abbreviati<br>explained  | ons are<br>on the |                    |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          |               | _             | 12/05/2020    |
| accompar<br>key sheet    | nying<br>         |                    |            |           |         |               |                |                   |                     |                  |                  |                    |                    |                          | ē             | <u>w</u> ied  | miss          |
| All dimens<br>are in met | sions<br>tres.    | Logged in          | accordance | with BS59 | 30:2015 | Discontinuity | / column gra   | phic is illustr   | ative only & doe    | es not repre     | sent discon      | tinuities as f     | ound in the c      | ore, refer to            | Discontinuity | Summary Sheet |               |

#### Fieldwork Results - Discontinuity Summary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Client HIGHWAYS ENGLAND

Project No. PC197708

Hole No.

BH72403

| Denth /       |         |          |     |          | D              | iscontinuity                |                             |                      |                        |
|---------------|---------|----------|-----|----------|----------------|-----------------------------|-----------------------------|----------------------|------------------------|
| Length<br>(m) | Set No. | Туре     | Dip | Aperture | Infill<br>(mm) | Infill<br>Material<br>Desc. | Roughness<br>(Intermediate) | Roughness<br>(Small) | Remarks                |
| 10.00.10.05   | 4       | loint    | 75  |          | 0              |                             | Lindulating                 | Craceth              | with many block angels |
| 18.23-18.35   | 1       | Joint    | 80  |          | 0              |                             | Undulating                  | Smooth               | with many black specks |
| 18.50-18.60   |         | Fracture | 50  |          | 0              |                             | Stepped                     | Bough                | with many black specks |
| 18.70-18.80   | 1       | Joint    | 85  |          | 0              |                             | Stepped                     | Rough                | with many black specks |
|               |         |          |     |          |                |                             |                             |                      |                        |

Dip recorded as measured perpendicular to the core axis.



Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Client HIGHWAYS ENGLAND

Project No. PC197708

Hole No.

BH72501

Geotechnics

| Denth /       |         |       |     |          | C              | iscontinuity                |                             |                      |                              |
|---------------|---------|-------|-----|----------|----------------|-----------------------------|-----------------------------|----------------------|------------------------------|
| Length<br>(m) | Set No. | Туре  | Dip | Aperture | Infill<br>(mm) | Infill<br>Material<br>Desc. | Roughness<br>(Intermediate) | Roughness<br>(Small) | Remarks                      |
|               |         |       |     |          |                |                             |                             |                      |                              |
| 23.77         | 1       | Joint | 5   |          |                |                             | Stepped                     | Rough                | with occasional black specks |
| 23.90-23.94   | 2       | Joint | 30  |          | 1              | Chalk                       | Stepped                     | Rough                | with many black specks       |
| 25.00         | 1       | Joint | 0   |          | 1              | Marl                        | Stepped                     | Rough                | with many black specks       |
| 25.14         | 1       | Joint | 0   |          | 1              | Marl                        | Stepped                     | Rough                | with many black specks       |
| 25.70-25.72   | 1       | Joint | 10  |          |                |                             | Undulating                  | Rough                | with many black specks       |
| 26.45-26.54   |         | Joint | 70  |          |                |                             | Stepped                     | Rough                | with many black specks       |
| 26.60-26.70   |         | Joint | 80  |          |                |                             | Stepped                     | Rough                | with many black specks       |
| 26.60         | 1       | Joint | 5   |          |                |                             | Undulating                  | Rough                | with many black specks       |
| 26.70-26.82   |         | Joint | 60  |          | 1              | Chalk                       | Stepped                     | Rough                | with many black specks       |
| 26.90         | 1       | Joint | 0   |          |                |                             | Stepped                     | Rough                | with many black specks       |
| 26.94-26.97   | 2       | Joint | 30  |          |                |                             | Stepped                     | Rough                | with many black specks       |
| 27.15-27.17   | 1       | Joint | 15  |          |                |                             | Stepped                     | Rough                | with many black specks       |
| 28.44         | 1       | Joint | 0   |          |                |                             | Stepped                     | Rough                | with many black specks       |
| 28.65-28.69   | 2       | Joint | 30  |          | 1              | Chalk                       | Stepped                     | Rough                | with many black specks and   |
|               |         |       |     |          |                |                             |                             |                      | much orangish brown surface  |
|               |         |       |     |          |                |                             |                             |                      | staining, sponges            |
| 29.30-29.35   | 2       | Joint | 30  |          | 1              | Chalk                       | Stepped                     | Rough                | with many black specks and   |
|               |         |       |     |          |                |                             |                             |                      | much orangish brown surface  |
|               |         |       |     |          |                |                             |                             |                      | staining, sponges            |
| 29.42-29.46   | 1       | Joint | 10  |          | 1              | Marl                        | Stepped                     | Rough                | with many black specks and   |
|               |         |       |     |          |                |                             |                             |                      | occasional orangish brown    |
|               |         |       |     |          |                |                             |                             |                      | surface staining             |
| 29.86         | 1       | Joint | 0   |          |                |                             | Stepped                     | Rough                | with many black specks       |
| 30.26         | 1       | Joint | 8   |          |                |                             | Stepped                     | Rough                | with many black specks       |
|               |         |       |     |          |                |                             |                             |                      |                              |

Dip recorded as measured perpendicular to the core axis.

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Client HIGHWAYS ENGLAND Project No. PC197708

Hole No.

BH72502

Geotechnics

| Dopth /       |            |                |         |                  | 0              | Discontinuity               |                             |                      |                                  |
|---------------|------------|----------------|---------|------------------|----------------|-----------------------------|-----------------------------|----------------------|----------------------------------|
| Length<br>(m) | Set No.    | Туре           | Dip     | Aperture         | Infill<br>(mm) | Infill<br>Material<br>Desc. | Roughness<br>(Intermediate) | Roughness<br>(Small) | Remarks                          |
| 10.00.10.00   |            | la int         | 00      |                  |                |                             | l la dulationa              | Devek                |                                  |
| 16.26-16.36   |            | Joint          | 90      |                  |                |                             | Planar                      | Smooth               | with many black specks           |
| 10.30-10.30   |            | Joint          | 40      |                  |                |                             | i iaiiai                    | Sinootin             |                                  |
| 16.90-17.04   | 3          | Joint          | 70      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 17.04-17.12   | 3          | Joint          | 60      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 17.12-17.15   | 2          | Joint          | 35      |                  | 1              | Chalk                       | Stepped                     | Rough                | with many black specks           |
| 17.20-17.23   | 2          | Joint          | 40      |                  |                |                             | Planar                      | Smooth               | with many black specks           |
| 17.23-17.25   | 2          | Joint          | 30      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 18.25-18.28   | 1          | Joint          | 20      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 18.30-18.42   | 3          | Joint          | 70      |                  |                |                             | Undulating                  | Rough                | with many black specks           |
| 18.30-18.43   | 3          | Joint          | 70      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 18.40-18.45   | 2          | Joint          | 40      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 18.43-18.58   | 3          | Joint          | 60      |                  |                |                             | Planar                      | Smooth               | with many black specks           |
| 18.58-18.64   | 2          | Joint          | 40      |                  | 1              | Chalk                       | Stepped                     | Rough                | with many black specks           |
| 20.16         | 1          | Joint          | 0       |                  | 1              | Chalk                       | Stepped                     | Rough                | with many black specks           |
| 20.22         | 1          | Joint          | 5       |                  |                |                             | Undulating                  | Smooth               | with occasional black specks     |
| 20.53-20.63   |            | Joint          | 90      |                  |                |                             | Undulating                  | Smooth               | with many black specks           |
| 20.53         | 1          | Joint          | 0       |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 20.55-20.63   |            | Joint          | 85      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 20.73-20.77   | 1          | Joint          | 20      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 21.61         | 1          | Joint          | 5       |                  | 1              | Marl                        | Stepped                     | Rough                | with occasional black specks     |
| 21.67-21.70   | 2          | Joint          | 40      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 21.80         | 1          | Joint          | 0       |                  | 1              | Chalk                       | Stepped                     | Rough                | with many black specks           |
| 22.15-22.22   | 2          | Joint          | 35      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 22.17-22.50   |            | Joint          | 85      |                  |                |                             | Undulating                  | Smooth               | with many black specks           |
| 23.60-23.66   | 2          | Joint          | 40      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 23.66-23.83   |            | Joint          | 85      |                  |                |                             | Undulating                  | Smooth               | with many black specks,          |
|               |            |                |         |                  | .              |                             |                             |                      | Insipient fracture partly opened |
| 24.36-24.49   |            | Joint          | 90      |                  | 1              | Marl                        | Stepped                     | Rough                | with many black specks           |
| 24.36         | 1          | Joint          | 5       |                  |                |                             | Planar                      | Smooth               | with many black specks           |
| 24.40         | 1          | Joint          | 0       |                  | 1              | Mari                        | Planar                      | Smooth               | with many black specks           |
| 24.49         | 1          | Joint          | 5       |                  | 1              | Marl                        | Stepped                     | Rough                | with many black specks           |
| 24.58-24.70   | 2          | Joint          | 35      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 24.63-24.67   |            | Joint          | 50      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 24.75-24.82   | 2          | Joint          | 40      |                  |                |                             | Stepped                     | Rough                | with many black specks           |
| 25.00-25.26   | 3          | Joint          | /0      |                  |                |                             | Undulating                  | Smooth               | with many black specks           |
| 25.20-25.24   | 2          | Joint          | 30      |                  |                |                             | Planar                      | Smooth               | with occasional black specks     |
| 25.50         | 1          | Joint          | 0       |                  | 1              | Iviari                      | Stepped                     | Rougn                | with many black specks           |
| 25.95-26.00   | 2          |                | 35      |                  |                |                             | Stepped                     | Rougn                | with occasional black specks     |
| 26.20         | 1          |                | 0       |                  |                |                             | Undulating                  | Smooth               | with occasional black specks     |
| 26.52-26.60   | 2          |                | 40      |                  |                |                             | Undulating                  | Rough                | with occasional black specks     |
|               |            |                |         |                  |                |                             |                             |                      | and orangish brown surface       |
| 26.90         | 4          |                |         |                  |                |                             | Stornad                     | Pouch                | stairilliy                       |
| 20.00         |            |                | 0       |                  | 4              | Chall                       | Stepped                     | Rough                | with many black specks           |
| 20.00-20.09   |            |                | 30      |                  | '              | Offaik                      | Siepped                     | nougri               | much orangish brown surface      |
|               |            |                |         |                  |                |                             |                             |                      | Istaining snonge                 |
| 28,38-28 50   | 3          |                | 60      |                  |                |                             | Stenned                     | Rough                | with many black specks and       |
| 20.00 20.00   |            |                |         |                  |                |                             |                             | liougn               |                                  |
| AGS Dip rec   | orded as m | easured perper | ndicula | r to the core ax | is.            |                             |                             | •                    |                                  |

Dip recorded as measured perpendicular to the core axis. Stratum boundary

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Client HIGHWAYS ENGLAND

Project No. PC197708

Hole No.

BH72502

| Denth /       |            |                |        |                   | 0              | Discontinuity               |                             |                      |  |
|---------------|------------|----------------|--------|-------------------|----------------|-----------------------------|-----------------------------|----------------------|--|
| Length<br>(m) | Set No.    | Туре           | Dip    | Aperture          | Infill<br>(mm) | Infill<br>Material<br>Desc. | Roughness<br>(Intermediate) | Roughness<br>(Small) | Remarks  |
|               |            |                |        |                   |                |                             |                             |                      | much orangish brown surface<br>staining, sponges           |
| 29.33         | 1          |                | 5      |                   | 1              | Marl                        | Stepped                     | Rough                | with many black specks                                     |
| 29 42-29 46   | 1          |                | 20     |                   | 1              | Chalk                       | Stepped                     | Bough                | with many black specks                                     |
| 29 79-29 87   |            |                | 50     |                   |                | <b>U</b> Hait               |                             | Smooth               | with occasional black specks                               |
| 29.87-30.00   | 3          |                | 70     |                   | 15             | Sheet Flint                 | Planar                      | Smooth               | sheet flint (up to 15mm thick along discontinuity, closed) |
| Dip rec       | orded as m | easured perper | dicula | r to the core axi | S.             |                             |                             |                      |  |

Printed: 17/01/2020 Page 4

Stratum boundary



Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Client HIGHWAYS ENGLAND

Project No. PC197708

Hole No.

BH72504

Geotechnics

| Dopth /       |         |          |     |          | 0              | iscontinuity                |                             |                      |   |
|---------------|---------|----------|-----|----------|----------------|-----------------------------|-----------------------------|----------------------|---|
| Length<br>(m) | Set No. | Туре     | Dip | Aperture | Infill<br>(mm) | Infill<br>Material<br>Desc. | Roughness<br>(Intermediate) | Roughness<br>(Small) | Remarks   |
|               |         |          |     |          |                |                             |                             |                      |   |
| 17.55-17.90   | 2       | Joint    | 30  |          |                |                             | Planar                      | Smooth               | with occasional orangish brown surface staining   |
| 17.60-17.65   | 2       | Joint    | 40  |          | 1              | Comminuted<br>chalk         | Stepped                     | Rough                | with occasional black specks<br>and orangish brown surface<br>staining                            |
| 17.69-17.72   | 1       | Joint    | 20  |          |                |                             | Planar                      | Smooth               | with occasional orangish brown surface staining   |
| 17.72-17.50   | 2       | Joint    | 30  |          |                |                             | Stepped                     | Rough                | with occasional black specks<br>and orangish brown surface<br>staining                            |
| 17.83-17.87   | 1       | Joint    | 20  |          |                |                             | Stepped                     | Rough                | with many black specks  |
| 17.90-18.20   |         | Fracture | 90  |          |                |                             | Undulating                  | Smooth               | with occasional black specks<br>and orangish brown surface<br>staining                            |
| 17.90         | 1       | Joint    | 0   |          | 1              | Comminuted<br>chalk         | Stepped                     | Rough                | with occasional black specks<br>and much orangish brown<br>surface staining (possible<br>sponges) |
| 20.25         | 1       | Joint    | 0   |          |                |                             | Stepped                     | Rough                | with occasional orangish brown<br>surface staining  |
| 20.38-20.45   | 2       | Joint    | 30  |          |                |                             | Stepped                     | Rough                | with many black specks and<br>occasional orangish brown<br>surface staining                       |
| 20.70-20.82   | 2       | Joint    | 90  |          |                |                             | Undulating                  | Smooth               | with many black specks and<br>occasional orangish brown<br>surface staining                       |
| 20.80-20.84   | 2       | Joint    | 30  |          | 1              | Comminuted chalk            | Planar                      | Smooth               | with many black specks and rare orangish brown surface staining                                   |
| 20.95         | 1       | Joint    | 0   |          |                |                             | Undulating                  | Smooth               | with many black specks and<br>occasional orangish brown<br>surface staining                       |
| 21.96         | 1       | Joint    | 0   |          |                |                             | Stepped                     | Rough                | with many black specks  |
| 22.03-22.06   | 1       | Joint    | 10  |          |                |                             | Undulating                  | Smooth               | with many black specks  |
| 22.36         | 1       | Joint    | 0   |          | 1              | Comminuted<br>chalk         | Stepped                     | Rough                | with many black specks and<br>occasional orangish brown<br>surface staining (possible<br>sponges) |
| 22.42-22.52   | 2       | Joint    | 40  |          |                |                             | Stepped                     | Rough                | with many black specks  |
| 22.57-22.65   | 2       | Joint    | 40  |          | 1              | Comminuted chalk            | Stepped                     | Rough                | with rare black specks  |
| 23.52-23.57   | 1       | Joint    | 15  |          | 1              | Marl                        | Stepped                     | Rough                | with many black specks  |
| 23.59-23.67   | 2       | Joint    | 30  |          | 1              |                             | Undulating                  | Smooth               | with occasional black specks  |
| 23.96-24.00   | 2       | Joint    | 40  |          | 1              | Marl                        | Stepped                     | Rough                | with many black specks  |
| 24.10         | 1       | Joint    | 0   |          | 1              | Marl                        | Stepped                     | Rough                | with many black specks  |
| 25.25-25.32   | 2       | Joint    | 30  |          |                |                             | Stepped                     | Rough                | with many black specks  |
| 26.38-26.48   | 3       | Joint    | 50  |          |                |                             | Undulating                  | Rough                | with many black specks and<br>occasional orangish brown<br>surface staining                       |
|               |         |          |     |          | 1              |                             |                             |                      |   |

Dip recorded as measured perpendicular to the core axis. \_\_\_\_\_ Stratum boundary

AGS

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Client HIGHWAYS ENGLAND Project No. PC197708

Hole No.

BH72504

| Depth /       |                 |                |              |                  | [              | Discontinuity               |                             |                      |   |
|---------------|-----------------|----------------|--------------|------------------|----------------|-----------------------------|-----------------------------|----------------------|---|
| Length<br>(m) | Set No.         | Туре           | Dip          | Aperture         | Infill<br>(mm) | Infill<br>Material<br>Desc. | Roughness<br>(Intermediate) | Roughness<br>(Small) | Remarks   |
| 26.59-26.64   | 3               | Joint          | 60           |                  |                |                             | Stepped                     | Rough                | with occasional black specks  |
| 26.69-26.81   |                 | Fracture       | 80           |                  |                |                             | Stepped                     | Rough                | with occasional black specks  |
| 26.81-26.87   | 3               | Joint          | 60           |                  |                |                             | Stepped                     | Rough                | with occasional black specks  |
| 27.70-28.10   |                 | Fracture       | 85           |                  |                |                             | Undulating                  | Rough                | Insipient fracture opened during logging  |
| 28.10-20.35   |                 | Fracture       | 70           |                  |                |                             | Stepped                     | Rough                | with many black specks  |
| 28.43-28.48   | 3               | Joint          | 50           |                  |                |                             | Stepped                     | Rough                | with occasional black specks<br>and orangish brown surface<br>staining                    |
| 29.50-29.53   | 1               | Joint          | 20           |                  |                |                             | Undulating                  | Rough                | with occasional black specks<br>and orangish brown surface<br>staining (possible sponges) |
| 29.58         | 1               | Joint          | 5            |                  |                |                             | Stepped                     | Rough                | with many black specks and occasional grey clay smear                                     |
| 30.06         | 1               | Joint          | 5            |                  | 1              | Marl                        | Stepped                     | Rough                | occasional grey clay smear<br>with many black specks and<br>grey surface staining         |
| Dip rec       | l<br>orded as m | easured perper | l<br>ndicula | r to the core ax | is.            |                             |                             |                      |   |

 Stratum boundary Printed: 17/01/2020 Page 6



Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole          | Depth      | Level     | Type        | SWP     | Seating             | g Drive               |                     | Test                  | Drive                  |                        | SPT 'N' |    | Ur        | ncorr     | ecte      | d SP1  | г         |
|---------------|------------|-----------|-------------|---------|---------------------|-----------------------|---------------------|-----------------------|------------------------|------------------------|---------|----|-----------|-----------|-----------|--------|-----------|
|               | m bgl      | m OD      | - , , , , , | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>150-225</b><br>(mm) | <b>225-300</b><br>(mm) | value   | 1  | 0         | 20        | 30        | 40     | 50        |
| BH72402       | 1.20       | 69.75     | S           | -       | 4                   | 6                     | 8                   | 9                     | 9                      | 9                      | 35      |    | 1         |           |           | *      |           |
| BH72402       | 2.20       | 68.75     | S           | -       | 3                   | 7                     | 7                   | 7                     | 5                      | 4                      | 23      |    | <br> <br> | *         |           | 1      | <br> <br> |
| BH72402       | 3.20       | 67.75     | S           | -       | 1                   | 1                     | 1                   | 1                     | 2                      | 2                      | 6       | *  | <br> <br> | <br> <br> | <br> <br> | 1      |           |
| BH72402       | 4.30       | 66.65     | С           | -       | 1                   | 2                     | 3                   | 2                     | 2                      | 2                      | 9       | *  | 1         |           |           | 1      |           |
| BH72402       | 5.55       | 65.40     | S           | 300     | -                   | -                     | -                   | -                     | 1                      | 1                      | 2       | *  | <br> <br> |           | <br> <br> | 1      | <br> <br> |
| BH72402       | 7.05       | 63.90     | S           | -       | -                   | 1                     | 1                   | 1                     | 1                      | 1                      | 4       | *  |           |           |           | 1      |           |
| BH72402       | 8.55       | 62.40     | S           | -       | 1                   | 1                     | 2                   | 3                     | 2                      | 2                      | 9       | *  |           | <br> <br> |           | 1      |           |
| BH72402       | 10.10      | 60.85     | S           | -       | 4                   | 3                     | 4                   | 2                     | 2                      | 2                      | 10      |    | *         |           |           | 1      |           |
| BH72402       | 11.70      | 59.25     | S           | -       | 6                   | 6                     | 7                   | 7                     | 6                      | 5                      | 25      |    | <br> <br> | <b>*</b>  | • ¦       |        |           |
| BH72402       | 12.40      | 58.55     | S           | -       | 2                   | 3                     | 3                   | 3                     | 5                      | 5                      | 16      |    | *         |           | 1         | 1      |           |
| Driller       |            |           | Craig       | Roberts |                     |                       | Remark              | (5                    |                        |                        |         |    |           |           |           |        |           |
| Hammer No.    | 75         |           |             | Equipm  | ent check           | ed and ca             | libration c         | arried out in a       | accord                 | lance                  | e with  | BS | EN IS     | 0         |           |        |           |
| Energy Ratio  | , Er (%)   |           | 76.00       |         |                     |                       | 224/0-3             | 5. 2005               |                        |                        |         |    |           |           |           |        |           |
| Calibration D | ate        |           | 30/09/      | /2019   |                     |                       |                     |                       |                        |                        |         |    |           |           |           |        |           |
| -/- Blows/pe  | enetration | n (mm) at | ter seat    | ting    |                     | S - S                 | tandard P           | enetration            | n Test (SP             | ΥT)                    |         |    | <u>ה</u>  |           | `L        | -<br>N |           |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole                           | Denth                  | ا میرما                 | Type            | SWP   | Seating             | g Drive            |                        | Test               | Drive           |                        | SPT 'N' |         | Unco  | rrecte    | d SPT |    |
|--------------------------------|------------------------|-------------------------|-----------------|-------|---------------------|--------------------|------------------------|--------------------|-----------------|------------------------|---------|---------|-------|-----------|-------|----|
|                                | m bgl                  | m OD                    | 1. Abe          | (mm)  | <b>0-75</b><br>(mm) | <b>75-150</b> (mm) | <b>0-75</b><br>(mm)    | <b>75-150</b> (mm) | 150-225<br>(mm) | <b>225-300</b><br>(mm) | Value   | 10      | 20    | 'N'<br>30 | 40    | 50 |
| BH72402                        | 14.10                  | 56.85                   | s               | -     | 2                   | 8                  | 8                      | 11                 | 16              | 19                     | 54      | 1       |       | <br> <br> | 1     | >  |
| BH72402                        | 15.60                  | 55.35                   | S               |       | 5                   | 9                  | 18                     | 14                 | 24              | 26                     | 82      |         |       |           |       | A  |
| Hammer No.                     | STUAR                  | Proudio                 | ICK             |       | Equipm              | ns<br>Ient check   | ed and ca              | alibration c       | arried out in a | accordar               | nce wi  | th BS I | EN IS | C         |       |    |
| Energy Ratio                   | , Er (%)               |                         | 57.00           |       |                     |                    | 22410-                 | 5.2000             |                 |                        |         |         |       |           |       |    |
| Calibration D                  | ate                    |                         | 09/05           | /2019 |                     |                    |                        |                    |                 |                        |         |         |       |           |       |    |
| -/- Blows/pe<br>-*/- Total blo | enetratior<br>ws/penet | n (mm) at<br>tration (m | iter sea<br>im) | ting  |                     | S - S<br>C - S     | tandard P<br>PT with c | enetratior         | n Test (SP      | PT)                    | G       | eσ      | )G    | C⊢        | N     | CS |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

AGS Printed: 29/01/2020 Page 2

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Project No PC197708

Client HIGHWAYS ENGLAND

| Hole  | Depth                  | Level                   | Type    | SWP   | Seating             | g Drive               |                        | Test               | Drive           |                        | SPT 'N'         | Unc        | orrecte   | d SPT          |           |
|---|------------------------|-------------------------|---------|-------|---------------------|-----------------------|------------------------|--------------------|-----------------|------------------------|-----------------|------------|-----------|----------------|-----------|
|   | m bgl                  | m OD                    | 1,966   | (mm)  | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm)    | <b>75-150</b> (mm) | 150-225<br>(mm) | <b>225-300</b><br>(mm) | Value           | 10 20      | 'N'<br>30 | 40             | 50        |
| BH72402   | 18.00                  | 52.95                   | s       | -     | 5                   | 6                     | 9                      | 17                 | 16              | 14                     | 56              |            |           | <br> <br> <br> | >         |
| BH72402   | 19.00                  | 51.95                   | s       | -     | 10                  | 11                    | 10                     | 11                 | 15              | 18                     | 54              |            | 1         | <br> <br>      | ->        |
| BH72402   | 20.00                  | 50.95                   | s       | -     | 9                   | 11                    | 9                      | 11                 | 10              | 15                     | 45              |            | I<br>     | *              | <br> <br> |
|   |                        |                         |         |       |                     |                       |                        |                    |                 |                        |                 |            |           |                |           |
| David Cowling           Hammer No.         AR1962 |                        |                         |         |       |                     |                       | Equipm                 | ent check          | ed and ca       | alibration c           | arried out in a | accordance | with BS   | EN ISC         | )         |
| Energy Ratio                                      | , Er (%)               |                         | 66.00   |       |                     |                       | 22470-0                | 5. 2000            |                 |                        |                 |            |           |                |           |
| Calibration D                                     | ate                    |                         | 31/10   | /2019 |                     |                       |                        |                    |                 |                        |                 |            |           |                |           |
| -/- Blows/pe                                      | enetratior<br>ws/penet | n (mm) at<br>tration (m | ter sea | ting  |                     | S - S<br>C - S        | tandard P<br>PT with c | enetration         | n Test (SF      | PT)                    | G               | റോര        | Ю         |                | CS        |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Project No PC197708

Client HIGHWAYS ENGLAND

| Hole              | Depth      | Level     | Type     | SWP     | Seating             | g Drive            |                             | Test               | Drive                  |                        | SPT 'N'         |         | Unco           | rrecte         | SP1            | г         |
|-------------------|------------|-----------|----------|---------|---------------------|--------------------|-----------------------------|--------------------|------------------------|------------------------|-----------------|---------|----------------|----------------|----------------|-----------|
| noie              | m bgl      | m OD      | Type     | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b> (mm) | <b>0-75</b><br>(mm)         | <b>75-150</b> (mm) | <b>150-225</b><br>(mm) | <b>225-300</b><br>(mm) | Value           | 10      | 20             | 'N'<br>30      | 40             | 50        |
| BH72403           | 1.20       | 70.09     | s        | -       | 6                   | 8                  | 8                           | 10                 | 7                      | 7                      | 32              |         |                | *              | 1              |           |
| BH72403           | 2.20       | 69.09     | s        | -       | 2                   | 3                  | 3                           | 4                  | 5                      | 5                      | 17              |         | *              |                | 1              |           |
| BH72403           | 3.30       | 67.99     | С        | -       | 2                   | 1                  | 2                           | 2                  | 2                      | 2                      | 8               | *       |                |                | 1              |           |
| BH72403           | 4.30       | 66.99     | С        | -       | 3                   | 4                  | 4                           | 3                  | 2                      | 4                      | 13              |         | *              | <br> <br> <br> | <br> <br> <br> |           |
| BH72403           | 5.55       | 65.74     | С        | -       | -                   | -                  | 1                           | 2                  | 3                      | 3                      | 9               | *       | <br> <br> <br> | <br> <br> <br> |                |           |
| BH72403           | 7.05       | 64.24     | s        | -       | 2                   | 1                  | 1                           | 2                  | 2                      | 2                      | 7               | *       | <br>           |                | <br> <br>      |           |
| BH72403           | 8.60       | 62.69     | s        | -       | 1                   | 2                  | 1                           | 2                  | 2                      | 1                      | 6               | *       | <br> <br>      | <br> <br>      | 1              |           |
| BH72403           | 10.10      | 61.19     | S        | -       | 1                   | 1                  | 3                           | 2                  | 2                      | 2                      | 9               | *       |                |                | <br> <br>      |           |
| BH72403           | 11.55      | 59.74     | S        | -       | 3                   | 2                  | 2                           | 1                  | 2                      | 2                      | 7               | *       | <br> <br>      |                | 1              |           |
| BH72403           | 13.05      | 58.24     | S        | -       | 7                   | 8                  | 7                           | 8                  | 8                      | 6                      | 29              |         | 1              | *              | i              |           |
| BH72403           | 14.65      | 56.64     | s        | -       | 3                   | 3                  | 5                           | 4                  | 6                      | 5                      | 20              |         | *              |                | <br> <br>      | <br> <br> |
| BH72403           | 15.30      | 55.99     | s        | -       | 3                   | 5                  | 6                           | 9                  | 9                      | 9                      | 33              |         | <br> <br>      | *              | i<br>i         |           |
| Driller           |            |           | Crain    | Boherts |                     |                    | Bemar                       |                    |                        |                        |                 |         |                |                |                |           |
| Hammer No. AR2475 |            |           |          |         |                     |                    | Equipm                      | ient check         | ed and ca              | alibration c           | arried out in a | accorda | ince wi        | th BS I        | EN IS          | 0         |
| Energy Ratio      | , Er (%)   |           | 76.00    |         |                     |                    |                             | 5.2000             |                        |                        |                 |         |                |                |                |           |
| Calibration D     | ate        |           | 30/09    | /2019   |                     |                    |                             |                    |                        |                        |                 |         |                |                |                |           |
| -/- Blows/p       | enetratior | n (mm) at | fter sea | ting    |                     | S - S              | L<br>tandard F<br>PT with c | Penetration        | n Test (SF             | PT)                    | G               | GQ      | אנ             |                |                | <u></u>   |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole           | Depth      | Level     | Type                                    | SWP     | Seating             | g Drive               |                     | Test               | Drive                  |                        | SPT 'N' | Und  | orrecte     | ed SPT         |       |
|----------------|------------|-----------|---|---------|---------------------|-----------------------|---------------------|--------------------|------------------------|------------------------|---------|------|-------------|----------------|-------|
|                | m bgl      | m OD      | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm) | <b>75-150</b> (mm) | <b>150-225</b><br>(mm) | <b>225-300</b><br>(mm) | value   | 10 2 | 'N'<br>0 30 | 40             | 50    |
| BH72403        | 16.00      | 55.29     | s                                       | -       | 4                   | 4                     | 7                   | 9                  | 11                     | 11                     | 38      |      | 1           | *              |       |
| BH72403        | 17.50      | 53.79     | s                                       | -       | 3                   | 12                    | 15                  | 14                 | 17                     | 20                     | 66      |      | <br> <br>   | 1              | - A   |
| BH72403        | 19.00      | 52.29     | s                                       | -       | 17                  | 18                    | 20                  | 27                 | 31                     | 21/20                  | 99/245  | 1    |             | 1              | - A - |
| BH72403        | 20.00      | 51.29     | s                                       | -       | 15                  | 19                    | 19                  | 24                 | 29                     | 38/25                  | 110/250 |      |             | <br> <br> <br> | A _   |
| Driller        |            |           | Stuart                                  | Provide |                     |                       | Bemar               |                    |                        |                        |         |      |             |                |       |
| Hammer No.     |            |           |   | Equipm  | ent check           | ked and ca            | libration c         | arried out in a    | accordance             | with BS                | EN IS   | 0    |             |                |       |
| Energy Ratio   |            |           |   | 224/6-3 | 5.2005              |                       |                     |                    |                        |                        |         |      |             |                |       |
| Calibration Da | ate        |           | 09/05                                   | /2019   |                     |                       |                     |                    |                        |                        |         |      |             |                |       |
| -/- Blows/pe   | enetratior | n (mm) at | fter sea                                | ting    |                     | S - S<br>C - S        | tandard P           | enetratior         | n Test (SP             | PT)                    | G       | ഹാ   | <u></u> Сŀ  | -1/1           | 65    |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

AGS Printed: 29/01/2020 Page 5

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole          | Depth                  | Level                   | Type                                    | SWP     | Seating             | g Drive               |                        | Test                    | Drive           |                        | SPT 'N'         |          | U         | nco              | rrecte    | ed SF | т         |    |
|---------------|------------------------|-------------------------|---|---------|---------------------|-----------------------|------------------------|-------------------------|-----------------|------------------------|-----------------|----------|-----------|------------------|-----------|-------|-----------|----|
|               | m bgl                  | m OD                    | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b> (mm)       | <b>75-150</b> (mm)      | 150-225<br>(mm) | <b>225-300</b><br>(mm) | value           | <u> </u> | 10        | 20               | 'N'<br>30 | 40    | 5         | 60 |
| BH72404       | 1.20                   | 70.04                   | s                                       | -       | 1                   | 2                     | 1                      | 3                       | 3               | 4                      | 11              |          | *         |                  |           |       |           |    |
| BH72404       | 2.20                   | 69.04                   | s                                       | -       | 1                   | 1                     | 1                      | 1                       | 2               | 1                      | 5               | *        | 1         | 1                | <br> <br> | 1     |           |    |
| BH72404       | 3.20                   | 68.04                   | s                                       | -       | 2                   | 3                     | 3                      | 6                       | 5               | 4                      | 18              |          |           | r ¦              |           | 1     |           |    |
| BH72404       | 4.30                   | 66.94                   | С                                       | -       | 2                   | 2                     | 3                      | 3                       | 3               | 5                      | 14              |          | *         | -<br>            | <br>      |       |           |    |
| BH72404       | 5.55                   | 65.69                   | S                                       | -       | -                   | 1                     | 1                      | 1                       | 1               | 1                      | 4               | *        | <br> <br> |                  |           | 1     |           |    |
| BH72404       | 7.05                   | 64.19                   | S                                       | -       | 2                   | 1                     | 1                      | 2                       | 1               | 1                      | 5               | *        | <br> <br> |                  | <br> <br> |       |           |    |
| BH72404       | 8.50                   | 62.74                   | S                                       | -       | 1                   | -                     | 1                      | 2                       | 2               | 1                      | 6               | *        | 1         |                  |           |       |           |    |
| BH72404       | 10.05                  | 61.19                   | S                                       | -       | 1                   | 2                     | 1                      | 2                       | 2               | 3                      | 8               | *        |           | 1                |           | 1     |           |    |
| BH72404       | 11.55                  | 59.69                   | S                                       | -       | 1                   | 2                     | 1                      | 3                       | 3               | 3                      | 10              |          | *         |                  | 1         | Ì     |           |    |
| BH72404       | 13.20                  | 58.04                   | S                                       | -       | 2                   | 2                     | 2                      | 3                       | 3               | 4                      | 12              |          | *         | 1                | 1         | 1     |           |    |
| BH72404       | 14.60                  | 56.64                   | S                                       | -       | 2                   | 2                     | 2                      | 3                       | 3               | 6                      | 14              |          | *         | 1                | 1         | 1     |           |    |
| BH72404       | 16.10                  | 55.14                   | S                                       | -       | 7                   | 7                     | 6                      | 6                       | 7               | 10                     | 29              |          | <br> <br> | -<br>-<br>-<br>- | *         | 1     | <br> <br> |    |
| BH72404       | 17.60                  | 53.64                   | S                                       | -       | 7                   | 9                     | 7                      | 8                       | 12              | 14                     | 41              |          | <br> <br> |                  |           | *     |           |    |
| BH72404       | 19.40                  | 51.84                   | S                                       | -       | 9                   | 11                    | 11                     | 11                      | 11              | 12                     | 45              |          | <br> <br> |                  | <br> <br> |       | *         |    |
| BH72404       | 20.95                  | 50.29                   | S                                       | -       | 11                  | 11                    | 14                     | 16                      | 20/70           |                        | 50/220          |          | 1         |                  |           | 1     | +         | ٨  |
|               |                        |                         |   |         |                     |                       |                        |                         |                 |                        |                 |          |           |                  |           |       |           |    |
| Driller       |                        |                         | Craig                                   | Roberts |                     |                       | Remar                  | <b>ks</b><br>Ient check | ed and ca       | alibration c           | arried out in a | accor    | danc      | e wit            | h BS      | EN I  | SO        |    |
| Hammer No.    |                        |                         | AR24                                    | 75      |                     |                       | 22476-3                | 3: 2005                 |                 |                        |                 |          |           |                  |           |       |           |    |
| Energy Ratio  | , Er (%)               |                         | 76.00                                   |         |                     |                       |                        |                         |                 |                        |                 |          |           |                  |           |       |           |    |
| Calibration D | ate                    |                         | 30/09                                   | /2019   |                     |                       |                        |                         |                 |                        |                 |          |           |                  |           |       |           |    |
| -/- Blows/pe  | enetration<br>ws/penet | n (mm) at<br>tration (m | iter sea<br>im)                         | ting    |                     | S - S<br>C - S        | tandard F<br>PT with c | enetratior              | n Test (SF      | PT)                    | G               | e        | ת         | G                | CH        | -1    |           | :5 |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

AGS Printed: 29/01/2020 Page 6

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole          | Depth      | Level     | Type                                    | SWP     | Seating             | g Drive               |                     | Test               | Drive                  |                        | SPT 'N'         |       | U           | ncor      | recte     | d SP        | г         |   |
|---------------|------------|-----------|---|---------|---------------------|-----------------------|---------------------|--------------------|------------------------|------------------------|-----------------|-------|-------------|-----------|-----------|-------------|-----------|---|
|               | m bgl      | m OD      | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm) | <b>75-150</b> (mm) | <b>150-225</b><br>(mm) | <b>225-300</b><br>(mm) | value           | 1     | 10          | 20        | 'N'<br>30 | 40          | 50        | ) |
| BH72405       | 1.20       | 71.10     | s                                       | -       | 1                   | 2                     | 2                   | 3                  | 2                      | 3                      | 10              |       | *           |           |           |             |           |   |
| BH72405       | 2.20       | 70.10     | S                                       | -       | 3                   | 6                     | 7                   | 9                  | 9                      | 9                      | 34              |       | 1           | 1         | *         | 1           | 1         |   |
| BH72405       | 3.00       | 69.30     | S                                       | -       | 5                   | 6                     | 6                   | 6                  | 4                      | 2                      | 18              |       | 1           | *         | 1         | 1           | 1         |   |
| BH72405       | 4.00       | 68.30     | S                                       | -       | 1                   | 1                     | 2                   | 3                  | 4                      | 6                      | 15              |       | · *         | 1         | 1         | i<br>1      | <br> <br> |   |
| BH72405       | 4.80       | 67.50     | С                                       | -       | 1                   | 1                     | 3                   | 2                  | 2                      | 3                      | 10              |       | ⊢<br>★<br>⊢ | 1         | 1         | 1           |           |   |
| BH72405       | 6.00       | 66.30     | С                                       | -       | 1                   | 1                     | 1                   | 1                  | 2                      | 2                      | 6               | *     | <br> <br>   | <br> <br> |           | 1           |           |   |
| BH72405       | 7.50       | 64.80     | S                                       | -       | 1                   | 1                     | 1                   | 1                  | 1                      | 1                      | 4               | *     | 1           |           |           | I<br>I<br>I |           |   |
| BH72405       | 9.00       | 63.30     | S                                       | -       | 1                   | 1                     | 1                   | 1                  | 2                      | 1                      | 5               | *     | 1           | 1         |           | 1           |           |   |
| BH72405       | 10.50      | 61.80     | S                                       | -       | 1                   | 1                     | 1                   | 1                  | 1                      | 2                      | 5               | *     | <br> <br>   |           | 1         | i           |           |   |
| BH72405       | 12.00      | 60.30     | S                                       | -       | 2                   | 1                     | 4                   | 3                  | 4                      | 4                      | 15              |       | *           | 1         | 1         | I<br>I      | 1         |   |
| BH72405       | 13.50      | 58.80     | S                                       | -       | 3                   | 13                    | 7                   | 5                  | 4                      | 4                      | 20              |       | 1           | *         | 1         | 1           | 1         |   |
| BH72405       | 15.00      | 57.30     | S                                       | -       | 9                   | 6                     | 11                  | 10                 | 10                     | 15                     | 46              |       | <br> <br>   | 1         | 1         | 1           | <b>k</b>  |   |
| Driller       |            |           | David                                   | Cowline |                     |                       | Bemar               |                    |                        |                        |                 |       |             |           |           |             |           |   |
| Hammer No.    |            |           | AR19                                    | 62      |                     |                       | Equipm              | ent check          | ed and ca              | alibration c           | arried out in a | accor | danc        | e wit     | h BS      | EN IS       | 0         |   |
| Energy Ratio  | , Er (%)   |           | 66.00                                   |         |                     |                       |                     | . 2000             |                        |                        |                 |       |             |           |           |             |           |   |
| Calibration D | ate        |           | 31/10                                   | /2019   |                     |                       |                     |                    |                        |                        |                 |       |             |           |           |             |           |   |
| -/- Blows/pe  | enetratior | n (mm) af | iter sea                                | ting    |                     | S - S<br>C - S        | tandard P           | enetration         | n Test (SF             | PT)                    | G               |       | <u>ע</u>    |           | ~⊢        | N           |           |   |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole                 | Depth                  | Level     | Type     | SWP     | Seating             | g Drive               |                        | Test               | Drive           |                        | SPT 'N'         |        | Unc    | orrecte   | d SPT |       |
|----------------------|------------------------|-----------|----------|---------|---------------------|-----------------------|------------------------|--------------------|-----------------|------------------------|-----------------|--------|--------|-----------|-------|-------|
|                      | m bgl                  | m OD      | 1,966    | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm)    | <b>75-150</b> (mm) | 150-225<br>(mm) | <b>225-300</b><br>(mm) | Value           | 1(     | ) 20   | 'N'<br>30 | 40    | 50    |
| BH72405              | 16.50                  | 55.80     | s        | -       | 4                   | 6                     | 10                     | 15                 | 15              | 19                     | 59              |        |        |           |       | •     |
| BH72405              | 17.50                  | 54.80     | s        | -       | 5                   | 7                     | 14                     | 15                 | 16              | 16                     | 61              |        | 1      |           |       | - ^ - |
| BH72405              | 19.00                  | 53.30     | s        | -       | 12                  | 17                    | 36                     | 36                 | 20/28           |                        | 92/178          |        | 1      |           | 1     | - A - |
| BH72405              | 20.00                  | 52.30     | s        | -       | 15                  | 19                    | 28                     | 32                 |                 |                        | 60/150          |        |        |           | 1     | - A   |
|                      |                        |           |          |         |                     |                       |                        |                    |                 |                        |                 |        |        |           |       |       |
| Uriller<br>Hammor No |                        |           | Stuart   | Proudio | ICK                 |                       | Equipm                 | ent check          | ed and ca       | alibration c           | arried out in a | accord | ance v | vith BS   | EN IS | 0     |
| Energy Ratio         | , Er (%)               |           | 57.00    |         |                     |                       | 22476-3                | 3: 2005            |                 |                        |                 |        |        |           |       |       |
| Calibration D        | ate                    |           | 09/05    | /2019   |                     |                       |                        |                    |                 |                        |                 |        |        |           |       |       |
| -/- Blows/pe         | enetratior<br>ws/penet | n (mm) at | fter sea | ting    |                     | S - S<br>C - S        | tandard P<br>PT with c | enetratior         | n Test (SP      | PT)                    | G               | ec     | ກັດ    | £⊦        | -NI   | C5    |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole                           | Depth                  | Level                   |   | SWP     | Seating             | g Drive               |                        | Test                    | Drive           |                        | SPT 'N'         | Uncor                | rected SPT      |
|--------------------------------|------------------------|-------------------------|---|---------|---------------------|-----------------------|------------------------|-------------------------|-----------------|------------------------|-----------------|----------------------|-----------------|
|                                | m bgl                  | m OD                    | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm)    | <b>75-150</b> (mm)      | 150-225<br>(mm) | <b>225-300</b><br>(mm) | value           | 10 20                | 'N'<br>30 40 50 |
| BH72406                        | 1.30                   | 71.36                   | s                                       | -       | 5                   | 5                     | 6                      | 6                       | 10              | 18                     | 40              |                      | *               |
| BH72406                        | 2.30                   | 70.36                   | S                                       | -       | 4                   | 6                     | 6                      | 8                       | 7               | 8                      | 29              |                      | *               |
| BH72406                        | 3.30                   | 69.36                   | S                                       | -       | 4                   | 5                     | 4                      | 4                       | 3               | 3                      | 14              | *                    |                 |
| BH72406                        | 4.30                   | 68.36                   | S                                       | -       | 1                   | 1                     | 1                      | 2                       | 1               | 1                      | 5               | *                    |                 |
| BH72406                        | 5.20                   | 67.46                   | С                                       | -       | 1                   | 1                     | 2                      | 3                       | 2               | 2                      | 9               | *                    |                 |
| BH72406                        | 6.70                   | 65.96                   | С                                       | -       | 2                   | 3                     | 3                      | 3                       | 4               | 4                      | 14              | · · · ·              |                 |
| BH72406                        | 8.00                   | 64.66                   | S                                       | -       | 1                   | 1                     | 1                      | 2                       | 1               | 1                      | 5               | *                    |                 |
| BH72406                        | 9.50                   | 63.16                   | S                                       | -       | 1                   | 1                     | 2                      | 2                       | 2               | 2                      | 8               | *                    |                 |
| BH72406                        | 10.50                  | 62.16                   | S                                       | -       | 2                   | 2                     | 1                      | 1                       | 1               | 1                      | 4               | *                    |                 |
| BH72406                        | 12.00                  | 60.66                   | S                                       | -       | 1                   | 2                     | 2                      | 2                       | 1               | 1                      | 6               | *                    |                 |
| BH72406                        | 13.50                  | 59.16                   | S                                       | -       | 4                   | 2                     | 3                      | 3                       | 2               | 2                      | 10              | *                    |                 |
| BH72406                        | 15.00                  | 57.66                   | S                                       | -       | 2                   | 1                     | 1                      | 1                       | 2               | 3                      | 7               | *                    |                 |
| BH72406                        | 16.50                  | 56.16                   | S                                       | -       | 3                   | 3                     | 5                      | 3                       | 3               | 3                      | 14              | <br>  <b>*</b>  <br> |                 |
| BH72406                        | 18.00                  | 54.66                   | S                                       | -       | 2                   | 4                     | 6                      | 5                       | 5               | 8                      | 24              | *                    |                 |
| BH72406                        | 19.00                  | 53.66                   | S                                       | -       | 3                   | 4                     | 5                      | 6                       | 12              | 10                     | 33              |                      | *               |
| BH72406                        | 20.00                  | 52.66                   | S                                       | -       | 3                   | 8                     | 8                      | 7                       | 12              | 15                     | 42              |                      | *               |
|                                |                        |                         |   |         |                     |                       |                        |                         |                 |                        |                 |                      |                 |
| Driller                        |                        |                         | David                                   | Cowling |                     |                       | Remarl<br>Equipm       | <b>ks</b><br>Ient check | ed and ca       | alibration c           | arried out in a | accordance with      | n BS EN ISO     |
| Hammer No.                     |                        |                         | AR19                                    | 62      |                     |                       | 22476-3                | 3: 2005                 |                 |                        |                 |                      |                 |
| Energy Ratio                   | , Er (%)               |                         | 66.00                                   |         |                     |                       |                        |                         |                 |                        |                 |                      |                 |
| Calibration D                  | ate                    |                         | 31/10                                   | /2019   |                     |                       |                        |                         |                 |                        |                 |                      |                 |
| -/- Blows/pe<br>-*/- Total blo | enetratior<br>ws/penet | n (mm) af<br>tration (m | iter seat<br>im)                        | ting    |                     | S - S<br>C - S        | tandard P<br>PT with c | enetratior              | n Test (SF      | PT)                    | G               | തേര                  | CHNICS          |

SWP Penetration under own weight (mm)

- L Split Spoon with liner used

AGS Printed: 29/01/2020 Page 9

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole          | Denth                  | l evel                  | Type          | SWP     | Seating             | g Drive               |                        | Test               | Drive                  |                        | SPT 'N'         |        | Unc     | orrec          | ted S     | SPT            |           |
|---------------|------------------------|-------------------------|---------------|---------|---------------------|-----------------------|------------------------|--------------------|------------------------|------------------------|-----------------|--------|---------|----------------|-----------|----------------|-----------|
| noie          | m bgl                  | m OD                    | Type          | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm)    | <b>75-150</b> (mm) | <b>150-225</b><br>(mm) | <b>225-300</b><br>(mm) | Value           | 1      | 0 20    | א'<br>3 (      | l'<br>0 4 | 10             | 50        |
| BH72501       | 1.20                   | 70.09                   | s             | -       | 5                   | 6                     | 8                      | 10                 | 9                      | 10                     | 37              |        |         |                | *         | <br> <br> <br> |           |
| BH72501       | 2.20                   | 69.09                   | s             | -       | 1                   | 3                     | 3                      | 2                  | 3                      | 5                      | 13              |        | *       | 1              |           | <br> <br>      |           |
| BH72501       | 3.20                   | 68.09                   | s             | -       | 2                   | 3                     | 4                      | 4                  | 5                      | 4                      | 17              |        | *       |                |           | <br> <br> <br> | <br> <br> |
| BH72501       | 4.30                   | 66.99                   | С             | -       | 1                   | 1                     | 1                      | 2                  | 1                      | 2                      | 6               | *      |         | 1              |           | <br> <br>      |           |
| BH72501       | 5.35                   | 65.94                   | S             | -       | -                   | 1                     | -                      | -                  | -                      | 1                      | 1               | *      |         | <br> <br> <br> |           | <br> <br> <br> |           |
| BH72501       | 6.90                   | 64.39                   | S             | -       | 1                   | 1                     | 1                      | -                  | 1                      | 1                      | 3               | *      |         |                |           | <br> <br>      | -         |
| BH72501       | 8.45                   | 62.84                   | S             | -       | 1                   | -                     | 1                      | 1                  | 1                      | 2                      | 5               | *      |         |                |           | <br> <br>      |           |
| BH72501       | 10.05                  | 61.24                   | S             | -       | 2                   | 3                     | -                      | 1                  | 1                      | 1                      | 3               | *      |         |                |           | <br> <br>      | -         |
| BH72501       | 11.50                  | 59.79                   | S             | -       | 1                   | 1                     | 1                      | 2                  | -                      | 1                      | 4               | *      |         | 1              |           | <br> <br>      | -         |
| BH72501       | 13.25                  | 58.04                   | S             | -       | 4                   | 2                     | 4                      | 5                  | 5                      | 5                      | 19              |        | ¦ *     |                |           | <br> <br>      |           |
| BH72501       | 14.75                  | 56.54                   | S             | -       | 5                   | 8                     | 8                      | 9                  | 6                      | 8                      | 31              |        |         | *              |           | <br> <br>      |           |
| BH72501       | 15.55                  | 55.74                   | S             | -       | 4                   | 5                     | 5                      | 8                  | 8                      | 10                     | 31              |        |         | *              |           | <br> <br>      |           |
| Driller       |                        |                         | Craig         | Pohorto |                     |                       | Bomar                  |                    |                        |                        |                 |        |         |                |           |                |           |
| Hammer No     |                        |                         | AR24          | 75      |                     |                       | Equipm                 | ient check         | ed and ca              | alibration c           | arried out in a | accord | dance v | vith B         | S EN      | IISC           | )         |
| Energy Ratio  | , Er (%)               |                         | 76.00         |         |                     |                       | 224/6-3                | 3.2005             |                        |                        |                 |        |         |                |           |                |           |
| Calibration D | ate                    |                         | 30/09         | /2019   |                     |                       |                        |                    |                        |                        |                 |        |         |                |           |                |           |
|               |                        |                         | ļ             |         |                     |                       |                        |                    | <b>T</b>               |                        |                 |        |         |                |           |                |           |
| -/- Blows/pe  | enetratior<br>ws/penet | n (mm) af<br>tration (m | ter sea<br>m) | ting    |                     | S - S<br>C - S        | tandard P<br>PT with c | enetratior         | n Test (SF             | ΥT)                    | G               | G      | ກັ      | C              | h         |                | CS        |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

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AGS Printed: 29/01/2020 Page 10

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole          | Depth      | امريم ا   | Type     | SWP       | Seating             | g Drive               |                     | Test                 | Drive           |                        | SPT 'N'         |           | Uncor   | rected    | SPT       |                      |
|---------------|------------|-----------|----------|-----------|---------------------|-----------------------|---------------------|----------------------|-----------------|------------------------|-----------------|-----------|---------|-----------|-----------|----------------------|
| TOTE          | m bgl      | m OD      | Type     | (mm)      | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm) | <b>75-150</b> (mm)   | 150-225<br>(mm) | <b>225-300</b><br>(mm) | Value           | 10        | 20      | 'N'<br>30 | 40        | 50                   |
| BH72501       | 18.00      | 53.29     | s        | -         | 6                   | 6                     | 12                  | 15                   | 32              | 22                     | 81              |           | 1       | <br> <br> | l<br>l    | <b>v</b> <sup></sup> |
| BH72501       | 19.90      | 51.39     | s        | -         | 4                   | 7                     | 9                   | 13                   | 22              | 30                     | 74              |           |         | 1         | <br> <br> | - A                  |
| BH72501       | 21.40      | 49.89     | s        | -         | 4                   | 5                     | 7                   | 11                   | 22              | 29                     | 69              | 1         | 1       |           |           | - A -                |
| BH72501       | 22.90      | 48.39     | S        | -         | 1                   | 4                     | 10                  | 11                   | 12              | 17                     | 50              |           |         | <br> <br> |           | *                    |
| BH72501       | 24.40      | 46.89     | s        | -         | 5                   | 7                     | 12                  | 13                   | 13              | 19                     | 57              |           |         |           |           | - <b>^</b> _         |
| BH72501       | 25.90      | 45.39     | s        | -         | 8                   | 5                     | 17                  | 19                   | 27              | 16                     | 79              |           |         | <br> <br> | <br> <br> | >                    |
| BH72501       | 27.40      | 43.89     | s        | -         | 5                   | 13                    | 20                  | 17                   | 16              | 25                     | 78              |           |         |           | <br> <br> | >                    |
| BH72501       | 28.90      | 42.39     | s        | -         | 19                  | 15                    | 15                  | 25                   | 20              | 21                     | 81              |           |         |           | <br> <br> | ~                    |
| BH72501       | 30.40      | 40.89     | s        | -         | 8                   | 38                    | 24                  | 50                   | 26/30           |                        | 100/180         |           |         | <br> <br> | <br> <br> | - <b>^</b> -         |
| Driller       |            |           | Aarroi   | n William | ISON                |                       | Remar               |                      |                 |                        |                 |           |         |           |           |                      |
| Hammer No.    |            |           | SPT2     |           |                     |                       | Equipm<br>22476-:   | ent check<br>3: 2005 | ed and ca       | alibration c           | arried out in a | accordar  | nce wit | h BS E    | -N ISC    | J                    |
| Energy Ratio  | , Er (%)   |           | 53.00    |           |                     |                       |                     |                      |                 |                        |                 |           |         |           |           |                      |
| Calibration D | ate        |           | 09/05    | /2019     |                     |                       |                     |                      |                 |                        |                 |           |         |           |           |                      |
| -/- Blows/pe  | enetration | n (mm) af | fter sea | ting      |                     | S - S<br>C - S        | tandard P           | enetration           | Test (SF        | PT)                    | G               | <u>co</u> |         | ~⊢        |           | <u>^</u>             |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

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Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole          | Depth      | Level     | Type                                    | SWP     | Seating             | g Drive               |                     | Test                  | Drive           |                        | SPT 'N'         |        | Unc        | orrec     | ted S     | PT  |           |
|---------------|------------|-----------|---|---------|---------------------|-----------------------|---------------------|-----------------------|-----------------|------------------------|-----------------|--------|------------|-----------|-----------|-----|-----------|
|               | m bgl      | m OD      | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | 150-225<br>(mm) | <b>225-300</b><br>(mm) | value           | 1      | 0 2        | יי<br>ס 3 | 0 4       | 0   | 50        |
| BH72502       | 1.20       | 70.27     | s                                       | -       | 3                   | 5                     | 5                   | 7                     | 8               | 12                     | 32              |        |            |           | *         |     |           |
| BH72502       | 2.20       | 69.27     | s                                       | -       | 5                   | 9                     | 8                   | 10                    | 10              | 11                     | 39              |        | 1          | 1         | *         |     | 1         |
| BH72502       | 3.20       | 68.27     | S                                       | -       | 1                   | 3                     | 3                   | 8                     | 9               | 8                      | 28              |        | <br> <br>  | *         |           |     | <br> <br> |
| BH72502       | 4.30       | 67.17     | С                                       | -       | 1                   | 3                     | 4                   | 3                     | 4               | 3                      | 14              |        | *          |           | 1         |     | <br> <br> |
| BH72502       | 5.30       | 66.17     | S                                       | -       | 1                   | -                     | -                   | 1                     | -               | -                      | 1               | *      |            | <br> <br> | <br> <br> |     | <br> <br> |
| BH72502       | 7.00       | 64.47     | S                                       | -       | 1                   | 1                     | 2                   | 2                     | 2               | 3                      | 9               | *      | 1          | <br> <br> | <br> <br> |     | <br> <br> |
| BH72502       | 8.50       | 62.97     | s                                       | -       | 1                   | 1                     | 1                   | 1                     | 2               | 2                      | 6               | *      |            |           | 1         |     | 1         |
| BH72502       | 10.00      | 61.47     | S                                       | -       | 2                   | 1                     | 1                   | 2                     | 2               | 2                      | 7               | *      |            |           |           |     | 1         |
| BH72502       | 11.50      | 59.97     | S                                       | -       | 1                   | 1                     | 2                   | 1                     | 1               | 1                      | 5               | *      | ,<br> <br> | 1         | 1         |     | 1         |
| BH72502       | 13.00      | 58.47     | S                                       | -       | 1                   | 1                     | 5                   | 8                     | 6               | 6                      | 25              |        | <br> <br>  | *         |           |     | <br> <br> |
| BH72502       | 14.50      | 56.97     | S                                       | -       | 8                   | 9                     | 8                   | 6                     | 5               | 7                      | 26              |        | <br>       | *         | 1         |     | <br> <br> |
| Driller       |            |           | David                                   | Cowling |                     |                       | Remar               | \$                    |                 |                        |                 |        |            |           |           |     |           |
| Hammer No.    |            |           | AR19                                    | 62      |                     |                       | Equipm<br>22476-:   | ent check<br>3: 2005  | ed and ca       | alibration c           | arried out in a | accord | ance       | with B    | S EN      | ISO |           |
| Energy Ratio  | , Er (%)   |           | 66.00                                   |         |                     |                       |                     |                       |                 |                        |                 |        |            |           |           |     |           |
| Calibration D | ate        |           | 31/10                                   | /2019   |                     |                       |                     |                       |                 |                        |                 |        |            |           |           |     |           |
| -/- Blows/pe  | enetration | n (mm) af | iter sea                                | ting    |                     | S - S<br>C - S        | tandard P           | enetration            | n Test (SP      | PT)                    | G               | 2      | זת         | Y         |           |     | <u>ר</u>  |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Project No PC197708

Client HIGHWAYS ENGLAND

| Hole          | Depth                  | Level                   |   | SWP       | Seating             | g Drive               |                        | Test                  | Drive                  |                        | SPT 'N'         |          | Uncor   | rected    | SPT         |              |
|---------------|------------------------|-------------------------|---|-----------|---------------------|-----------------------|------------------------|-----------------------|------------------------|------------------------|-----------------|----------|---------|-----------|-------------|--------------|
|               | m bgl                  | m OD                    | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | (mm)      | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm)    | <b>75-150</b><br>(mm) | <b>150-225</b><br>(mm) | <b>225-300</b><br>(mm) | value           | 10       | 20      | 'N'<br>30 | 40          | 50           |
| BH72502       | 16.40                  | 55.07                   | S                                       | -         | 5                   | 8                     | 10                     | 11                    | 11                     | 16                     | 48              |          |         |           |             | *            |
| BH72502       | 17.90                  | 53.57                   | S                                       | -         | 10                  | 14                    | 34                     | 38                    | 28/40                  |                        | 100/190         |          |         | 1         | 1           | - A -        |
| BH72502       | 19.40                  | 52.07                   | С                                       | -         | 7                   | 27                    | 18                     | 30                    | 39                     | 18/5                   | 105/230         |          |         | <br> <br> |             | - A -        |
| BH72502       | 22.50                  | 48.97                   | С                                       | -         | 3                   | 12                    | 65                     | 35/5                  |                        |                        | 100/80          |          | 1       | 1<br>1    | i<br>I<br>I | - A-         |
| BH72502       | 24.00                  | 47.47                   | С                                       | -         | 7                   | 17                    | 52                     | 48/15                 |                        |                        | 100/90          |          | 1       |           |             | - <b>^</b> - |
| BH72502       | 25.50                  | 45.97                   | С                                       | -         | 10                  | 26                    | 100/70                 |                       |                        |                        | 100/70          |          |         | <br> <br> | <br> <br>   | >            |
| BH72502       | 27.00                  | 44.47                   | С                                       | -         | 12                  | 19                    | 62                     | 38/30                 |                        |                        | 100/105         |          |         | <br> <br> | <br> <br>   | >            |
| BH72502       | 28.50                  | 42.97                   | С                                       | -         | 11                  | 38                    | 100/60                 |                       |                        |                        | 100/60          |          | 1       |           | 1           | >            |
| BH72502       | 30.00                  | 41.47                   | С                                       | -         | 9                   | 25                    | 100/70                 |                       |                        |                        | 100/70          |          | 1       | 1         | 1           | -^           |
| Driller       |                        |                         | Aarror                                  | n William | ISON                |                       | Remark                 | s                     |                        |                        |                 |          |         |           |             |              |
| Hammer No.    |                        |                         | SPT2                                    |           |                     |                       | Equipm                 | ent check             | ed and ca              | libration c            | arried out in a | accordar | nce wit | h BS E    | EN ISO      | C            |
| Energy Ratio  | , Er (%)               |                         | 53.00                                   |           |                     |                       | 224/0-0                | . 2000                |                        |                        |                 |          |         |           |             |              |
| Calibration D | ate                    |                         | 09/05/                                  | /2019     |                     |                       |                        |                       |                        |                        |                 |          |         |           |             |              |
| -/- Blows/pe  | enetratior<br>ws/penet | n (mm) af<br>tration (m | iter seai                               | ting      |                     | S - S<br>C - S        | tandard P<br>PT with c | enetratior<br>one     | n Test (SP             | ΥT)                    | G               | eσ       | )G      |           |             | CS           |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Printed: 29/01/2020 Page 13

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Project No PC197708

Client HIGHWAYS ENGLAND

| Hole          | Depth      | Level     | Type                                    | SWP     | Seating             | g Drive               |                     | Test                  | Drive                  |                        | SPT 'N'         | Un         | corre        | cted S    | SPT |   |
|---------------|------------|-----------|---|---------|---------------------|-----------------------|---------------------|-----------------------|------------------------|------------------------|-----------------|------------|--------------|-----------|-----|---|
|               | m bgl      | m OD      | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | (mm)    | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm) | <b>75-150</b> (mm)    | <b>150-225</b><br>(mm) | <b>225-300</b><br>(mm) | Value           | 10         | 20 :         | N'<br>304 | 0 5 | 0 |
| BH72504       | 2.05       | 68.71     | s                                       | -       | 4                   | 5                     | 5                   | 7                     | 6                      | 6                      | 24              |            | *            | 1         |     |   |
| BH72504       | 3.10       | 67.66     | С                                       | -       | 1                   | 2                     | 2                   | 1                     | 2                      | 2                      | 7               | *          | 1            | 1         |     |   |
| BH72504       | 4.10       | 66.66     | С                                       | -       | 4                   | 3                     | 3                   | 3                     | 3                      | 3                      | 12              | *          | 1            | <br> <br> |     |   |
| BH72504       | 5.40       | 65.36     | S                                       | -       | 1                   | 1                     | 1                   | 1                     | 2                      | 2                      | 6               | *          | <br> <br>    | 1         |     |   |
| BH72504       | 7.10       | 63.66     | S                                       | -       | 1                   | 1                     | 1                   | 2                     | 1                      | 2                      | 6               | *          |              | <br> <br> |     |   |
| BH72504       | 8.55       | 62.21     | S                                       | -       | 1                   | 1                     | 1                   | 2                     | 3                      | 5                      | 11              | *          |              | <br> <br> |     |   |
| BH72504       | 9.80       | 60.96     | S                                       | -       | 1                   | 2                     | 1                   | 1                     | 1                      | 1                      | 4               | *          |              | 1         |     |   |
| BH72504       | 11.55      | 59.21     | S                                       | -       | 3                   | 2                     | 3                   | 3                     | 2                      | 3                      | 11              | *          |              |           |     |   |
| BH72504       | 13.05      | 57.71     | S                                       | -       | 3                   | 2                     | 2                   | 2                     | 5                      | 7                      | 16              | *          | 1            |           |     |   |
| Driller       |            |           | Craig                                   | Roberts |                     |                       | Remar               | ks                    |                        |                        |                 |            |              |           | 021 |   |
| Hammer No.    |            |           | AR24                                    | 75      |                     |                       | Equipm<br>22476-:   | ient check<br>3: 2005 | ed and ca              | alibration c           | arried out in a | accordance | with I       | 3S EN     | ISO |   |
| Energy Ratio  | , Er (%)   |           | 76.00                                   |         |                     |                       |                     |                       |                        |                        |                 |            |              |           |     |   |
| Calibration D | ate        |           | 30/09                                   | /2019   |                     |                       |                     |                       |                        |                        |                 |            |              |           |     |   |
| -/- Blows/pe  | enetration | n (mm) at | ter sea                                 | ting    |                     | S - S<br>C - S        | tandard P           | enetration            | n Test (SP             | PT)                    | G               | ഹാ         | $\mathbf{r}$ | Ē         |     | ۲ |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Geotechnics

Printed: 29/01/2020 Page 14

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

**Project No** PC197708

Client HIGHWAYS ENGLAND

| Hole          | Depth                  | Level     | Type      | SWP       | Seating             | g Drive               |                             | Test                  | Drive                  |                        | SPT 'N'         |          | Uncor     | rected    | I SPT     |               |
|---------------|------------------------|-----------|-----------|-----------|---------------------|-----------------------|-----------------------------|-----------------------|------------------------|------------------------|-----------------|----------|-----------|-----------|-----------|---------------|
|               | m bgl                  | m OD      | 1.160     | (mm)      | <b>0-75</b><br>(mm) | <b>75-150</b><br>(mm) | <b>0-75</b><br>(mm)         | <b>75-150</b><br>(mm) | <b>150-225</b><br>(mm) | <b>225-300</b><br>(mm) | Value           | 10       | 20        | 'N'<br>30 | 40        | 50            |
| BH72504       | 15.00                  | 55.76     | s         | -         | 5                   | 6                     | 6                           | 11                    | 16                     | 14                     | 47              |          |           | 1         | <br> <br> | *             |
| BH72504       | 16.70                  | 54.06     | S         | -         | 5                   | 3                     | 5                           | 11                    | 13                     | 19                     | 48              |          | 1         | 1         | 1         | *             |
| BH72504       | 18.20                  | 52.56     | S         | -         | 3                   | 5                     | 8                           | 14                    | 13                     | 9                      | 44              | 1        |           | <br> <br> | *         |               |
| BH72504       | 19.70                  | 51.06     | S         | -         | 6                   | 5                     | 22                          | 24                    | 33                     | 17                     | 96              |          |           | <br> <br> | <br> <br> | - A-          |
| BH72504       | 21.20                  | 49.56     | S         | -         | 12                  | 14                    | 25                          | 20                    | 24                     | 23                     | 92              |          |           |           | 1         | - <b>&gt;</b> |
| BH72504       | 22.70                  | 48.06     | S         | -         | 9                   | 19                    | 20                          | 24                    | 40                     | 15/70                  | 99/295          |          |           | <br> <br> | 1         | >             |
| BH72504       | 24.20                  | 46.56     | S         | -         | 5                   | 13                    | 59                          | 41/25                 |                        |                        | 100/100         |          |           |           | 1         | >             |
| BH72504       | 27.20                  | 43.56     | С         | -         | 1                   | 3                     | 23                          | 46                    | 31/30                  |                        | 100/180         | 1        | 1         |           | 1         | ~             |
| BH72504       | 28.70                  | 42.06     | С         | -         | 46                  | 4/73                  | 100/60                      |                       |                        |                        | 100/60          | 1        | 1         |           | 1         | - <b>^</b> -  |
| BH72504       | 30.20                  | 40.56     | С         | -         | 45                  | 5/5                   | 63                          | 33/20                 |                        |                        | 96/95           |          |           | <br> <br> |           | - A -         |
| Driller       |                        |           | Aarror    | n William | ISON                |                       | Remarl                      | (5                    |                        |                        |                 |          |           |           |           |               |
| Hammer No.    |                        |           | SPT2      |           |                     |                       | Equipm                      | ent check             | ed and ca              | alibration c           | arried out in a | accordar | nce wit   | h BS E    | EN IS     | С             |
| Energy Ratio  | , Er (%)               |           | 53.00     |           |                     |                       | 22410-0                     | 5. 2003               |                        |                        |                 |          |           |           |           |               |
| Calibration D | ate                    |           | 09/05/    | /2019     |                     |                       |                             |                       |                        |                        |                 |          |           |           |           |               |
| -/- Blows/pe  | enetratior<br>ws/penet | n (mm) af | iter seai | ting      |                     | S - S<br>C - S        | L<br>tandard P<br>PT with c | enetratior            | n Test (SP             | PT)                    | G               | eσ       | <b>IC</b> |           | N         | CS            |

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72402 12.60-14.10m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72403 16.00-19.00m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72403 19.00-20.00m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72405 16.50-17.50m


Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72405 17.50-20.00m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72501 21.40-22.90m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72501 22.90-24.40m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72501 24.40-25.90m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72501 25.90-27.40m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72501 27.40-28.90m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72501 28.90-30.40m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 15.00-16.40m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 16.40-17.90m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 17.90-19.40m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 19.40-21.00m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 21.00-22.50m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 22.50-24.00m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 24.00-25.50m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 25.50-27.00m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 27.00-28.50m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72502 28.50-30.00m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 15.00-16.70m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 16.70-18.20m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 18.20-19.70m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 19.70-21.20m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 21.20-22.70m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 22.70-24.20m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 24.20-25.70m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 25.70-27.20m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 27.20-28.70m



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



BH72504 28.70-30.20m



# **APPENDIX 5**

# Window Sample Borehole Records

#### DATA SHEET - Symbols and Abbreviations used on Records

| DATA         | A SHEET - Symbols a  | nd Abbreviations used on Records |             |                                     |   |  |  |  |  |  |  |  |
|--------------|--|----------------------------------|-------------|-------------------------------------|---|--|--|--|--|--|--|--|
| Sample       | e Types  | Groundwater                      |             | Strata, Continued                   |   |  |  |  |  |  |  |  |
| В            | Bulk disturbed sample  | Water Strike                     | $\nabla$    | Mudstone                            |   |  |  |  |  |  |  |  |
| BLK          | Block sample   | Depth Water Rose To              | T           |                                     |   |  |  |  |  |  |  |  |
| С            | Core sample  | -                                |             | Siltstono                           | *****                                   |  |  |  |  |  |  |  |
| D            | Small disturbed sample<br>(tub/jar)  | Instrumentation                  |             | Sitstone                            | * |  |  |  |  |  |  |  |
| Е            | Environmental test sample  |                                  | 55          | Metamorphic Rock                    | * * * * *                               |  |  |  |  |  |  |  |
| ES           | Environmental soil sample  | Seal                             |             | Fine Grained                        | ******                                  |  |  |  |  |  |  |  |
| EW           | Environmental water  |                                  | -           |                                     | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |  |  |  |  |  |  |  |
| G            | Gas sample   |                                  | i -         | Medium Grained                      | ~~~~                                    |  |  |  |  |  |  |  |
| L            | Liner sample   |                                  | -           |                                     | <u> </u>                                |  |  |  |  |  |  |  |
| LB           | Large bulk disturbed sample  | Filter                           | i e         | Coarse Grained                      | $\sim$                                  |  |  |  |  |  |  |  |
| Ρ            | Piston sample (PF - failed P sample)                                       |                                  | 2<br>1<br>1 | Igneous Rock                        |   |  |  |  |  |  |  |  |
| тw           | Thin walled push in sample   |                                  |             | Fine Grained                        | ~~~~~                                   |  |  |  |  |  |  |  |
| U            | Open Tube - 102mm<br>diameter with blows to<br>take sample, (UF - failed U | Seal                             |             | Medium Grained                      | +++++++++++++++++++++++++++++++++++++++ |  |  |  |  |  |  |  |
|              | sample)  | <b>-</b>                         |             |                                     | + + + +                                 |  |  |  |  |  |  |  |
| UI           | I hin wall open drive tube<br>sampler - 102mm diameter                     | Strata                           | Legend      | Coarse Grained                      |   |  |  |  |  |  |  |  |
|              | with blows to take sample.<br>(UTF - failed UT sample)                     | Made Ground<br>Granular          |             | <b>Backfill Materials</b>           |   |  |  |  |  |  |  |  |
| V            | Vial sample  |                                  |             |                                     | ×.                                      |  |  |  |  |  |  |  |
| W            | Water sample   | Made Ground                      |             | Arisings                            | 8                                       |  |  |  |  |  |  |  |
| #            | Sample Not Recovered   | Collesive                        |             |                                     | X                                       |  |  |  |  |  |  |  |
| Insitu T     | Festing / Properties   | Topsoil                          |             | Bentonite Seal                      |   |  |  |  |  |  |  |  |
| CBRP         | CBR using TRL probe  |                                  |             |                                     |   |  |  |  |  |  |  |  |
| CHP          | Constant Head<br>Permeability Test   | Cobbles and Boulders             |             | Concrete                            | •<br>•                                  |  |  |  |  |  |  |  |
| COND         | Electrical conductivity  |                                  | <u> </u>    |                                     | •<br>•                                  |  |  |  |  |  |  |  |
| тс           | Thermal Conductivity   | Gravel                           |             |                                     |   |  |  |  |  |  |  |  |
| TR           | Thermal Resistivity  |                                  | * * * *     | Fine Gravel Filter                  |   |  |  |  |  |  |  |  |
| HV           | Strength from Hand Vane  | Sand                             |             |                                     |   |  |  |  |  |  |  |  |
| ICBR         | CBR Test   |                                  |             | General Fill                        |   |  |  |  |  |  |  |  |
| IDEN         | Density Test   | Cil+                             | × ×         |                                     |   |  |  |  |  |  |  |  |
| IRES         | Resistivity Test   | Sit                              | × × × × × × |                                     |   |  |  |  |  |  |  |  |
| MEX          | CBR using Mexecone<br>Probe Test   |                                  | × × ×       | Gravel Filter                       |   |  |  |  |  |  |  |  |
| PKR          | Packer Permeability Test   | Clay                             |             |                                     | 7                                       |  |  |  |  |  |  |  |
| PLT          | Plate Load Test  |                                  |             | Grout                               |   |  |  |  |  |  |  |  |
| PP           | Strength from Pocket   | <b>D</b>                         |             |                                     |   |  |  |  |  |  |  |  |
| Temp         | Temperature  | Peat                             | Alle -      | Sand Filter                         | 0000                                    |  |  |  |  |  |  |  |
| VHP          | Variable Head Permeability   |                                  |             |                                     | 909<br>04 0                             |  |  |  |  |  |  |  |
| VN           | Strength from Insitu Vane  | Note: Composite soil typ         | es shown    | Tarmacadam                          |   |  |  |  |  |  |  |  |
| w%           | Water content  | by combined symbols              |             |                                     |   |  |  |  |  |  |  |  |
| (All oth     | ner strengths from<br>ed triaxial testing)                                 | Chalk                            |             | Rotary Core                         |   |  |  |  |  |  |  |  |
| S            | Standard Penetration Test  |                                  |             | RQD Rock Quality D                  | esignation<br>e >100mm)                 |  |  |  |  |  |  |  |
| с            | SPT with cone  | Limestone                        |             | FRACTURE INDEX                      |   |  |  |  |  |  |  |  |
| N            | SPT Result   |                                  |             | Fractures/metre<br>FRACTURE Maximum | 9                                       |  |  |  |  |  |  |  |
| -/-          | Blows/penetration (mm)   | Sandstone                        |             | SPACING (m) Minimum                 | coro                                    |  |  |  |  |  |  |  |
|              | after seating drive  | Janustone                        |             | NR No core re                       | covery                                  |  |  |  |  |  |  |  |
| -*/-<br>(mm) | Total blows/penetration  |                                  |             | AZCL Assumed ze                     | one of core                             |  |  |  |  |  |  |  |
| ( )          | Extrapolated value   | Coal                             |             | (where core recovery is unkno       | wn it is                                |  |  |  |  |  |  |  |
| ( )          |  |                                  |             | assumed to be at the base of th     | ie run)                                 |  |  |  |  |  |  |  |

| Project                               | A303<br>7A C              | AMESBUI<br>OUNTESS        | RY TO BI                         | ERWICK I                         | OOWN -         | PHASE                        | Enginee                          | er                                      | AECOM  |                           |                              |                             |                              | Boreho<br>Project | No PO             | /S72402  | 2               |
|---------------------------------------|---------------------------|---------------------------|----------------------------------|----------------------------------|----------------|------------------------------|----------------------------------|---|--|---------------------------|------------------------------|-----------------------------|------------------------------|-------------------|-------------------|--|-----------------|
| Client                                |                           |                           |                                  |                                  |                |                              | Nationa                          | l Grid                                  | 415263.9                                     | E                         |                              |                             |                              | Cround            |                   | 1 1 0 00   |                 |
| Sampli                                | ng                        | WAYS ENG                  | JLAND                            | Proper                           | ties           |                              | Strata                           |   | 142036.9                                     | IN                        |                              |                             |                              | Ground            | Level 7.          | Scale 1  | 25              |
| Depth                                 | 0                         | Sample                    | Depth<br>Cased &                 | Strength                         | W<br>%         |                              | Descrip                          | tion                                    |  |                           |                              |                             |                              |                   | Depth             | Legend   | Level           |
|                                       |                           | -                         | (to water)                       | RIC                              | 70             |                              |                                  |   |  |                           | _                            |                             |                              | _                 | G.L.              |  | 71.12           |
| 0.00-                                 | 0.15                      | _ D                       |                                  |                                  |                |                              | PROBA<br>sligh<br>Grave<br>chalk | BLE MAN<br>tly gra<br>l is an<br>and fi | DE GROUND<br>avelly si<br>ngular to<br>lint. | : Soft<br>lt wit<br>subro | brown<br>h occas<br>ounded f | slight<br>sional<br>Eine to | ly sand<br>rootlet<br>coarse | ly<br>s.          | 0.15              |  | 70.97           |
| 0.30-<br>0.30                         | 0.50                      | - B<br>D                  |                                  |                                  |                |                              | PROBA                            | BLE MAI                                 | DE GROUND<br>tly grave                       | : Ligh<br>llv si          | t greyi<br>lt. Gra           | ish bro<br>avel is          | wn slig<br>angula            | ghtly<br>ar to    | +                 |  |                 |
| 0.50-                                 | 1.20                      | _ В                       |                                  |                                  |                |                              | suban<br>flint                   | gular fragme                            | fine to c<br>ents (up                        | oarse<br>to 40m           | chalk w<br>m in si           | with oc<br>ize).            | casiona                      | 1                 | Ļ                 |  | 4               |
|                                       |                           | -                         |                                  |                                  |                |                              | compa                            | cted st                                 | trata.                                       | excava                    |                              | lilleui                     | .c due i                     | .0                | -                 |  |                 |
|                                       |                           |                           |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | +                 |  |                 |
|                                       |                           | _                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | <u> </u>          |  |                 |
| 1.20-                                 | 2.00                      | в                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 |  |                 |
| 1.20                                  |                           | - D                       |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | Ļ                 |  |                 |
| 1.50                                  |                           | _ D                       |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 |  | •               |
|                                       |                           | Ļ                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | +                 |  |                 |
|                                       |                           | -                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 |  |                 |
| 2.00-                                 | 2.80                      | в                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | <u> </u>          |  |                 |
|                                       |                           | L                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | +                 |  |                 |
|                                       |                           | -                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 |  |                 |
| 2.50                                  |                           | D                         |                                  |                                  | 21             |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 |  |                 |
|                                       |                           |                           |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | L                 |  |                 |
| 2.80-                                 | 4.60                      | - в                       |                                  |                                  |                |                              | Light                            | green                                   | ish arev                                     | slight                    | ly gray                      | velly c                     | lavev S                      | SAND              | - 2.80            |  | 68.32           |
| 3.00                                  |                           | -<br>D                    |                                  |                                  |                |                              | Grave                            | l is su<br>and fi                       | ubangular<br>lint.                           | to su                     | brounde                      | ed fine                     | to coa                       | arse              | -                 | 0 <u>.</u>   |                 |
|                                       |                           | -                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 |  |                 |
|                                       |                           | F                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | Ę                 | 0  |                 |
|                                       |                           | _                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | L                 |  |                 |
|                                       |                           | -                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 | 0  |                 |
|                                       |                           | L                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | +                 |  |                 |
| 4 00                                  |                           | -<br>-                    |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 | a  |                 |
| 4.00                                  |                           |                           |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | F                 |  | •               |
|                                       |                           |                           |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | L                 | 0.0.0  |                 |
|                                       |                           | -                         |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | -                 |  | 4               |
| 4.60-                                 | 6.00                      | - в                       |                                  |                                  |                |                              |                                  |   |  |                           |                              |                             |                              |                   | 4.60              | 0  | 66.52           |
|                                       |                           | -                         |                                  |                                  |                |                              | CHALK<br>Clast                   | , records are e                         | vered as<br>extremely                        | slight<br>weak            | ly sand<br>to very           | ly grav<br>weak,            | low                          | LT.               | -                 |  |                 |
|                                       |                           | F                         |                                  |                                  |                |                              | light                            | greyis<br>gular s                       | sh brown.<br>small fli                       | With<br>nt fra            | occasio<br>gments            | onal an<br>(up to           | ngular t<br>9 40mm i         | in is             | F                 |  | ч<br>ч          |
| 5.00<br>Boring                        |                           | D                         |                                  |                                  | 21             | Progre                       | size)                            | •                                       |  |                           | Groun                        | dwate                       | r                            |                   | _                 |  | -               |
| Depth                                 | Hole<br>Dia               |                           | Techniqu                         | e                                | Crew           | Depth<br>of Hole             | Depth<br>Cased                   | Depth to<br>Water                       | Date   | Time                      | Depth<br>Struck              | Depth<br>Cased              | Rose to                      | in<br>Mins        | Depth<br>Sealed   | Remai  | ks on<br>dwater |
| 0.15                                  |                           | Inspect<br>Inspect        | tion Pit                         | t<br>t                           | Arch<br>DR/MM  | G.L.<br>0.15                 | NIL                              | DRY                                     | 11/11/19<br>11/11/19                         | 08:00<br>18:00            |                              |                             |                              |                   |                   | Damp str<br>between  | ata             |
| 2.00<br>3.00                          | 0.10                      | Dynamic<br>Dynamic        | z Sample<br>z Sample<br>z Sample | er<br>er                         | DR/MM<br>DR/MM | 0.15<br>6.00                 | NIL<br>NIL                       | DRY<br>DRY                              | 02/12/19<br>02/12/19                         | 08:00<br>18:00            |                              |                             |                              |                   |                   | 4.00-5.0   | 0m.             |
| 5.00<br>Remar                         | 0.07<br>ks 🖬              | Dynamic                   | <u>Sample</u><br>Sample          | er<br>t hand e                   | DR/MM<br>DR/MM | ted to                       | 0.15m b                          | y arch                                  | eologist                                     | and ex                    | tended                       | to 1.2                      | 0m dept                      | h by              | Log               | and by   | IR/ST           |
| Symbols a                             | nd AG                     | Geotech<br>Chalk<br>Chalk | nnics. N<br>Logged i<br>, Append | No servi<br>in accor<br>lix B (F | dance          | ere fou<br>with C<br>ortimor | nd.<br>IRIA Re<br>e, 2014        | port C!                                 | 574, 2002<br>tles Publ                       | . Flin<br>ishina          | ts desc                      | cribed<br>act drv           | as in "<br>' densit          | 'Logging          | g the Che<br>Figu | cked by of the control of the contro | CPL<br>L of 2   |
| abbreviation<br>explained<br>accompan | ons are<br>on the<br>ying | determi<br>test re        | ined from sults.                 | om hand                          | press          | ure on                       | standar                          | d size                                  | samples                                      | or, wh                    | ere und                      | lertake                     | en, from                     | labora            | atory             |  | 2/05/2020       |
| key sheet.<br>All dimens              | ions                      | Backfil                   | u detai                          | LIS Tron                         | a base         | or hol                       | e: bent                          | onite i                                 | up to gro                                    | und le                    | vel.                         |                             |                              |                   | e                 | anagi<br>Anagra  | MES             |
| are in met                            | res.                      | Logged in                 | accordance                       | e with BS59                      | su:2015        |                              |                                  |   |  |                           |                              |                             |                              |                   |                   |  |                 |

#### **BOREHOLE RECORD** - Dynamic Sampler A303 AMESBURY TO BERWICK DOWN - PHASE Engineer 7A COUNTESS Project Borehole WS72402 AECOM Project No PC197708 National Grid Coordinates 415263.9 142036.9 E N Client Ground Level 71.12 m OD HIGHWAYS ENGLAND Sampling Properties Strata Scale 1:25 Depth Cased & (to Water) w % Level m OD Sample Strength Depth Description Depth Legend Туре kPa Ľ Т Г 1 T , <u>é</u> te T 6.00 65.12 End of Borehole Boring Progress Groundwater Depth of Hole Hole Depth Cased Depth to Water Depth Depth Cased in Mins Depth Sealed Remarks on Groundwater Date Time Rose to Depth Technique Crew Struck Dia 0.06 Dynamic Sampler DR/MM 6.00 Remarks Logged by Checked by JR/SI CPL 2 of 2 Symbols and Figure abbreviations are 12/05/2020 explained on the accompanying geolechnics key sheet. All dimensions

are in metres. Logged in accordance with BS5930:2015

| Project   | A303   | AMESBUI  | RY TO BE   | RWICK  | DOWN -  | PHASE   | Engine  | er  | AECOM  |                                      |   |  |  | Boreho<br>Project         |                           | S72403   | 3                                   |
|---|--|--|--|--|---|---|---|---|--|--------------------------------------|---|--|--|---------------------------|---------------------------|--|-------------------------------------|
|   | /A CC  | JUNIESS  |  |  |   |   | Nationa   | al Grid   | 415543.8   | E                                    |   |  |  | Tiojeet                   |                           | .197708  |                                     |
| Client  | HIGHN  | VAYS ENG   | JLAND  | Dropo  | rtico   |   | Coordir   | nates   | 142070.0   | Ñ                                    |   |  |  | Ground                    | Level 72                  | .77 m  | OD                                  |
| Samp  | ling   | Sample   | Depth  | Strength   | rties   |   | Strata  | ±   |  |                                      |   |  |  |                           |                           | Scale 1  | 25                                  |
| Depth   |  | Туре   | (to Water)   | kPa  | %   |   | Descrip   | otion   |  |                                      |   |  |  |                           | Depth                     | Legend   | m OD                                |
| 0.00-<br>0.00-<br>0.00-<br>0.00-                        | - 0.20<br>- 0.20<br>- 0.20<br>- 0.20         | B<br>D<br>ES   |  | PID  | =3.2ppm   | ı   | MADE<br>grave<br>angul<br>flint                               | GROUND<br>ally sil<br>Lar to s                            | : Soft br<br>lt with c<br>subrounde                                      | rown sl<br>occasio<br>d fine         | ightly<br>nal roo<br>to coa             | sandy<br>otlets.<br>arse ch              | slight]<br>Gravel<br>alk and             | ly<br>lis<br>l            | G.L.                      |  | 72.77                               |
| 0.40-<br>0.40-<br>0.40-<br>0.40-                        | - 0.60<br>- 0.60<br>- 0.60<br>- 0.60         | B<br>D<br>ES   |  | PID  | =3.3ppm   | L   | MADE<br>sand<br>of wr<br>Grave<br>chalł                       | GROUND<br>with or<br>hite sla<br>el is an<br>t and fi     | : Cream a<br>ccasional<br>ightly sa<br>ngular to<br>lint.                | nd bro<br>pocke<br>ndy sl<br>subro   | wn very<br>ts (up<br>ightly<br>wunded i | y grave<br>to 100<br>gravel<br>Eine to   | elly sil<br>mm in s<br>ly silt<br>coarse | lty<br>size)<br>S.        | -<br>-<br>-               |  | •                                   |
| 1.00-<br>1.00-<br>1.00-                                 | - 1.20<br>- 1.20<br>- 1.20                   | -<br>-<br>D<br>- ES  |  |  | 21  |   | MADE<br>grave<br>subar<br>subro                               | GROUND<br>al with<br>ngular l                             | : Cream a<br>a low co<br>brick and<br>fine to c                          | nd bro<br>bble c<br>concr            | wn very<br>ontent<br>ete. G             | y sandy<br>of ang<br>ravel i<br>chalk,   | very s<br>ular to<br>s angul<br>concre   | silty<br>blar to<br>ete   | 0.85                      |  | 71.92                               |
| 1.00-   | - 1.20<br>- 2.00                             | в  |  | PID  | =3.3ppm   | ı   | and f   | Elint.<br>.00m, a   | black ge   | otexti                               | le shee                                 | et.                                      |  | /                         | 1.20                      |  | 71.57                               |
| 1.50<br>1.50  |  | -<br>- ES<br>-   |  | PID  | =2.2ppn   | L   | PROBZ<br>silt.<br>coars<br>30mm<br>in si                      | ABLE MAN<br>Grave<br>se chall<br>in size<br>ize).         | DE GROUND<br>l is angu<br>k with oc<br>e) and oc                         | : Ligh<br>lar to<br>casion<br>casion | t grey:<br>subang<br>al flin<br>al rel: | ish whi<br>gular f<br>nt frag<br>ic root | te grav<br>ine to<br>ments (<br>s (up t  | velly<br>(up to<br>to 5mm | -<br>-<br>-<br>-          |  |                                     |
| 1.80  |  | - D  |  |  | 24  |   |   |   |  |                                      |   |  |  |                           | -                         |  |                                     |
| 2.00-   | - 3.70                                       | -<br>В<br>-  |  |  |   |   | PROBA<br>SILT.<br>coars<br>60mm                               | ABLE MAI<br>Grave:<br>se chall<br>in size                 | DE GROUND<br>l is angu<br>k with oc<br>a).                               | : Ligh<br>lar to<br>casion           | t brown<br>subang<br>al flin            | nish gr<br>gular f<br>nt frag            | ey grav<br>ine to<br>ments (             | velly<br>(up to           | 2.00<br>                  |  | 70.77                               |
| 2.50<br>2.50  |  | -<br>- ES<br>-   |  | PID  | =2.0ppm   | L.  |   |   |  |                                      |   |  |  |                           | -<br>-<br>-<br>-          |  |                                     |
| 3.00  |  | - D<br>  |  |  | 25  |   |   |   |  |                                      |   |  |  |                           | -<br>-<br>-<br>-<br>-     |  |                                     |
| 3.70-   | - 4.60                                       | в  |  |  |   |   | Light<br>Grave<br>chalk                                       | green:<br>al is su<br>and fi                              | ish grey<br>ubangular<br>lint.   | very s<br>to su                      | andy ve<br>brounde                      | ery cla<br>ed fine                       | yey GRA<br>to coa                        | AVEL.<br>Arse             | 3.70                      |  | 69.07                               |
| 4.00<br>4.00  |  | ES<br>-<br>-   |  | PID  | =2.2ppn   | ı   |   |   |  |                                      |   |  |  |                           | -                         |  |                                     |
| 4.50  |  | -<br>-<br>_ D  |  |  | 14  |   | Below   | v 4.60m   | , becomin  | ıg grav                              | elly a                                  | nd slig                                  | htly cl                                  | layey.                    | -<br>-<br>-               |  | •                                   |
|   |  | -<br>-<br>-  |  |  |   |   |   |   |  |                                      |   |  |  |                           | -<br>-<br>-               |  |                                     |
| Boring  | )<br>,                                       | ļ  | ļ  | ļ  | <br>  | Progre  |   | Donth 1   | 1  | T                                    | Grour                                   | ndw at e                                 | er                                       | · ·                       | Donth                     | Dere   | ko or                               |
| Depth   | Hole<br>Dia                                  |  | Techniqu   | e  | Crew  | of Hole   | Depth<br>Cased  | Water   | Date   | Time                                 | Struck                                  | Cased                                    | Rose to                                  | in<br>Mins                | Sealed                    | Groun  | ks on<br>dwater                     |
| 1.20<br>2.00<br>3.00<br>4.00<br>5.00<br>6.00            | 0.40<br>0.12<br>0.09<br>0.08<br>0.07<br>0.06 | Inspect<br>Dynamic<br>Dynamic<br>Dynamic<br>Dynamic<br>Dynamic           | tion Pit<br>Sample<br>Sample<br>Sample<br>Sample<br>Sample                     | er<br>er<br>er<br>er<br>er                           | Arch<br>DR/MM<br>DR/MM<br>DR/MM<br>DR/MM                    | G.L.<br>1.20<br>1.20<br>6.00                              | NIL<br>NIL<br>NIL   | DRY<br>DRY<br>DRY   | 12/11/19<br>12/11/19<br>02/12/19<br>02/12/19                             | 08:00<br>18:00<br>08:00<br>18:00     |   |  |  |                           |                           | Damp str<br>between<br>3.00-4.0  | ata<br>0m.                          |
| Remai<br>Symbols<br>abbreviati<br>explained<br>accompan | and<br>ions are<br>on the<br>nying           | Inspect<br>ES samp<br>Chalk I<br>Chalk",<br>determi<br>test re<br>Backfi | tion pit<br>ole = 2<br>logged i<br>, Append<br>ined fro<br>esults.<br>11 detai | x hand o<br>x vial<br>in acco<br>lix B (1<br>om hand | excavat<br>, 1 x p<br>rdance<br>R.N. Mo<br>pressu<br>n base | ed to<br>plastic<br>with C<br>prtimor<br>ure on<br>of hol | 1.20m k<br>jar ar<br>IRIA Re<br>e, 2014<br>standar<br>e: bent | by arched<br>and 1 x a<br>aport C!<br>4, White<br>rd size | eologist,<br>amber jar<br>574, 2002<br>tles Publ<br>samples<br>up to gro | no se<br>. Flin<br>.ishing<br>or, wh | rvices<br>ts desc<br>). Inta<br>ere und | encoun<br>cribed<br>act dry<br>lertake   | as in "<br>densit<br>en, from            | 'Logging<br>y<br>a labora | Logg<br>the Chec<br>Figur | ed by the second | JR/SI<br>ZPL<br>L of 2<br>2/05/2020 |
| All dimension   | sions<br>tres.                               | Logged in  | accordance   | e with BS59  | 30:2015   |   | _   | -   |  |                                      |   |  |  |                           | Ľ                         | enaqu  |                                     |

| 70JECT A303<br>7A C                                 | AMESBUI        | RY TO BI              | ERWICK          | DOWN -  | PHASE            | Engine             | ər                | AECOM              |            |                 |                |         | Project    | No P            | VS/2403<br>C197708 | 5                |
|---|----------------|-----------------------|-----------------|---------|------------------|--------------------|-------------------|--------------------|------------|-----------------|----------------|---------|------------|-----------------|--------------------|------------------|
| lient HIGH  | WAYS ENG       | GLAND                 |                 |         |                  | Nationa<br>Coordir | al Grid<br>nates  | 415543.<br>142070. | 8 E<br>0 N |                 |                |         | Ground     | Level 7         | 2.77 M             | OD               |
| Sampling  |                |                       | Prope           | rties   |                  | Strata             | à                 |                    |            |                 |                |         |            |                 | Scale 1            | :25              |
| Depth   | Sample<br>Type | Cased &<br>(to Water) | Strength<br>kPa | w<br>%  |                  | Descrip            | otion             |                    |            |                 |                |         |            | Depth           | Legend             | Level<br>m OD    |
|   | -              | , ,                   |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   |                |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | _               | · · · · · ·        |                  |
| E E0  | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
| 5.50  | - 55           |                       | PID             | =2.0pp  | m                |                    |                   |                    |            |                 |                |         |            | Ę               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
| 5.80  | - D            |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | Ę               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   | R                  | nd of B    | orehol          | e              |         |            | - 6.00          |                    | 66.              |
|   | Ľ              |                       |                 |         |                  |                    |                   | _                  |            |                 | •              |         |            | Ľ               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | F              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | Ę               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | Ľ              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            |                 |                    |                  |
|   | L              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | <b>—</b>        |                    |                  |
|   | F              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | F               |                    |                  |
|   | Ľ              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   |                |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | Ē               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | _               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            |                 |                    |                  |
|   | Ļ              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            |                 |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | Ľ              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | Į               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | [              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | Ę               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | L              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | Ĺ               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | F              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | Ę              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | Ľ              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | Į               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
|   | -              |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | -               |                    |                  |
| Boring  |                |                       |                 |         | Progr            | ess                |                   |                    |            | Grour           | ndwate         | er      |            |                 |                    |                  |
| Depth Dia   | 1              | Techniqu              | е               | Crew    | Depth<br>of Hole | Depth<br>Cased     | Depth to<br>Water | Date               | Time       | Depth<br>Struck | Depth<br>Cased | Rose to | in<br>Mins | Depth<br>Sealed | Rema<br>Groun      | rks on<br>dwater |
|   |                |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            |                 |                    |                  |
|   |                |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            |                 |                    |                  |
| Remarks   | u<br>àS        |                       |                 |         |                  |                    |                   |                    |            |                 | _              |         |            | Log<br>Che      | ged by a           | JR/SI            |
| bymbols and<br>bbreviations are<br>applained on the |                |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | Figu            | ure :              | 2/05/2020        |
| ccompanying<br>ey sheet.                            |                |                       |                 |         |                  |                    |                   |                    |            |                 |                |         |            | ட               | <u>व्य</u> ीवदी    | നിദ്ദ            |
| Il dimensions                                       | Loggodin       |                       |                 | 20.2015 |                  |                    |                   |                    |            |                 |                |         |            | E               | التحسب             | sures.           |

| Project                                | A303<br>7A CC                | AMESBUE                                  | RY TO BE                               | ERWICK I             | own -                            | PHASE                | Enginee  | er  | AECOM  |  |   |  |   | Boreho<br>Project | le W<br>No po       | <b>S72404</b>                         |               |
|--|------------------------------|--|--|----------------------|----------------------------------|----------------------|--|---|--|--|---|--|---|-------------------|---------------------|---------------------------------------|---------------|
| Client                                 | urau                         |  | 17 A MD                                |                      |                                  |                      | Nationa  | l Grid  | 415678.0   | E  |   |  |   | Ground            |                     | 04 m (                                | חר            |
| Sampl                                  | ing                          | VAIS ENG                                 | JLAND                                  | Proper               | ties                             |                      | Strata   | 1   | 142105.7   | IN   |   |  |   | Ground            | Levei 72            | Scale 1:                              | 25            |
| Depth                                  | -                            | Sample<br>Type                           | Depth<br>Cased &<br>(to Water)         | Strength<br>kPa      | w<br>%                           |                      | Descrip  | tion  |  |  |   |  |   |                   | Depth               | Legend                                | Level<br>m OD |
| 0.00-                                  | 0.20                         |  | (10 11410)                             |                      |                                  |                      | PROBA<br>sligh                                     | BLE MA  | DE GROUND<br>avelly si   | : Soft<br>lt wit                                       | brown<br>h many   | slight<br>rootle   | ly sand<br>ts and                                     | y<br>roots        | _ G.L.              |                                       | 72.04         |
| 0.20-                                  | 0.40                         | В<br>                                    |  |                      |                                  |                      | (up t<br>fine                                      | o 8mm to coa:   | thick). G<br>rse chalk   | ravel<br>and f   | is angu<br>lint.  | ular to  | subrou  | nded              | 0.20                |                                       | 71.84         |
| 0.40-                                  | 1.20                         | - в<br>-                                 |  |                      |                                  |                      | PROBA<br>occas<br>sligh<br>roots<br>subro<br>PROBA | BLE MAN<br>ional p<br>tly san<br>(up to<br>unded :<br>BLE MAN | DE GROUND<br>pockets (<br>ndy sligh<br>o 7mm thi<br>fine to c<br>DE GROUND | : Crea<br>up to<br>tly gr<br>ck). G<br>oarse<br>: Ligh | m and 1<br>80mm in<br>avelly<br>ravel :<br>chalk a<br>t grey: | brown,<br>n size)<br>silt w<br>is angu<br>and fli<br>ish bro | with<br>of whi<br>ith rar<br>lar to<br>nt.<br>wn slig | te,<br>e<br>htly  | 0.40                |                                       | 71.64         |
|  |                              | -<br>-<br>                               |  |                      |                                  |                      | sandy<br>suban<br>flint                            | sligh<br>gular :<br>fragmo                                    | tly grave<br>fine to c<br>ents (up   | lly si<br>oarse<br>to 50m                              | lt. Gra<br>chalk w<br>m in s:                                 | avel is<br>with oc<br>ize).                                  | angula<br>casiona                                     | r to<br>1         | -<br>-<br>-         |                                       |               |
| 1.20-<br>1.20                          | 2.00                         | - В<br>- D                               |  |                      | 19                               |                      |  |   |  |  |   |  |   |                   | -                   |                                       |               |
| 1.50                                   |                              | -<br>-<br>-                              |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -<br>-<br>-<br>-    |                                       |               |
| 2.00-                                  | 3.60                         | -<br>B<br>-<br>-                         |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -<br>               |                                       |               |
| 2.50                                   |                              | - D<br>                                  |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -<br>-<br>-         |                                       |               |
| 3.00                                   |                              | D<br><br>                                |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -<br>               |                                       |               |
|  |                              | -  |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -                   |                                       |               |
| 3.60-                                  | 4.50                         | - в                                      |  |                      |                                  |                      | Light<br>Grave<br>chalk                            | green<br>l is s<br>and f                                      | ish grey<br>ubangular<br>lint.   | very s<br>to su  | andy ci<br>brounde  | layey G<br>ed fine   | RAVEL.<br>to coa                                      | rse               | 3.60                |                                       | 68.44         |
|  |                              | -  |  |                      |                                  |                      | Below  | 3.60m   | , grading  | to a   | very sa   | andy cl  | ayey gr   | avel.             | -                   |                                       |               |
|  |                              | -  |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -                   |                                       |               |
| 4 50                                   | c 00                         | -  |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -                   | 0 ·                                   |               |
| 4.50                                   | 6.00                         | B<br>                                    |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -                   |                                       |               |
|  |                              | -  |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -                   | 0.000                                 |               |
| 5.00                                   |                              | -<br>D                                   |  |                      |                                  |                      |  |   |  |  |   |  |   |                   | -                   | · · · · · · · · · · · · · · · · · · · |               |
| Boring                                 | Hole                         |  |  | •                    | -                                | Progre               | ess<br>Depth                                       | Depth to  | <b>D</b> (   |  | Grour<br>Depth  | ndwate<br>Depth  | r<br>Dana ta  | in                | Depth               | Remar                                 | ks on         |
| Depth                                  | Dia                          | Inspect                                  | lechnique                              | e                    | Crew                             | of Hole              | Cased  | Water   | Date   | 1 ime  | Struck  | Cased  | ROSE to   | Mins              | Sealed              | Ground                                | lwater<br>ata |
| 1.20<br>2.00<br>3.00<br>4.00           | 0.40<br>0.10<br>0.09<br>0.08 | Inspect<br>Dynamic<br>Dynamic<br>Dynamic | cion Pit<br>Sample<br>Sample<br>Sample | er<br>er<br>er       | DR/MM<br>DR/MM<br>DR/MM<br>DR/MM | 0.40<br>0.40<br>6.00 | NIL<br>NIL<br>NIL                                  | DRY<br>DRY<br>DRY   | 12/11/19<br>02/12/19<br>02/12/19   | 18:00<br>08:00<br>18:00                                |   |  |   |                   |                     | between<br>4.00-5.00                  | Om.           |
| 5.00<br>Remar                          | 0.07<br>ks 尻                 | Dynamic<br>Inspect                       | Sample                                 | er<br>hand e         | DR/MM<br>xcavat                  | ed to                | 0.40m b  | y arch  | eologist   | and ex   | tended  | to 1.2   | 0m dept   | h by              | Loga                | ed by J                               | R/SI          |
| Symbols a                              | and                          | Chalk ]<br>Chalk",                       | logged i<br>, Append                   | in accor<br>lix B (R | dance                            | with C               | IRIA Re<br>e, 2014                                 | port C  | 574, 2002<br>tles Publ   | . Flin<br>ishing                                       | ts desc<br>). Inta  | cribed<br>act dry  | as in "<br>densit                                     | Logging<br>Y      | f the Chec<br>Figur | ked by C<br>e 1                       | PL<br>of 2    |
| explained<br>accompan                  | ons are<br>on the<br>lying   | determi<br>test re                       | ined from                              | om hand              | pressu                           | ire on               | standar  | d size  | samples  | or, wh   | ere uno   | dertake  | n, from   | labora            | itory               | $\sum_{n=0}^{1}$                      | 05/2020       |
| key sheet.<br>All dimens<br>are in met | ions<br>res.                 | Logged in                                | accordance                             | with BS593           | 30:2015                          | or not               | e: Dent  | JILLE 1   | up to gro  | una te   | vei.  |  |   |                   | œ                   |                                       | MIGS          |

| Project               | A303<br>7A C0     | AMESBU         | RY TO BE                       | ERWICK :        | DOWN -  | PHASE            | Enginee            | er                | AECOM    |            |                 |                |         | Project    | No P            | VS/2404<br>C197708 | +                    |
|-----------------------|-------------------|----------------|--------------------------------|-----------------|---------|------------------|--------------------|-------------------|----------|------------|-----------------|----------------|---------|------------|-----------------|--------------------|----------------------|
| Client                | HIGH              | VAYS EN        | GLAND                          |                 |         |                  | Nationa<br>Coordir | al Grid<br>nates  | 415678.0 | 0 E<br>7 N |                 |                |         | Ground     | Level 7         | 2.04 m             | OD                   |
| Samp                  | ling              |                |                                | Prope           | rties   |                  | Strata             | a                 |          |            |                 |                |         |            |                 | Scale 1            | :25                  |
| Depth                 |                   | Sample<br>Type | Depth<br>Cased &<br>(to Water) | Strength<br>kPa | w<br>%  |                  | Descrip            | otion             |          |            |                 |                |         |            | Depth           | Legend             | Level<br>m OD        |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               | 0                  |                      |
|                       |                   | Ę              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ę               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | Ľ              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   |                |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ē               | 0                  |                      |
|                       |                   | _              |                                |                 |         |                  |                    |                   |          |            | h1              |                |         |            | 6.00            |                    | 66.04                |
|                       |                   | -              |                                |                 |         |                  |                    |                   | ы        | nd OF E    | orenol          | e              |         |            | -               |                    |                      |
|                       |                   | _              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | ļ               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | F              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | F               |                    |                      |
|                       |                   | F              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ļ               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | L              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | L               |                    |                      |
|                       |                   | F              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ļ               |                    |                      |
|                       |                   | L              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ē               |                    |                      |
|                       |                   | F              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | F               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | _              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | ļ               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | _              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ĺ               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ę               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ē               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            |                 |                    |                      |
|                       |                   | F              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | F               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
|                       |                   | _              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            |                 |                    |                      |
|                       |                   | _              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | _               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            |                 |                    |                      |
|                       |                   | Ę              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Ę               |                    |                      |
|                       |                   | -              |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | -               |                    |                      |
| Boring                | 1                 | <u> </u>       |                                |                 |         | Proare           | ess                |                   |          |            | Grour           | ndwate         | r       |            | <u> </u>        |                    |                      |
| Depth                 | ,<br>Hole<br>Dia  |                | Technique                      | е               | Crew    | Depth<br>of Hole | Depth<br>Cased     | Depth to<br>Water | Date     | Time       | Depth<br>Struck | Depth<br>Cased | Rose to | in<br>Mins | Depth<br>Sealed | Rema<br>Groun      | rks on<br>dwater     |
| 6.00                  | 0.06              | Dynami         | c Sample                       | er              | DR/MM   |                  |                    |                   |          |            |                 |                |         |            |                 |                    |                      |
|                       |                   |                |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            |                 |                    |                      |
| Rema                  | rks <sub>AG</sub> | 5              |                                |                 |         |                  |                    | •                 |          | •          |                 | :              | :       |            | Log<br>Che      | ged by             | JR/SI<br>CPL         |
| Symbols<br>abbreviati | and<br>ions are   |                |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            | Figu            | ire                | 2 of 2<br>12/05/2020 |
| explained<br>accompar | l on the<br>nying |                |                                |                 |         |                  |                    |                   |          |            |                 |                |         |            |                 |                    | പ്പാ                 |
| All dimen             | sions             | Loaged in      | accordance                     | with BS59       | 30:2015 |                  |                    |                   |          |            |                 |                |         |            | 삕               |                    |                      |

# **APPENDIX 6**

**Trial Pit Records**
#### DATA SHEET - Symbols and Abbreviations used on Records

| DATA          | A SHEET - Symbols a  | nd Abbreviations us      | sed on Re   | cords                                   | G                                       |
|---------------|--|--------------------------|-------------|---|---|
| Sample        | e Types  | Groundwater              |             | Strata, Continued                       |   |
| В             | Bulk disturbed sample  | Water Strike             | $\nabla$    | Mudstone                                |   |
| BLK           | Block sample   | Depth Water Rose To      | T           |   |   |
| С             | Core sample  | -                        |             | Siltstono                               | *****                                   |
| D             | Small disturbed sample<br>(tub/jar)  | Instrumentation          |             | Sillstone                               | * |
| Е             | Environmental test sample  |                          | 55          | Metamorphic Rock                        | * * * * *                               |
| ES            | Environmental soil sample  | Seal                     |             | Fine Grained                            | ******                                  |
| EW            | Environmental water  |                          | -           |   | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |
| G             | Gas sample   |                          | i -         | Medium Grained                          | ~~~~                                    |
| L             | Liner sample   |                          | -           |   | <u> </u>                                |
| LB            | Large bulk disturbed sample  | Filter                   | i e         | Coarse Grained                          | $\sim$                                  |
| Ρ             | Piston sample (PF - failed P sample)                                       |                          | 2<br>1<br>1 | Igneous Rock                            |   |
| тw            | Thin walled push in sample   |                          |             | Fine Grained                            | ~~~~~                                   |
| U             | Open Tube - 102mm<br>diameter with blows to<br>take sample. (UF - failed U | Seal                     |             | Medium Grained                          | +++++                                   |
|               | sample)  | <b>-</b>                 |             |   | + + + +                                 |
| UI            | I hin wall open drive tube<br>sampler - 102mm diameter                     | Strata                   | Legend      | Coarse Grained                          |   |
|               | with blows to take sample.<br>(UTF - failed UT sample)                     | Made Ground<br>Granular  |             | <b>Backfill Materials</b>               |   |
| V             | Vial sample  |                          |             |   | ×.                                      |
| W             | Water sample   | Made Ground              |             | Arisings                                | 8                                       |
| #             | Sample Not Recovered   | Collesive                |             |   | X                                       |
| Insitu T      | Festing / Properties   | Topsoil                  |             | Bentonite Seal                          |   |
| CBRP          | CBR using TRL probe  |                          |             |   |   |
| CHP           | Constant Head<br>Permeability Test   | Cobbles and Boulders     |             | Concrete                                | •<br>•                                  |
| COND          | Electrical conductivity  |                          | <u> </u>    |   | •<br>•                                  |
| тс            | Thermal Conductivity   | Gravel                   |             |   |   |
| TR            | Thermal Resistivity  |                          | * * * *     | Fine Gravel Filter                      |   |
| HV            | Strength from Hand Vane  | Sand                     |             |   | -                                       |
| ICBR          | CBR Test   |                          |             | General Fill                            |   |
| IDEN          | Density Test   | Cil+                     | × ×         |   |   |
| IRES          | Resistivity Test   | Sit                      | × × × × × × |   |   |
| MEX           | CBR using Mexecone<br>Probe Test   |                          | × × ×       | Gravel Filter                           |   |
| PKR           | Packer Permeability Test   | Clay                     |             |   | 7                                       |
| PLT           | Plate Load Test  |                          |             | Grout                                   |   |
| PP            | Strength from Pocket   | <b>D</b>                 |             |   |   |
| Temp          | Temperature  | Peat                     | SM/2        | Sand Filter                             | 0000                                    |
| VHP           | Variable Head Permeability   |                          |             |   | 00 a                                    |
| VN            | Strength from Insitu Vane  | Note: Composite soil typ | es shown    | Tarmacadam                              |   |
| w%            | Water content  | by combined symbols      |             |   |   |
| (All oth      | ner strengths from   | Chalk                    |             | Rotary Core                             |   |
| undraine<br>S | Standard Penetration Test  |                          |             | RQD Rock Quality D                      | esignation                              |
| 0             | (SPT)  | Limestone                |             | (% of intact cor                        | e >100mm)                               |
| С             | SPT with cone  | Linescone                |             | Fractures/metre                         | 2                                       |
| N             | SPT Result   |                          |             | FRACTURE Maximum<br>SPACING (m) Minimum |   |
| -/-           | Blows/penetration (mm)<br>after seating drive                              | Sandstone                |             | NI Non-intact                           | core                                    |
| -*/-          | Total blows/penetration  |                          |             | AZCL Assumed zo                         | one of core                             |
| (mm)          | Extrapolated value   | Coal                     |             | loss<br>(where core recovery is unkno   | wn it is                                |
| ( )           | Extrapolated value   |                          |             | assumed to be at the base of th         | ne run)                                 |

| 7 | rial | Pit |
|---|------|-----|
|   |      |     |

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer 7A COUNTESS

AECOM

Trial Pit Project No

STP72401 PC197708

| Client нісн  | NAYS EN                             | GLAND                                 |                                     | National Grid 415205<br>Coordinates 142045  | .6 E<br>.0 N   | Gr   | ound Leve        | l 70.98 m                         | OD                                |
|--|-------------------------------------|---------------------------------------|-------------------------------------|---|--|--|------------------|-----------------------------------|-----------------------------------|
| Samples and  | d Tests                             | 1                                     |                                     | Strata  |  |  | 1                | Scale 1                           | :25                               |
| Depth  | Туре                                | Stratum<br>No                         | Results                             | Description   |  |  | Depth            | Legend                            | Level<br>m OD                     |
| <br>- 0.10<br>-  | D                                   |                                       |                                     | MADE GROUND: Grass over so<br>sandy clay with many rootl<br>size). Gravel is angular t<br>chalk and plastic.  | ft brown slight]<br>ets and roots (ι<br>ο subangular fir   | ly gravelly<br>up to 8mm in<br>he to coarse                          | G.L.<br>         |                                   | 70.98                             |
| -<br>-<br>- 0.50- 0.60<br>0.50- 0.60<br>-  | B<br>D                              |                                       |                                     | PROBABLE MADE GROUND: Ligh<br>gravel with a low subangul<br>Gravel is angular to suban<br>with occasional flint frag  | t greyish brown<br>ar chalk cobble<br>gular fine to co<br>ments (up to 80m   | silty<br>content.<br>parse chalk<br>nm in size).                     | -                |                                   |                                   |
| - 0.70- 1.20<br>-<br>-   | в                                   |                                       |                                     | CHALK, recovered as sandy<br>subangular fine to coarse<br>subangular cobble content.<br>to medium density and whit<br>light greyish brown. With<br>subangular small to medium | very silty angul<br>GRAVEL with a me<br>Clasts are very<br>e. Matrix is whi<br>occasional angul<br>flint fragments | lar to<br>edium<br>y weak, low<br>ite, locally<br>lar to<br>s (up to | - 0.70<br>-<br>- |                                   | 70.28                             |
| 1.20<br>-  | D                                   |                                       |                                     | End of E  | xcavation  |  | 1.20             |                                   | 69.78                             |
| -  |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
| -  |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
| -<br>-   |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
| -<br>  |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
| -<br>-<br>-  |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
|  |                                     |                                       |                                     |   |  |  |                  |                                   |                                   |
| -<br>-<br>-  |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
| -<br>-<br>-  |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
| -<br><br>-   |                                     |                                       |                                     |   |  |  | -<br>            |                                   |                                   |
| -<br>-<br>-  |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
| -<br>-<br>-  |                                     |                                       |                                     |   |  |  | -                |                                   |                                   |
| -<br>-   |                                     |                                       |                                     |   |  |  | -<br>-           |                                   |                                   |
| Excavation   |                                     |                                       |                                     |   | Groundwater  |  |                  |                                   |                                   |
| Plant JCB<br>Date 25/1   | 3CX<br>L/2019                       |                                       |                                     | Width (B) 0.90<br>Length (C) 3.00   | Observed of Pit  | Details  | _                |                                   |                                   |
| Stability Stabi  | le duri:                            | ng exca                               | vation.                             | Urientation 100 deg<br>Date Backfilled 25/11/2019   |  | None encounter   | ed during        | g excavation.                     |                                   |
| Remarks  | A Plat<br>Chalk<br>Chalk"<br>determ | e Load<br>logged<br>, Apper<br>ined f | Test was o<br>in accordandix B (R.M | carried out at a depth of 0.50m<br>unce with CIRIA Report C574, 20<br>I. Mortimore, 2014, Whittles Pu<br>ressure on standard size sample                                      | 02. Flints descr<br>blishing). Intac<br>s or, where unde   | l<br>ribed as in "Lo<br>ct dry density<br>ertaken, from 1            | gging the        | Logged by<br>Checked by<br>Figure | SI<br>CPL<br>1 of 1<br>12/05/2020 |
| explained on the<br>accompanying<br>key sheet.<br>All dimensions<br>are in metres. | test r<br>Backfi                    | esults                                | ails from h                         | pase of hole: arisings up to gr   | ound level.  |  |                  | jeeleej                           |                                   |
|  |                                     |                                       |                                     |   |  |  |                  |                                   |                                   |

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer 7A COUNTESS

AECOM

Trial Pit Project No

STP72402 PC197708

| Client HIGHN   | NAYS ENG  | GLAND  |   | Nat<br>Coo  | tional Grid 415331<br>ordinates 142017  | .0 E<br>.0 N                                     |                                       | G  | round Leve               | l 71.14 m            | OD                          |
|--|---|--|---|---|---|--|---------------------------------------|--|--------------------------|----------------------|-----------------------------|
| Samples and  | Tests   |  |   | Strata  |   |  |                                       |  |                          | Scale                | 1:25                        |
| Depth  | Туре  | Stratum<br>No                                      | Results                                     | Description   |   |  |                                       |  | Depth                    | Legend               | Level<br>m OD               |
| 0.00- 0.15<br>0.10<br>0.15- 0.40                                     | B<br>D<br>B                                       |  |   | MADE GROU<br>sandy clay<br>coarse ch                              | ND: Grass over so<br>y. Gravel is angu<br>alk, flint and pl                                     | ft brown<br>lar to su<br>astic fra               | slightl<br>bangula<br>gments.         | y gravelly<br>ir fine to                             | G.L.                     |                      | 71.14                       |
| -<br>-<br>- 0.50- 0.60<br>0.50- 0.60                                 | B<br>D  |  |   | PROBABLE :<br>sandy slig<br>chalk cob<br>fine to co<br>(up to 80) | MADE GROUND: Ligh<br>ghtly gravelly si<br>ble content. Grav<br>oarse chalk with<br>mm in size). | t greyish<br>lt with a<br>el is ang<br>occasiona | brown<br>low su<br>ular to<br>l flint | slightly<br>ubangular<br>o subangular<br>: fragments | -<br>-<br>-              |                      |                             |
| -<br>- 0.80- 1.20<br>-<br>-  | в   |  |   | Between 0<br>compacted  | .15-1.20m, excava<br>and very dry.  | tion diff  | icult a                               | ıs chalk was   | -<br>-<br>-              |                      |                             |
| -<br>1.20<br>-   | D   |  |   |   | End of E  | xcavation  | L                                     |  | 1.20                     |                      | 69.94                       |
| -<br>-<br>-  |   |  |   |   |   |  |                                       |  |                          |                      |                             |
| +<br>  |   |  |   |   |   |  |                                       |  |                          |                      |                             |
| -<br>-<br>-  |   |  |   |   |   |  |                                       |  | -                        |                      |                             |
| -<br>-<br>   |   |  |   |   |   |  |                                       |  | -<br>-<br>               |                      |                             |
| -<br>-<br>-  |   |  |   |   |   |  |                                       |  | -<br>-<br>-              |                      |                             |
| -<br>-<br>-  |   |  |   |   |   |  |                                       |  | -<br>-<br>-              |                      |                             |
| -<br>-<br>-  |   |  |   |   |   |  |                                       |  |                          |                      |                             |
| -<br>-<br>-  |   |  |   |   |   |  |                                       |  | -<br>-<br>-<br>-         |                      |                             |
| -<br>-<br>   |   |  |   |   |   |  |                                       |  | -                        |                      |                             |
| Excavation   |   |  |   | Width (P)   |   | Ground   | water<br>Depth                        | Detail   |                          |                      |                             |
| Date 25/11<br>Shoring None<br>Stability Stabi                        | CX<br>/2019<br>.e durin                           | ng exca  | vation.                                     | Length (C)<br>Orientation<br>Date Backfilled                      | 0.90<br>2.80<br>170 deg<br>25/11/2019   | Observed   | of Pit                                | Details<br>None encounte:                            | red during               | excavation           | •                           |
| Remarks  | A Plate   | a Load   | Test was ca                                 | arried out at   | a depth of 0.50m  |  |                                       |  |                          | Logged by            | SI                          |
| Symbols and<br>abbreviations are<br>explained on the<br>accompanying | Chalk  <br>Chalk"<br>determi<br>test re<br>Backfi | logged<br>, Apper<br>ined fr<br>esults.<br>11 deta | in accordar<br>ndix B (R.N.<br>com hand pre | Mortimore,<br>essure on states                                    | A Report C574, 20<br>2014, Whittles Pu<br>ndard size sample<br>arisings up to gr                | 02. Flint<br>blishing)<br>s or, whe<br>ound leve | s descr<br>. Intac<br>re unde         | ribed as in "L<br>t dry density<br>rtaken, from 1    | ogging the<br>laboratory | Checked by<br>Figure | CPL<br>1 of 1<br>12/05/2020 |
| key sheet.<br>All dimensions<br>are in metres.                       | Logged in   | accordan   | ce with BS5930:20                           | 015   | J-  |  |                                       |  |                          | िनगानुव              |                             |

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer AECOM 7A COUNTESS

Trial Pit<br/>Project NoSTP<br/>PC19

STP72403 PC197708

| Client HIGHWA  | AYS ENG  | LAND   |   | National Grid 415469<br>Coordinates 142048  | .3 E<br>.4 N   | G   | ound Leve           | el 72.05 m   | OD                               |
|--|--|--|---|---|--|---|---------------------|--|----------------------------------|
| Samples and  | Tests  |  |   | Strata  |  |   |                     | Scale 1  | 25                               |
| Depth  | Туре   | Stratum<br>No  | Results   | Description   |  |   | Depth               | Legend   | Level<br>m OD                    |
| 0.05<br>0.10- 0.40   | D<br>B   |  |   | MADE GROUND: Soft light gr<br>gravelly sandy clay with m<br>to 5mm in size). Gravel is<br>to coarse chalk, flint, pl  | eyish brown slig<br>any rootlets and<br>angular to suba<br>astic and sandst  | ghtly<br>1 roots (up<br>angular fine<br>cone.           | G.L.<br>- 0.10<br>- |  | 72.05<br>71.95                   |
| - 0.30<br>-<br>- 0.50- 0.60<br>- 0.50- 0.60<br>-   | D<br>B<br>D  |  |   | MADE GROUND: Light greyish<br>silty sand with a low suba<br>content. Gravel is angular<br>coarse chalk with occasion<br>size).  | brown slightly<br>ngular chalk col<br>to subangular f<br>al fragments (ug    | gravelly<br>oble<br>fine to<br>p to 60mm in             | -<br>-<br>-         |  |                                  |
| -  | в  |  |   | Between 0.75-0.80m, soft b<br>sandy clay. Gravel is angu<br>coarse sandstone.   | rown slightly g<br>lar to subangula  | ravelly<br>ar fine to                                   | - 0.80              |  | 71.25                            |
| - 1.00- 1.20   | в  |  |   | At 0.80m, geotextile membr  | ane.   |   | -                   |  | 2<br>2<br>2                      |
| 1.20   | D  |  |   | PROBABLE MADE GROUND: Ligh<br>gravel with a medium suban<br>Gravel is angular to suban<br>with occasional flint frag  | t grey sandy ver<br>gular chalk cobb<br>gular fine to co<br>ments (up to 70m | cy silty<br>ble content.<br>barse chalk<br>mm in size). | _ 1.20<br>_         |  | 70.85                            |
|  |  |  |   | End of E  | xcavation  |   |                     |  |                                  |
| -<br>-<br>-<br>-<br>-  |  |  |   |   |  |   | -<br>-<br>-<br>-    |  |                                  |
|  |  |  |   |   | Croundwater  |   | -<br>-<br>-         |  |                                  |
| Excavation   | v  |  |   | Width (B)   | Depth Depth  | Details   |                     |  |                                  |
| Date 25/11/<br>Shoring None  | 2019   |  |   | Length (Ć) 3.00<br>Orientation 086 deg  | Observed of Pit  | None encounter  | ed during           | excavation.  |                                  |
| Stability Stable   | e durin  | ıg exca  | vation.   | Date Backfilled 25/11/2019  |  |   |                     |  |                                  |
| Remarks a factor of the second | A Plate<br>Chalk 1<br>Chalk",<br>letermi<br>cest re<br>Backfil | e Load<br>ogged<br>Apper<br>ned fr<br>sults.<br>l deta | Test was ca<br>in accordan<br>dix B (R.N.<br>om hand pre<br>ils from ba<br>with BS5930:20 | arried out at a depth of 0.50m<br>nce with CIRIA Report C574, 20<br>. Mortimore, 2014, Whittles Pu<br>essure on standard size sample<br>ase of hole: arisings up to gr<br>015 | 02. Flints descr<br>blishing). Intac<br>s or, where unde<br>ound level.      | ribed as in "Lo<br>t dry density<br>ertaken, from ]     | ogging the          | Logged by source of the second | SI<br>CPL<br>L of 1<br>2/05/2020 |

| 7 | rial | Pit |
|---|------|-----|
|   |      |     |

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer 7A COUNTESS

AECOM

Trial Pit Project No STP72404

| SIF/2404 |
|----------|
| PC197708 |

| Client нісни   | AYS ENG  | LAND          |                  | National Grid 415612<br>Coordinates 142102  | 2.7 E<br>2.1 N   |  | G  | round Leve        | el 72.05 m    | OD            |
|--|--|---------------|------------------|---|--|--|--|-------------------|---------------|---------------|
| Samples and  | l Tests  |               |                  | Strata  |  |  |  |                   | Scale 1       | :25           |
| Depth  | Туре   | Stratum<br>No | Results          | Description   |  |  |  | Depth             | Legend        | Level<br>m OD |
| - 0.10<br>-  | D  |               |                  | MADE GROUND: Grass over so<br>slightly gravelly sandy cl<br>roots (up to 10mm in size)<br>subangular fine to coarse<br>fragments. | oft light g<br>Lay with ma<br>). Gravel i<br>chalk, fli  | reyish<br>ny roo<br>s angu<br>nt and   | brown<br>tlets and<br>lar to<br>plastic    | G.L.<br>-<br>0.20 |               | 72.05         |
| -<br>- 0.50- 0.60<br>0.50- 0.60  | B<br>D   |               |                  | MADE GROUND: Light greyish<br>with a low subangular chal<br>angular to subangular fine<br>occasional flint fragments              | h brown san<br>Lk cobble c<br>a to coarse<br>s (up to 10 | ndy sil<br>content<br>chalk<br>00mm in | ty gravel<br>. Gravel is<br>with<br>size). |                   |               |               |
| - 0.80- 1.20<br>-  | в  |               |                  | At 0.65m, subangular grave  | and cobb   | oles of                                | asphalt.                                   | -                 |               |               |
| 1.20   | D  |               |                  | End of F  | Excavation   |  |  | 1.20              |               | 70.85         |
| Excavation   |  |               |                  |   | f Groundv  | vater                                  |  |                   |               |               |
| Plant TOP 3  | CX   |               |                  | Width (B)   | Depth  | Depth                                  | Details                                    |                   |               |               |
| Date JCB 3<br>Date 26/11<br>Shoring None.  | ./2019<br>.e durin   | ng exca       | vation.          | Length (C) 0.90<br>Length (C) 3.00<br>Drientation 070 deg<br>Date Backfilled 25/11/2019   | Observed   | of Pit                                 | None encounte:                             | red during        | g excavation. |               |
| Remarks Ages<br>Symbols and<br>abbreviations are<br>explained on the<br>accompanying<br>key sheet. | Remarks A Plate Load Test was carried out at a depth of 0.50m.<br>Chalk logged in accordance with CIRIA Report C574, 2002. Flints described as in "Logging the Checked by CPL<br>Symbols and<br>Chalk", Appendix B (R.N. Mortimore, 2014, Whittles Publishing). Intact dry density<br>Explained on the<br>accompanying<br>explained on the |               |                  |   |  |  |  |                   |               |               |
| All dimensions are in metres.  | Logged in  | accordanc     | e with BS5930:20 | 15  |  |  |  |                   | <u></u>       |               |

| Pit |
|-----|
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|     |

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer AE

AECOM

Trial PitSTP2Project NoPC197

STP72501 PC197708

| Client HIGHWAYS ENGLAND  |   | National Grid 415357.<br>Coordinates 142007.  | 4 E<br>2 N   | Gr  | ound Leve                                    | 1 70.75 m ( | DD                                      |
|--|---|---|--|---|--|-------------|---|
| Samples and Tests  |   | Strata  |  |   |  | Scale 1:    | 25                                      |
| Depth Type Stratum<br>No   | Results   | Description   |  |   | Depth  | Legend      | Level<br>m OD                           |
| - 0.00-0.12 B<br>- 0.10 D<br>- 0.10 ES<br>0.10 ES<br>0.12-0.30 B<br>- 0.30 D<br>- 0.30 ES<br>- 0.30 ES<br>- 0.30 D<br>- 0.60 D   | PID=3.0 ppm<br>PID=3.3 ppm<br>mc=16%  | MADE GROUND: Grass over sof<br>sandy clay. Gravel is angul<br>coarse chalk and flint.<br>MADE GROUND: Light greyish<br>slightly gravelly silt with<br>cobble content. Gravel is a<br>to coarse chalk with occasi<br>to 50mm in size).<br>Below 0.12m, excavation dif<br>compacted and very dry. | t brown slightl<br>ar to subangula<br>brown slightly<br>a low subangul<br>ngular to suban<br>onal flint frag | y gravelly<br>r fine to<br>sandy<br>ar chalk<br>gular fine<br>ments (up | G.L.<br>7 0.12<br>-<br>-<br>-<br>-<br>-<br>- |             | 70.75                                   |
| -<br>-<br>1.00 ES<br>1.00<br>-<br>1.20 D   | PID=2.6 ppm   | End of Ex   | cavation   |   | -<br>-<br>-<br>-<br>1.20                     |             | 69.55                                   |
|  |   |   |  |   |  |             |   |
| -  |   |   |  |   | -  |             |   |
| Excavation   |   |   | Groundwater  |   |  |             |   |
| Plant Hand Tools<br>Date 26/11/2019  | W<br>Le   | idth (B) 0.60<br>ength (C) 0.60   | Depth Depth<br>Observed of Pit   | Details   |  |             |   |
| Shoring None.<br>Stability stable during exca  | Davation.   | ate Backfilled 26/11/2019   |  | None encounter  | ed during                                    | excavation. |   |
| Remarks A Plate Load<br>Symbols and<br>abbreviations are<br>explained on the<br>accompanying<br>key sheet.<br>All dimensions<br>are in metres.<br>A Plate Load<br>Es sample = 2<br>Chalk logged<br>Chalk ", Apper<br>determined fr<br>test results.<br>Backfill deta | Test was car:<br>2 x vial, 2 x<br>in accordance<br>dix B (R.N. )<br>com hand press<br>ails from base<br>ce with BS5930:2015 | ried out at a depth of 0.30m.<br>plastic jar and 2 x amber ja<br>e with CIRIA Report C574, 200<br>Mortimore, 2014, Whittles Put<br>sure on standard size samples<br>e of hole: arisings up to gro   | r<br>2. Flints descr<br>lishing). Intac<br>s or, where unde<br>pund level.                                   | ibed as in "Lo<br>t dry density<br>rtaken, from l                       | gging the<br>aboratory                       |             | in <b>1</b><br><b>of 1</b><br>2/05/2020 |

HIGHWAYS ENGLAND

Project

Client

Trial Pit

A303 AMESBURY TO BERWICK DOWN - PHASE Engineer 7A COUNTESS

National Grid Coordinates

AECOM

415432.2 142046.8

E N

STP72502 PC197708 Trial Pit Project No

Ground Level 70.89 m OD

| Samples and                                   | l Tests                       |                              |  | Strata   |             | Scale 1:                | :25                        |
|---|-------------------------------|------------------------------|--|--|-------------|-------------------------|----------------------------|
| Depth   | Туре                          | Stratum<br>No                | Results  | Description  | Depth       | Legend                  | Level<br>m OD              |
|   | B<br>D<br>ES                  |                              | PID=2.6ppm                                     | MADE GROUND: Grass over soft light greyish brown<br>slightly gravelly sandy clay with many rootlets.<br>Gravel is angular to subangular fine to coarse chalk,<br>flint and plastic.  | G.L.<br>    |                         | 70.89                      |
| - 0.15- 0.30<br>0.30<br>- 0.30<br>- 0.30<br>- | B<br>D<br>ES                  |                              | PID=3.0ppm                                     | MADE GROUND: Light greyish brown slightly sandy silty<br>gravel with a low subangular chalk cobble content.<br>Gravel is angular to subangular fine to coarse chalk<br>with occasional flint fragments (up to 70mm in size). | -<br>-<br>- |                         | * * * * * *                |
| 0.70- 1.20                                    | в                             |                              |  | Below 0.15m, excavation difficult due to strata being compacted and very dry.  | 0.70        |                         | 70.19                      |
| -<br>   | ES                            |                              | PID=2.0ppm                                     | PROBABLE MADE GROUND: Light greyish brown slightly<br>sandy gravelly silt. Gravel is angular to subangular<br>fine to coarse chalk with occasional flint fragments<br>(up to 60mm in size).                                  |             |                         |                            |
| 1.20  | D                             |                              |  | End of Excavation  | 1.20        |                         | 69.69                      |
| -   |                               |                              |  |  | -           |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
| L   |                               |                              |  |  | _           |                         |                            |
| F   |                               |                              |  |  | -           |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
| F   |                               |                              |  |  | -           |                         |                            |
| F   |                               |                              |  |  | _           |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
|   |                               |                              |  |  | -           |                         |                            |
|   |                               |                              |  |  |             |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
| ļ.  |                               |                              |  |  | -           |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
| F   |                               |                              |  |  | F           |                         |                            |
|   |                               |                              |  |  | _           |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
|   |                               |                              |  |  | -           |                         |                            |
|   |                               |                              |  |  |             |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
|   |                               |                              |  |  | -           |                         |                            |
| -   |                               |                              |  |  | -           |                         |                            |
| F   |                               |                              |  |  | F           |                         |                            |
| Excavation                                    |                               |                              |  | Groundwater  |             |                         | <u> </u>                   |
| Plant Hand<br>Date 26/11                      | Tools<br>/2019                |                              | M<br>L   | /idth (B) 0.60 Depth Depth Details   ength (C) 0.60 Observed of Pit Details  |             |                         |                            |
| Stability Stabl                               | e durin                       | ng exca                      | D<br>avation.                                  | ate Backfilled 26/11/2019  | red during  | g excavation.           |                            |
| Remarks                                       | A Plate<br>ES samp            | e Load<br>ple = 2            | Test was car<br>2 x vial, 2 x                  | ried out at a depth of 0.30m.<br>plastic jar and 2 x amber jar   |             | Logged by<br>Checked by | 3I<br>CPL                  |
| abbreviations are<br>explained on the         | Chalk  <br>Chalk",<br>determ: | Logged<br>, Apper<br>ined fr | in accordance<br>ndix B (R.N.<br>rom hand pres | e with CIRIA Report C574, 2002. Flints described as in "L<br>Mortimore, 2014, Whittles Publishing). Intact dry density<br>sure on standard size samples or, where undertaken, from   | ogging the  |                         | L <b>ot 1</b><br>2/05/2020 |
| accompanying<br>key sheet.                    | test re<br>Backfil            | esults<br>Ll deta            | ails from bas                                  | e of hole: arisings up to ground level.  |             | <u>jaan</u>             | nies                       |
| are in metres.                                | Logged in                     | accordan                     | ce with BS5930:201                             | 5  |             | 7                       |                            |

Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72401 Photo 1



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72401 Photo 2



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72401 Photo 3



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72402 Photo I



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72402 Photo 2



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72402 Photo 3



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72403 Photo I



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72403 Photo 2



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72403 Photo 3



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72403 Photo 4



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72404 Photo I



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72404 Photo 2



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72404 Photo 3



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72501 Photo I



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72501 Photo 2



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72501 Photo 3



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72501 Photo 4



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72502 Photo I



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72502 Photo 2



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72502 Photo 3



Project Number : PC197708

Project : A303 Amesbury to Berwick Down - Phase 7a Countess



STP72502 Photo 4



# **APPENDIX 7**

# Exploratory Hole Location Plan



# **APPENDIX 8**

In Situ Permeability Test Results

| INSITU  | TESTING - Permeability (Borehole)                | Sheet      | Form INS005 Rev<br>Sheet I - Test Details and Measured Value |  |  |  |
|---------|--|------------|--|--|--|--|
| Project | A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTES | Borehole   | BH72402  |  |  |  |
|         |  | Project No | PC197708   |  |  |  |
|         |  | Test No    | I. I.  |  |  |  |
| Client  | Highways England                                 | Date       | 21/11/2019   |  |  |  |

#### Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

| Borehole D   | Details                                  |                             |   | Test Details   |                     |                       |
|--------------|--|-----------------------------|---|--|---------------------|-----------------------|
| Inclination  |  | Vertical                    |   | Test Type  | Variable Head -     | · Falling             |
| Method of D  | Drilling                                 | Cable Perci                 | ussion  | Hydrogeological Conditions                                       | Test Section Sa     | turated               |
| Co-ordinate  | s (m)                                    | E 415190.7                  |   | Type of Filter   | None                |                       |
|              |  | N 142046.7                  |   | Isolation Device   | None                |                       |
| Level (m OE  | <b>D</b> )                               | 70.95                       |   | Test Section Dia. (m)  | 0.20                |                       |
|              |  |                             |   | Measuring Tube Dia. (m)  | 0.20                |                       |
|              |  |                             |   |  |                     |                       |
| Test Meas    | urements                                 |                             |   | Hoight of Cosing /   | <u> </u>            |                       |
| Elapsed Time | Depth of<br>Water below<br>Top of Casing | Elapsed Time<br>(Continued) | Depth of<br>Water below<br>Top of Casing<br>(continued) | Datum above GL<br>(m) = 0.00<br>(negative value if above ground) | ↑ Dat               | um = Top of<br>Casing |
| (minutes)    | (m)                                      | (minutes)                   | (m)   |  |                     | epth to               |
| 0.0          | 0.00                                     |                             |   |  | St St               | tanding<br>Mator      |
| 0.5          | 0.00                                     |                             |   | Depth to to  | pi be               | low GL                |
| 1.0          | 0.00                                     |                             |   | Death to hottom below GL (i                                      | m I                 | (m) = 2.20            |
| 1.5          | 0.00                                     |                             |   | of Test Section )=   |                     |                       |
| 2.0          | 0.00                                     |                             |   | below GL (m )= 4.50  |                     | Standing WL           |
| 2.5          | 0.00                                     |                             |   | Before 4.70  |                     |                       |
| 3.0          | 0.00                                     |                             |   | After 4.70   |                     |                       |
| 3.5          | 0.00                                     |                             |   |  |                     |                       |
| 4.0          | 0.01                                     |                             |   |  |                     |                       |
| 4.5          | 0.01                                     |                             |   |  | V .                 | angth of              |
| 5.0          | 0.01                                     |                             |   |  |                     | t Section             |
| 6.0          | 0.01                                     |                             |   |  |                     | (m) = 0.20            |
| 7.0          | 0.02                                     |                             |   | <u> </u>   | ↓                   |                       |
| 8.0          | 0.02                                     |                             |   |  |                     |                       |
| 9.0          | 0.02                                     |                             |   | Depth to Standing Water Level                                    | below Datum         | 2.20 m                |
| 10.0         | 0.03                                     |                             |   | Depth to Induced Water Level                                     | below Datum         | 0.00 m                |
| 15.0         | 0.04                                     |                             |   | Differential head at start of Test                               | t (H <sub>o)</sub>  | 2.20 m                |
| 20.0         | 0.05                                     |                             |   | Differential Head at end of Test                                 | . (H <sub>f</sub> ) | 2.11 m                |
| 25.0         | 0.05                                     |                             |   | Time Elapsed at end of test $(t_f)$                              |                     | 60.0 mins             |
| 30.0         | 0.06                                     |                             |   | Weather during Test  | Dry                 |                       |
| 40.0         | 0.06                                     |                             |   | Test Carried Out By  | J. Davison          |                       |
| 50.0         | 0.07                                     |                             |   | Test Checked By  | C. Lange            |                       |
| 60.0         | 0.09                                     |                             |   | Description of Test Section                                      | Sand & Gravel       |                       |
|              |  |                             |   |  |                     |                       |
|              |  |                             |   |  |                     |                       |



| INSI    | INSITU TESTING - Permeability (Borehole) |                           |                              |        |        |    |                |                           |                                  |        |                         | VS005 Rev 6<br>- Test Results |
|---------|--|---------------------------|------------------------------|--------|--------|----|----------------|---------------------------|----------------------------------|--------|-------------------------|-------------------------------|
| Project | A303                                     | 3 Amesbu                  | IRY TO BI                    | ERWICK | DOWN - | PF | iase 7á c      | COUNTES                   | Borehole<br>Project N<br>Test No | No     | BH72402<br>PC19770<br>I | 8                             |
| Client  | High                                     | ways Engla                | and                          |        |        |    |                |                           | Date                             |        | 21/11/20                | 19                            |
|         | Test Res                                 | ults                      |                              |        |        |    |                |                           |                                  |        |                         |                               |
|         | Time<br>(mins)                           | Measure<br>d Depth<br>(m) | Relative<br>Depth<br>(m bgl) | Ht (m) | ΔH (m) |    | Time<br>(mins) | Measure<br>d Depth<br>(m) | Relative<br>Depth<br>(m bgl)     | Ht (m) | ΔH (m)                  |                               |
|         | 0.0                                      | 0.00                      | 0.00                         | 2.20   | 0.00   |    | 40.0           | 0.06                      | 0.06                             | 2.14   | 0.97                    |                               |
|         | 0.5                                      | 0.00                      | 0.00                         | 2.20   | 1.00   |    | 50.0           | 0.07                      | 0.07                             | 2.13   | 0.97                    |                               |
|         | 1.0                                      | 0.00                      | 0.00                         | 2.20   | 1.00   |    | 60.0           | 0.09                      | 0.09                             | 2.11   | 0.96                    |                               |
|         | 1.5                                      | 0.00                      | 0.00                         | 2.20   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 2.0                                      | 0.00                      | 0.00                         | 2.20   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 2.5                                      | 0.00                      | 0.00                         | 2.20   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 3.0                                      | 0.00                      | 0.00                         | 2.20   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 3.5                                      | 0.00                      | 0.00                         | 2.20   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 4.0                                      | 0.01                      | 0.01                         | 2.20   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 4.5                                      | 0.01                      | 0.01                         | 2.19   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 5.0                                      | 0.01                      | 0.01                         | 2.19   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 6.0                                      | 0.01                      | 0.01                         | 2.19   | 1.00   |    |                |                           |                                  |        |                         |                               |
|         | 7.0                                      | 0.02                      | 0.02                         | 2.18   | 0.99   |    |                |                           |                                  |        |                         |                               |
|         | 8.0                                      | 0.02                      | 0.02                         | 2.18   | 0.99   |    |                |                           |                                  |        |                         |                               |
|         | 9.0                                      | 0.02                      | 0.02                         | 2.18   | 0.99   |    |                |                           |                                  |        |                         |                               |
|         | 10.0                                     | 0.03                      | 0.03                         | 2.18   | 0.99   |    |                |                           |                                  |        |                         |                               |
|         | 15.0                                     | 0.04                      | 0.04                         | 2.17   | 0.98   |    |                |                           |                                  |        |                         |                               |
|         | 20.0                                     | 0.05                      | 0.05                         | 2.16   | 0.98   |    |                |                           |                                  |        |                         | l                             |
|         | 25.0                                     | 0.05                      | 0.05                         | 2.15   | 0.98   |    |                |                           |                                  |        |                         |                               |
|         | 30.0                                     | 0.06                      | 0.06                         | 2.14   | 0.97   |    |                |                           |                                  |        |                         |                               |

#### Time (minutes)



#### **Remarks and Additional Information**

Depth to standing water taken as the water level recorded immediately prior to the test.



Form INS005 Rev 6

| INSITU  | TESTING - Permeability (Borehole)                | Sheet      | Form INS005 Rev 6<br>Sheet I - Test Details and Measured Values |  |  |  |
|---------|--|------------|---|--|--|--|
| Project | A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTES | Borehole   | BH72405   |  |  |  |
|         |  | Project No | PC197708  |  |  |  |
|         |  | Test No    | I. I                        |  |  |  |
| Client  | Highways England                                 | Date       | 27/11/2019  |  |  |  |

#### Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:201

| Borehole           | Details                                  |                  |                             |   | Test Details                                |   |                        |              |             |                  |
|--------------------|--|------------------|-----------------------------|---|---|---|------------------------|--------------|-------------|------------------|
| Inclination        |  |                  | Vertical                    |   | Test Type                                   |   | Varia                  | able Hea     | d - Falling |                  |
| Method of Drilling |  | Cable Percussion |                             | Hydrogeological Conditions                              |   | Test Section Saturated                                  |                        |              |             |                  |
| Co-ordinate        | s (m)                                    | Е                | 415625.7                    |   | Type of Filter                              |   | Non                    | e            |             |                  |
|                    |  | Ν                | 142095.6                    |   | Isolation Device                            | 9   | Non                    | e            |             |                  |
| Level (m OE        | D)                                       |                  | 72.30                       |   | Test Section Di                             | a. (m)  | 0.20                   |              |             |                  |
|                    |  |                  |                             |   | Measuring Tube                              | e Dia. (m)  | 0.20                   |              |             |                  |
|                    |  |                  |                             |   |   |   |                        |              |             |                  |
| Test Meas          | urements                                 |                  |                             |   |   |   |                        |              |             |                  |
| Elapsed Time       | Depth of<br>Water below<br>Top of Casing |                  | Elapsed Time<br>(Continued) | Depth of<br>Water below<br>Top of Casing<br>(continued) | Height o<br>Datum a<br>(m<br>(negative valu | t Casing 7<br>bove GL<br>) = 0.00<br>e if above ground) | <b>∧</b>               | ]            | Datum =     | Top of<br>Casing |
| (minutes)          | (m)                                      |                  | (minutes)                   | (m)   |   | 1   | <u>.</u>               | <u>- 7</u>   | Depth to    |                  |
| 0.0                | 0.00                                     |                  |                             |   |   |   |                        |              | Standing    |                  |
| 1.0                | 0.01                                     |                  |                             |   |   | Depth to top  | i<br>I                 |              | below GL    |                  |
| 2.0                | 0.02                                     |                  |                             |   | Dopth to bottom                             | below GL (m   | 1                      |              | (m) =       | 3.25             |
| 3.0                | 0.02                                     |                  |                             |   | of Test Section                             | )=  |                        |              |             |                  |
| 4.0                | 0.02                                     |                  |                             |   | below GL (m )=                              | 4.50  |                        | $\downarrow$ | 🖌 Standi    | ng WL            |
| 5.0                | 0.02                                     |                  |                             |   | Before 4.80                                 |   | İ                      |              | -           |                  |
| 6.0                | 0.02                                     |                  |                             |   | After 4.80                                  |   |                        |              |             |                  |
| 8.0                | 0.02                                     |                  |                             |   |   |   |                        |              |             |                  |
| 10.0               | 0.02                                     |                  |                             |   |   |   |                        |              |             |                  |
| 15.0               | 0.03                                     |                  |                             |   |   |   | v L                    |              | Length of   |                  |
| 20.0               | 0.04                                     |                  |                             |   |   |   |                        | 1            | Section (m) |                  |
| 25.0               | 0.04                                     |                  |                             |   |   |   |                        |              | =           | 0.30             |
| 30.0               | 0.05                                     |                  |                             |   |   | <u> </u>  |                        | V            |             |                  |
| 35.0               | 0.05                                     |                  |                             |   |   |   |                        |              |             |                  |
| 40.0               | 0.05                                     |                  |                             |   | Depth to Standing                           | g Water Level be  | elow D                 | Datum        | 3.25        | 5 m              |
| 50.0               | 0.06                                     |                  |                             |   | Depth to Induced                            | Water Level be  | low D                  | atum         | 0.00        | ) m              |
| 60.0               | 0.06                                     |                  |                             |   | Differential head                           | at start of Test (                                      | H <sub>o)</sub>        |              | 3.25        | 5 m              |
|                    |  |                  |                             |   | Differential Head                           | at end of Test (H                                       | (H <sub>f</sub> ) 3.19 |              |             | ) m              |
|                    |  |                  |                             |   | Time Elapsed at e                           | end of test (t <sub>f</sub> )                           |                        |              | 60.0        | ) mins           |
|                    |  |                  |                             |   | Weather during                              | g Test  | Dry                    |              |             |                  |
|                    |  |                  |                             |   | Test Carried O                              | ut By   | DC                     | owling       |             |                  |
|                    |  |                  |                             |   | Test Checked B                              | 8y  | C. Lange               |              |             |                  |
|                    |  |                  |                             |   | Description of                              | Sandy slightly silty GRAVEL with a low cobble content.  |                        |              |             |                  |
|                    |  |                  |                             |   |   |   |                        |              |             |                  |



| Project | A30          | BH72405    |          |        |        |            |         |           |        |          |  |
|---------|--------------|------------|----------|--------|--------|------------|---------|-----------|--------|----------|--|
|         |              |            |          |        |        |            |         | Project N | No     | PC197708 |  |
|         |              |            |          |        |        |            |         | Test No   |        | I        |  |
| Client  | High         | ways Engla | nd       | Date   |        | 27/11/2019 |         |           |        |          |  |
|         | Test Results |            |          |        |        |            |         |           |        |          |  |
|         | Time         | Measure    | Relative | Ht (m) | ∆H (m) | Time       | Measure | Relative  | Ht (m) | ∆H (m)   |  |
|         | (mins)       | d Depth    | Depth    |        |        | (mins)     | d Depth | Depth     |        |          |  |
|         |              | (m)        | (m bgl)  |        |        |            | (m)     | (m bgl)   |        |          |  |
|         | 0.0          | 0.00       | 0.00     | 3.25   | 0.00   |            |         |           |        |          |  |
|         | 1.0          | 0.01       | 0.01     | 3.24   | 1.00   |            |         |           |        |          |  |
|         | 2.0          | 0.02       | 0.02     | 3.24   | 1.00   |            |         |           |        |          |  |
|         | 3.0          | 0.02       | 0.02     | 3.23   | 0.99   |            |         |           |        |          |  |
|         | 4.0          | 0.02       | 0.02     | 3.23   | 0.99   |            |         |           |        |          |  |
|         | 5.0          | 0.02       | 0.02     | 3.23   | 0.99   |            |         |           |        |          |  |
|         | 6.0          | 0.02       | 0.02     | 3.23   | 0.99   |            |         |           |        |          |  |
|         | 8.0          | 0.02       | 0.02     | 3.23   | 0.99   |            |         |           |        |          |  |
|         | 10.0         | 0.02       | 0.02     | 3.23   | 0.99   |            |         |           |        |          |  |
|         | 15.0         | 0.03       | 0.03     | 3.22   | 0.99   |            |         |           |        |          |  |
|         | 20.0         | 0.04       | 0.04     | 3.21   | 0.99   |            |         |           |        |          |  |
|         | 25.0         | 0.04       | 0.04     | 3.21   | 0.99   |            |         |           |        |          |  |
|         | 30.0         | 0.05       | 0.05     | 3.21   | 0.99   |            |         |           |        |          |  |
|         | 35.0         | 0.05       | 0.05     | 3.20   | 0.99   |            |         |           |        |          |  |
|         | 40.0         | 0.05       | 0.05     | 3.20   | 0.98   |            |         |           |        |          |  |
|         | 50.0         | 0.06       | 0.06     | 3.20   | 0.98   |            |         |           |        |          |  |
|         | 60.0         | 0.06       | 0.06     | 3.19   | 0.98   |            |         |           |        |          |  |
|         |              |            |          |        |        |            |         |           |        |          |  |
|         |              |            |          |        |        |            |         |           |        |          |  |
|         |              |            |          |        |        |            |         |           |        |          |  |



#### **Remarks and Additional Information**

Depth to standing water taken as the water level recorded immediately prior to the test.



Form INS005 Rev 6

# **APPENDIX 9**

**Plate Load Tests Results**


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: HS3557-3 Client: Geotechnics Ltd Address: Unit 1 Borders Industrail Park, River Lane, Saltney, Chester, CH4 8RJ Site: A303 Stonehenge, SP4 7HW

### Test Details

Test Location: STP72401 Description: White Chalk Material Class: Formation Layer: 0.5M BGL

### Date of Test: 25/11/2019 Reaction Load: 8 Tonne Excavator Weather & Ambient Temp. (°C): Wet Plate Diameter (mm): 297

Report Date: 25/11/2019

## **Test Results**

| Time (s) | Settlement | Plate Stress         |
|----------|------------|----------------------|
|          | (mm)       | (kN/m <sup>2</sup> ) |
| 0        | 0.00       | 24                   |
| 180      | 0.25       | 73                   |
| 360      | 0.51       | 123                  |
| 540      | 0.73       | 183                  |
| 720      | 0.98       | 258                  |
| 900      | 1.42       | 349                  |
| 1080     | 1.22       | 2                    |

| Maximum Applied Stress (kN/m <sup>2</sup> ):              | 349  |
|---|------|
| Maximum Settlement (mm):                                  | 1.42 |
| Equivalent CBR Value (%):                                 | 33   |
| Modulus of Subgrade Reaction, k <sub>762</sub> (MN/m2/m): | 110  |

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



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: HS3557-1r1 Client: Geotechnics Ltd Address: Unit 1 Borders Industrail Park, River Lane, Saltney, Chester, CH4 8RJ Site: A303 Stonehenge, SP4 7HW

### Test Details

Test Location: STP72402 Description: White Chalk Material Class: Formation Layer: 0.5M BGL

## Date of Test: 25/11/2019 Reaction Load: 8 Tonne Excavator Weather & Ambient Temp. (°C): Wet Plate Diameter (mm): 297

Report Date: 26/11/2019

### **Test Results**

| Time (s) | Settlement | Plate Stress         |
|----------|------------|----------------------|
|          | (mm)       | (kN/m <sup>2</sup> ) |
| 0        | 0.00       | 24                   |
| 180      | 0.28       | 178                  |
| 360      | 0.49       | 275                  |
| 540      | 0.75       | 447                  |
| 720      | 1.07       | 620                  |
| 900      | 1.26       | 708                  |
| 1080     | 1.16       | 2                    |

| Maximum Applied Stress (kN/m <sup>2</sup> ):              | 708  |
|---|------|
| Maximum Settlement (mm):                                  | 1.26 |
| Equivalent CBR Value (%):                                 | 135  |
| Modulus of Subgrade Reaction, k <sub>762</sub> (MN/m2/m): | 247  |

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)

Note: Location amended



Settlement/Time



For and on Behalf of Hixtra Ltd



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: HS3557-2 Client: Geotechnics Ltd Address: Unit 1 Borders Industrail Park, River Lane, Saltney, Chester, CH4 8RJ Site: A303 Stonehenge, SP4 7HW

### Test Details

Test Location: STP72403 Description: Grey gravelly Chalk Material Class: Formation Layer: 0.5M BGL Report Date: 25/11/2019

Date of Test: 25/11/2019 Reaction Load: 8 Tonne Excavator Weather & Ambient Temp. (°C): Wet Plate Diameter (mm): 297

### **Test Results**

| Time (s) | Settlement | Plate Stress         |
|----------|------------|----------------------|
|          | (mm)       | (kN/m <sup>2</sup> ) |
| 0        | 0.00       | 24                   |
| 360      | 0.95       | 43                   |
| 660      | 1.77       | 57                   |
| 960      | 2.70       | 71                   |
| 1380     | 5.30       | 86                   |
| 1740     | 7.81       | 100                  |
| 1860     | 6.85       | 2                    |

| Maximum Applied Stress (kN/m <sup>2</sup> ):              | 100  |
|---|------|
| Maximum Settlement (mm):                                  | 7.81 |
| Equivalent CBR Value (%):                                 | 1    |
| Modulus of Subgrade Reaction, k <sub>762</sub> (MN/m2/m): | 17   |

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)



Settlement/Time



For and on Behalf of Hixtra Ltd





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: HS3567-1 Client: Geotechnics Ltd Address: Unit 1 Borders Industrail Park, River Lane, Saltney, Chester, CH4 8RJ Site: A303 Stonehenge, SP4 7HW

### Test Details

Test Location: STP72404 Description: White Chalk Material Class: Formation Layer: 0.5M BGL

### Date of Test: 26/11/2019 Reaction Load: 8 Tonne Excavator Weather & Ambient Temp. (°C): Wet Plate Diameter (mm): 297

Report Date: 26/11/2019

### **Test Results**

| Time (s) | Settlement | Plate Stress         |
|----------|------------|----------------------|
|          | (mm)       | (kN/m <sup>2</sup> ) |
| 0        | 0.00       | 24                   |
| 180      | 0.31       | 93                   |
| 360      | 0.66       | 158                  |
| 540      | 0.98       | 217                  |
| 720      | 1.32       | 298                  |
| 900      | 1.64       | 377                  |
| 1080     | 1.25       | 4                    |

| Maximum Applied Stress (kN/m <sup>2</sup> ):  | 377  |
|---|------|
| Maximum Settlement (mm):                      | 1.64 |
| Equivalent CBR Value (%):                     | 28   |
| Modulus of Subgrade Reaction, k762 (MN/m2/m): | 99   |

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



01908 505 833

Certificate for the Determination of the Equivalent CBR Value of Soil by the Incremental of Plate Loading Test to BS 1377 Part 9: 1990

Report No: HS3567-2 Client: Geotechnics Ltd Address: Unit 1 Borders Industrail Park, River Lane, Saltney, Chester, CH4 8RJ Site: A303 Stonehenge, SP4 7HW

### Test Details

Test Location: STP72501 Description: White Chalk Material Class: Formation Layer: 0.3M BGL

### Date of Test: 26/11/2019 Reaction Load: 8 Tonne Excavator Weather & Ambient Temp. (°C): Wet Plate Diameter (mm): 297

Report Date: 26/11/2019

### **Test Results**

| Time (s) | Settlement | Plate Stress |
|----------|------------|--------------|
|          | (mm)       | $(kN/m^2)$   |
| 0        | 0.00       | 24           |
| 180      | 0.48       | 82           |
| 360      | 0.76       | 123          |
| 540      | 1.12       | 175          |
| 720      | 1.45       | 213          |
| 900      | 1.74       | 237          |
| 1080     | 1.06       | 4            |

| Maximum Applied Stress (kN/m <sup>2</sup> ):              | 237  |
|---|------|
| Maximum Settlement (mm):                                  | 1.74 |
| Equivalent CBR Value (%):                                 | 14   |
| Modulus of Subgrade Reaction, k <sub>762</sub> (MN/m2/m): | 67   |

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



01908 505 833

# Certificate for the Determination of the Equivalent CBR Value of Soil by the Incremental of Plate Loading Test to BS 1377 Part 9: 1990

Report No: HS3567-3 Client: Geotechnics Ltd Address: Unit 1 Borders Industrail Park, River Lane, Saltney, Chester, CH4 8RJ Site: A303 Stonehenge, SP4 7HW

### Test Details

Test Location: STP72502 Description: White Chalk Material Class: Formation Layer: 0.3M BGL

## Date of Test: 26/11/2019 Reaction Load: 8 Tonne Excavator Weather & Ambient Temp. (°C): Wet Plate Diameter (mm): 297

Report Date: 26/11/2019

### **Test Results**

| Time (s) | Settlement | Plate Stress         |
|----------|------------|----------------------|
|          | (mm)       | (kN/m <sup>2</sup> ) |
| 0        | 0.00       | 24                   |
| 180      | 0.34       | 92                   |
| 360      | 0.62       | 118                  |
| 540      | 1.03       | 151                  |
| 720      | 1.32       | 171                  |
| 900      | 1.67       | 206                  |
| 1080     | 0.79       | 5                    |

| Maximum Applied Stress (kN/m <sup>2</sup> ):  | 206  |
|---|------|
| Maximum Settlement (mm):                      | 1.67 |
| Equivalent CBR Value (%):                     | 11   |
| Modulus of Subgrade Reaction, k762 (MN/m2/m): | 58   |

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)





0.00 0.50 1.00 1.50 2.00 Settlement (mm)

For and on Behalf of Hixtra Ltd

Kevin Shorthouse Project Manager Time (s)

200

0



# **APPENDIX 10**

# Laboratory Test Results - Geotechnical

### **Classification and Strength** Symbol C - Clay М-Silt (0 - containing organic matter) Plasticity L -Low 1 Intermediate H - High V Very High -Extremely High Е lр **Plasticity Index** % % retained on 425 µm sieve, shown under lp value Liquid Limit W **Plastic Limit** WP NP Non-Plastic NAT Sample tested in natural state Water Content w Particle Density Pd Quick undrained triaxial tests Test 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/cm<sup>2</sup>)
- NST Not suitable for test
- $\gamma_b$  Bulk Density
- σ<sub>3</sub> Triaxial Cell Pressure
- $\sigma_1 \sigma_3$  Deviator Stress
- ## Excessive Strain
- c<sub>u</sub> Undrained Cohesion
- c Cohesion Intercept
- φ Angle of Shearing Resistance
- Linear Linear Shrinkage Shrink

Stab add- Stabiliser which is added

# Consolidation

| m <sub>v</sub>   | Coefficient of Volume Compressibility |
|------------------|---------------------------------------|
| C <sub>v50</sub> | Coefficient of Consolidation - Log t  |

 $c_{v50}$  Coefficient of Consolidation - Log  $c_{v90}$  Coefficient of Consolidation -  $\sqrt{t}$ 

## Rock

UF Unacceptable Failure

## **Chemical Analysis**

| Acid Soluble    | Total sulphate in specimen, expressed as SO3 %, value in brackets expressed as SO4 $\%$  |
|-----------------|--|
| Water Soluble   | Soluble sulphate in 2:1 water : soil<br>extract, expressed as SO <sub>3</sub> g/l, value in<br>brackets expressed as SO <sub>4</sub> g/l |
| In Water        | Sulphate content of groundwater, expressed as $SO_3$ g/l, value in brackets expressed as $SO_4$ g/l                                      |
| pН              | 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          | Moistı<br>water | ire<br>cor  | Condition Value at natural<br>ntent                    |
|--------------|-----------------|-------------|--|
| MCC          | Moistu          | ire         | Condition Calibration                                  |
| CCV          | Chalk           | Cri         | ushing Value   |
| Compac       | tion            |             |  |
| Туре         | 2.5<br>4.5<br>V | =<br>=<br>= | 2.5 kg Rammer<br>4.5 kg Rammer<br>Vibrating Hammer     |
| $\gamma_{b}$ | Bulk D          | en          | sity   |
| $\gamma_{d}$ | Dry D           | ens         | ity  |
| CBR Ca       | lifornia        | В           | earing Ratio   |
| Туре         | 2.5             | =           | Test on Specimen<br>Recompacted using<br>2.5 kg Rammer |
|              | 4.5             | =           | As above but using<br>4.5 kg Rammer                    |
|              | ۷               | =           | As above but using<br>Vibrating Hammor                 |
|              | Μ               | =           | Test on open drive mould                               |
|              | S               | =           | Soaked Specimen  |
| Тор          | CBR a           | t to        | op of mould  |
| Bottom       | CBR a           | t bo        | ottom of mould   |
| ND           | None            | De          | tected   |

\* In the Sample Description denotes a laboratory only description

# Laboratory Test Certificate

| Issued To                                | Geotechnics Ltd  | Date of issue         | 29/01/2          | 2020      |
|--|--|-----------------------|------------------|-----------|
|  | The Geotechnical Centre                                    | Issue No.             | 1                |           |
|  | 203 Torrington Avenue                                      | Client Ref. No.       | -                |           |
|  | Tile Hill  | Samples / Materia     | I Source         |           |
|  | Coventry, CV4 9AP  | Samples Recv'd        | 02/12/19 TO      | 18/12/19  |
| Testing Start Date                       | 02/12/2019   | Sample State          | As rece          | eived     |
| Testing Complete                         | 29/01/2020   | Sampled by            | Geotechnic       | s Limited |
| Comments                                 | Rock Moisture Content performed according In-Hou<br>Method | use procedure, not to | IRSM accred      | ited      |
| Project No                               | PC197708   |                       |                  |           |
| Project Name                             | A303 AMESBURY TO BERWICK DOWN - PHASE                      | 7A COUNTESS           |                  |           |
|  | Summary of Tests   |                       |                  |           |
| Standard                                 | Test Description   |                       | Test<br>Quantity | UKAS      |
| BS EN ISO 17892-1:2014                   | Water Content  | 48                    | Yes              |           |
| BS EN ISO 17892-12:2018<br>Cl. 5.3 & 5.5 | Liquid Limit and Plastic Limit                             |                       | 15               | Yes       |
| BS 1377-7:1990<br>Cl. 9                  | Shear Strength by Quick Undrained Triaxial Test            | - Multistage          | 6                | Yes       |
| BS 1377-2:1990<br>Cl. 3.3                | Saturation Moisture Content of Chalk                       |                       | 44               | Yes       |
| ISRM Suggested Method<br>(1985)          | Point Load Strength of Rock                                |                       | 6                | Yes       |
| BS EN ISO 17892-4:2016<br>Cl. 5.2        | Particle Size Distribution by Sieving Meth                 | od                    | 39               | Yes       |
| BS EN ISO 17892-4:2016<br>Cl. 5.4        | Particle Size Distribution by Pipette Meth                 | od                    | 31               | Yes       |
| BS EN ISO 17892-5:2017                   | Incremental Loading Oedometer                              |                       | 5                | Yes       |
|  |  |                       |                  |           |
|  |  |                       |                  |           |
|  |  |                       |                  |           |
|  |  |                       |                  |           |
|  |  |                       |                  |           |
|  |  |                       |                  |           |
|  |  |                       |                  |           |

Note: Any descriptions, opinions or interpretations are outside the scope of UKAS accreditation.





Test Results checked and approved for issue. Signed for and on behalf of Geotechnics Limited





203 Torrington Avenue, Tile Hill, Coventry, CV4 9UT

Stephane Schiano (Laboratory Testing Manager)

# Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sampl   | е                                    |                              |  |  | Cla     | ssific                          | atio                | n       |                             | Str  | rength                           |                                     |                    |                                     |                          |
|---------|--------------------------------------|------------------------------|--|--|---------|---------------------------------|---------------------|---------|-----------------------------|------|----------------------------------|-------------------------------------|--------------------|-------------------------------------|--------------------------|
| Hole    | Depth<br>(Specimer<br>Depth)<br>M    | Туре                         | Sample<br>Ref                                  | Description  | Symbol  | l I <sub>p</sub><br>(>425)<br>% | w <sub>L</sub><br>% | wp<br>% | w<br>(p <sub>d</sub> )<br>% | Test | $\gamma_b \ (\gamma_d) \ Mg/m^3$ | σ <sub>3</sub><br>kN/m <sup>2</sup> | თ¦−თკ<br>kN/m²     | C <sub>u</sub><br>kN/m <sup>2</sup> | C <sub>Avg</sub><br>kN/m |
| BH72402 | 3.00<br>(3.00)                       | D                            | C30312   | Brownish green slightly sandy slightly gravelly CLAY.  | CI      | 29<br>(32%)                     | 50                  | 21      | 25.4                        |      |                                  |                                     |                    |                                     |                          |
| BH72402 | 4.00<br>(4.00)                       | D                            | C30319   | Light brown very sandy slightly clayey GRAVEL.   |         |                                 |                     |         | 17.3                        |      |                                  |                                     |                    |                                     |                          |
| BH72402 | 17.50-<br>17.95<br>(17.50-<br>17.60) | UT                           | C30812   | See Detailed Sample Description.   |         |                                 |                     |         | 26.7<br>26.7<br>26.7        | MS   | 1.99<br>1.99<br>1.99             | 170<br>340<br>680                   | 577<br>822<br>1101 | 289<br>411<br>550                   | 417                      |
| BH72402 | 18.95-<br>19.00<br>(18.95)           | D                            | C30747   | CHALK.   |         |                                 |                     |         | 26.9                        |      |                                  |                                     |                    |                                     |                          |
| BH72402 | 19.50-<br>19.95<br>(19.50-<br>19.65) | UT                           | C30811   | See Detailed Sample Description.   |         |                                 |                     |         | 24.4<br>24.4<br>24.4        | MS   | 2.02<br>2.02<br>2.02             | 190<br>380<br>760                   | 335<br>392<br>448  | 167<br>196<br>224                   | 196                      |
| BH72402 | 19.95-<br>20.00<br>(19.95)           | D                            | C30750   | CHALK.   |         |                                 |                     |         | 27.5                        |      |                                  |                                     |                    |                                     |                          |
| BH72403 | 1.00-<br>1.10<br>(1.00)              | D                            | C30123   | PROBABLE MADE GROUND: White<br>very gravelly silty sand with a low cobble<br>content.  |         |                                 |                     |         | 20.9                        |      |                                  |                                     |                    |                                     |                          |
| BH72403 | 3.00<br>(3.00)                       | D                            | C30322   | Brown sandy slightly clayey GRAVEL.  |         | (78%)                           | 25                  | NP      | 22.8                        |      |                                  |                                     |                    |                                     |                          |
| BH72403 | 19.00-<br>19.40<br>(19.00)           | D                            | C30591   | CHALK.   |         |                                 |                     |         | 26.1                        |      |                                  |                                     |                    |                                     |                          |
| BH72404 | 1.20-<br>1.65<br>(1.20)              | D                            | C30632   | PROBABLE MADE GROUND: Light<br>greyish brown slightly sandy slightly<br>gravelly clay.   | CL      | 13<br>(48%)                     | 28                  | 15      | 14.4                        |      |                                  |                                     |                    |                                     |                          |
| BH72404 | 2.80<br>(2.80)                       | D                            | C30631   | Greyish green slightly sandy gravelly CLAY.  | CI      | 18<br>(63%)                     | 38                  | 20      | 19.7                        |      |                                  |                                     |                    |                                     |                          |
| BH72404 | 3.80<br>(3.80)                       | D                            | C30636   | Light brownish green sandy slightly clayey GRAVEL.   |         |                                 |                     |         | 16.4                        |      |                                  |                                     |                    |                                     |                          |
| BH72404 | 15.55-<br>16.00<br>(15.60)           | UT                           | C30566   | See Detailed Sample Description Sheet.   |         |                                 |                     |         | 29.7<br>29.7<br>29.7        | MS   | 1.84<br>1.84<br>1.84             | 150<br>300<br>600                   | 373<br>588<br>824  | 187<br>294<br>412                   | 298                      |
| BH72404 | 18.80-<br>19.25<br>(19.05)           | UT                           | C30815   | See Detailed Sample Description Sheet.   |         |                                 |                     |         | 26.8<br>26.8<br>26.8        | MS   | 2.01<br>2.01<br>2.01             | 190<br>380<br>760                   | 319<br>327<br>341  | 160<br>164<br>170                   | 165                      |
| BH72404 | 20.40-<br>20.85<br>(20.45)           | UT                           | C30814   | See Detailed Sample Description Sheet.   |         |                                 |                     |         | 26.9<br>26.9<br>26.9        | MS   | 2.03<br>2.03<br>2.03             | 200<br>400<br>800                   | 707<br>853<br>941  | 354<br>427<br>471                   | 417                      |
| Remar   | ks <mark>ARS</mark>                  | NST -<br>For Si<br>w%<br>QUT | - Not suit<br>tandards<br>^ = Rock<br>Water Co | able for Test<br>followed see Laboratory Test Certficate<br>water content test; x = Aggregate moisture<br>ontents: <failure zone="">, [After test]</failure> | e conte | nt test                         |                     |         |                             | ge   | <b>SEC</b>                       |                                     |                    | NIC<br>ental spec                   | <b>S</b>                 |

# Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sampl   | е                                 |                       |  |  | Cla     | ssific                          | atio                | n                   |                             | Sti  | rength   |                                     |                |                                     |                          |
|---------|-----------------------------------|-----------------------|--|--|---------|---------------------------------|---------------------|---------------------|-----------------------------|------|--|-------------------------------------|----------------|-------------------------------------|--------------------------|
| Hole    | Depth<br>(Specimer<br>Depth)<br>m | Туре                  | Sample<br>Ref                                  | Description  | Symbo   | l l <sub>p</sub><br>(>425)<br>% | w <sub>L</sub><br>% | w <sub>p</sub><br>% | w<br>(p <sub>d</sub> )<br>% | Test | $\begin{array}{c} \gamma_b \\ (\gamma_d) \\ \text{Mg/m}^3 \end{array}$ | σ <sub>3</sub><br>kN/m <sup>2</sup> | σ₁−σ₃<br>kN/m² | C <sub>u</sub><br>kN/m <sup>2</sup> | C <sub>Avg</sub><br>kN/m |
| BH72405 | 1.10-<br>1.20<br>(1.10)           | D                     | C30576   | PROBABLE MADE GROUND: Cream slightly sandy gravelly SILT.  |         | (54%)                           | 29                  | NP                  | 13.5                        |      |  |                                     |                |                                     |                          |
| BH72405 | 3.50-<br>3.60<br>(3.50)           | D                     | C30629   | Greenish grey mottled brown slightly gravelly sandy CLAY.  | CI      | 20<br>(26%)                     | 41                  | 21                  | 27.5                        |      |  |                                     |                |                                     |                          |
| BH72405 | 4.80-<br>4.90<br>(4.80)           | D                     | C30627   | Brown and grey sandy slightly silty GRAVEL.  |         |                                 |                     |                     | 6.9                         |      |  |                                     |                |                                     |                          |
| BH72405 | 16.50-<br>16.95<br>(16.50)        | D                     | C30719   | CHALK.   |         |                                 |                     |                     | 27.7                        |      |  |                                     |                |                                     |                          |
| BH72405 | 17.50-<br>17.95<br>(17.50)        | D                     | C30721   | CHALK.   |         |                                 |                     |                     | 24.9                        |      |  |                                     |                |                                     |                          |
| BH72405 | 19.00-<br>19.33<br>(19.00)        | D                     | C30720   | CHALK.   |         |                                 |                     |                     | 25.7                        |      |  |                                     |                |                                     |                          |
| BH72406 | 1.80-<br>1.90<br>(1.80)           | D                     | C30611   | MADE GROUND: Cream slightly sandy slightly sandy slightly gravelly silt.   |         | (39%)                           | 31                  | NP                  | 28.9                        |      |  |                                     |                |                                     |                          |
| BH72406 | 4.90-<br>5.00<br>(4.90)           | D                     | C30580   | POSSIBLE MADE GROUND: Soft<br>greyish brown mottled grey slightly sandy<br>gravelly CLAY.  | CI      | 25<br>(52%)                     | 43                  | 18                  | 36.7                        |      |  |                                     |                |                                     |                          |
| BH72406 | 6.30-<br>6.40<br>(6.30)           | D                     | C30581   | Grey and brown sandy slightly silty GRAVEL.  |         |                                 |                     |                     | 6.3                         |      |  |                                     |                |                                     |                          |
| BH72406 | 19.50-<br>19.95<br>(19.50)        | UT                    | C30564   | See Detailed Sample Description Sheet.   |         |                                 |                     |                     | 30.3<br>30.3<br>30.3        | MS   | 1.95<br>1.95<br>1.95   | 190<br>380<br>760                   | 250            | 125<br>##                           | 125                      |
| BH72501 | 3.00<br>(3.00)                    | D                     | C30669   | Brownish green slightly gravelly sandy CLAY.   | CI      | 20<br>(27%)                     | 36                  | 16                  | 20.9                        |      |  |                                     |                |                                     |                          |
| BH72501 | 4.00<br>(4.00)                    | D                     | C30668   | Brownish green very sandy very clayey<br>GRAVEL.   |         |                                 |                     |                     | 22.9                        |      |  |                                     |                |                                     |                          |
| BH72501 | 21.40-<br>22.90<br>(21.40)        | D                     | C30876   | CHALK.   |         |                                 |                     |                     | 22.3                        |      |  |                                     |                |                                     |                          |
| BH72501 | 23.60-<br>23.77<br>(23.60)        | С                     | C30776   | CHALK.   |         |                                 |                     |                     | 25.4                        |      |  |                                     |                |                                     |                          |
| BH72501 | 26.97-<br>27.15<br>(26.97)        | C                     | C30777   | CHALK.   |         |                                 |                     |                     | 26.0                        |      |  |                                     |                |                                     |                          |
|         |                                   |                       |  |  |         |                                 |                     |                     |                             |      |  |                                     |                |                                     |                          |
| Remar   | ks 🖶                              | NST<br>For St<br>w% - | - Not suit<br>tandards<br>^ = Rock<br>Water Co | able for Test<br>followed see Laboratory Test Certficate<br>water content test; x = Aggregate moisture<br>ontents: <failure zone="">, [After test]</failure> | e conte | nt test                         |                     |                     |                             | ge   | otechnical   | and geo                             |                | NIC<br>ental spec                   | Cialists                 |

# Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sample       | e                                 |                       |  |  | Cla     | ssific                          | atio                | n       |                             | Sti  | rength   |                                     |                |                                     |                          |
|--------------|-----------------------------------|-----------------------|--|--|---------|---------------------------------|---------------------|---------|-----------------------------|------|--|-------------------------------------|----------------|-------------------------------------|--------------------------|
| Hole         | Depth<br>(Specimer<br>Depth)<br>M | Туре                  | Sample<br>Ref                                  | Description  | Symbo   | l I <sub>p</sub><br>(>425)<br>% | w <sub>L</sub><br>% | wp<br>% | w<br>(p <sub>d</sub> )<br>% | Test | $\begin{array}{c} \gamma_b \\ (\gamma_d) \\ \text{Mg/m} \end{array}$ | σ <sub>3</sub><br>kN/m <sup>2</sup> | σ₁−σ₃<br>kN/m² | C <sub>u</sub><br>kN/m <sup>2</sup> | C <sub>Avg</sub><br>kN/m |
| BH72502      | 2.00-<br>2.10<br>(2.00)           | D                     | C30717   | PROBABLE MADE GROUND: White,<br>locally light brown, slightly sandy slightly<br>gravelly silt.   |         |                                 |                     |         | 23.3                        |      |  |                                     |                |                                     |                          |
| BH72502      | 3.00-<br>3.10<br>(3.00)           | D                     | C30875   | Greyish brown slightly sandy gravelly<br>CLAY with a low cobble content.   | CL      | 16<br>(60%)                     | 31                  | 15      | 10.9                        |      |  |                                     |                |                                     |                          |
| BH72502      | 4.30-<br>4.40<br>(4.30)           | D                     | C30709   | Greyish brown sandy GRAVEL.  |         |                                 |                     |         | 5.6                         |      |  |                                     |                |                                     |                          |
| BH72502      | 17.67-<br>17.75<br>(17.67)        | С                     | C30780   | CHALK.   |         |                                 |                     |         | 23.3                        |      |  |                                     |                |                                     |                          |
| BH72502      | 18.53-<br>18.63<br>(18.53)        | С                     | C30782   | CHALK.   |         |                                 |                     |         | 25.6                        |      |  |                                     |                |                                     |                          |
| BH72502      | 19.35-<br>20.50<br>(19.35)        | С                     | C30783   | CHALK.   |         |                                 |                     |         | 24.1                        |      |  |                                     |                |                                     |                          |
| BH72502      | 21.92-<br>22.00<br>(21.92)        | С                     | C30819   | CHALK.   |         |                                 |                     |         | 24.2                        |      |  |                                     |                |                                     |                          |
| BH72504      | 3.00<br>(3.00)                    | D                     | C30341   | Light greenish grey sandy slightly clayey<br>GRAVEL.   |         |                                 |                     |         | 13.5                        |      |  |                                     |                |                                     |                          |
| BH72504      | 4.00<br>(4.00)                    | D                     | C30344   | Light brownish grey very sandy<br>GRAVEL.  |         |                                 |                     |         | 9.7                         |      |  |                                     |                |                                     |                          |
| BH72504      | 21.79-<br>21.96<br>(21.79)        | С                     | C30464   | CHALK.   |         |                                 |                     |         | 27.6                        |      |  |                                     |                |                                     |                          |
| STP7250<br>1 | 0.60<br>(0.60)                    | D                     | C30600   | MADE GROUND: Light greyish brown slightly sandy slightly gravelly silt.  |         |                                 |                     |         | 15.5                        |      |  |                                     |                |                                     |                          |
| WS72402      | 2.50<br>(2.50)                    | D                     | C30767   | PROBABLE MADE GROUND: Light<br>greyish brown slightly sandy slightly<br>gravelly silt.   |         |                                 |                     |         | 20.6                        |      |  |                                     |                |                                     |                          |
| WS72402      | 5.00<br>(5.00)                    | D                     | C30769   | CHALK.   |         | (37%)                           | 24                  | NP      | 21.4                        |      |  |                                     |                |                                     |                          |
| WS72403      | 1.00-<br>1.20<br>(1.00)           | D                     | C30352   | MADE GROUND: Cream and brown<br>very sandy very silty gravel.  | ΜΗ      | 21<br>(49%)                     | 53                  | 32      | 21.1                        |      |  |                                     |                |                                     |                          |
| WS72403      | 1.80<br>(1.80)                    | D                     | C30762   | PROBABLE MADE GROUND: Light greyish grey white gravelly silt.  |         | (44%)                           | 33                  | NP      | 24.4                        |      |  |                                     |                |                                     |                          |
| WS72403      | 3.00<br>(3.00)                    | D                     | C30761   | PROBABLE MADE GROUND: Light brownish grey gravelly silt.   |         | (32%)                           | 30                  | NP      | 25.2                        |      |  |                                     |                |                                     |                          |
|              |                                   |                       |  |  |         |                                 |                     |         |                             |      |  |                                     |                |                                     |                          |
| Remar        |                                   | NST<br>For St<br>w% - | - Not suit<br>tandards<br>^ = Rock<br>Water Co | able for Test<br>followed see Laboratory Test Certficate<br>water content test; x = Aggregate moisture<br>ontents: <failure zone="">. [After test]</failure> | e conte | nt test                         |                     |         |                             | ge   | otechnical   |                                     |                |                                     | Cialists                 |

# Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sample  | е                                 |                 |                        |  | Cla    | ssific            | atior               | า       |                             | Str  | ength                              |                                     |                |                        |                          |
|---------|-----------------------------------|-----------------|------------------------|--|--------|-------------------|---------------------|---------|-----------------------------|------|------------------------------------|-------------------------------------|----------------|------------------------|--------------------------|
| Hole    | Depth<br>(Specimer<br>Depth)<br>M | Туре            | Sample<br>Ref          | Description  | Symbol | Ip<br>(>425)<br>% | w <sub>L</sub><br>% | wp<br>% | w<br>(p <sub>d</sub> )<br>% | Test | $\gamma_{b} \ (\gamma_{d}) \ Mg/m$ | σ <sub>3</sub><br>kN/m <sup>2</sup> | σ₁−σ₃<br>kN/m² | C <sub>u</sub><br>kN/m | C <sub>Avg</sub><br>kN/m |
| WS72403 | 4.50<br>(4.50)                    | D               | C30763                 | Light greenish grey very sandy very<br>clayey GRAVEL   |        |                   |                     |         | 14.3                        |      |                                    |                                     |                |                        |                          |
| WS72404 | 1.20<br>(1.20)                    | D               | C30736                 | PROBABLE MADE GROUND: Light<br>greyish brown slightly sandy slightly<br>gravelly silt.           |        | (23%)             | 29                  | NP      | 18.9                        |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
|         |                                   |                 |                        |  |        |                   |                     |         |                             |      |                                    |                                     |                |                        |                          |
| Remar   | ks <mark>AGS</mark>               | NST -<br>For St | Not suit               | able for Test<br>followed see Laboratory Test Certficate   |        |                   |                     |         |                             |      | Sec.                               | ກັດ                                 | CH             |                        | 25                       |
|         |                                   | w% - '<br>QUT ' | ··· = Rock<br>Water Co | water content test; x = Aggregate moisture<br>ontents: <failure zone="">, [After test]</failure> | conte  | nt test           |                     |         |                             | ge   | otechnical                         | and geo                             | environme      | ental spec             | cialists                 |

# LABORATORY RESULTS - Atterberg Limit

## Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sample  | e                                 |      |               |   | Results  |                        |                                |             |                      |                     |                  |          |
|---------|-----------------------------------|------|---------------|---|--|------------------------|--------------------------------|-------------|----------------------|---------------------|------------------|----------|
| Hole    | Depth<br>(Specimer<br>Depth)<br>M | Туре | Sample<br>Ref | Description   | Test Type  | Point<br>Cone<br>Pene. | Data<br>Water<br>%<br>(Factor) | Sym-<br>bol | р<br>%               | >425<br>sieve<br>µm | w_<br>%          | w р<br>% |
| BH72402 | 3.00<br>(3.00)                    | D    | C30312        | Brownish green slightly sandy slightly gravelly CLAY.                                     | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                | СІ          | 29                   | 32%                 | 50               | 21       |
| BH72403 | 3.00<br>(3.00)                    | D    | C30322        | Brown sandy slightly clayey GRAVEL.   | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                |             |                      | 78%                 | 25               | NP       |
| BH72404 | 1.20-<br>1.65<br>(1.20)           | D    | C30632        | PROBABLE MADE GROUND: Light<br>greyish brown slightly sandy slightly<br>gravelly clay.    | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                | CL          | 13                   | 48%                 | 28               | 15       |
| BH72404 | 2.80<br>(2.80)                    | D    | C30631        | Greyish green slightly sandy gravelly CLAY.   | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                | CI          | 18                   | 63%                 | 38               | 20       |
| BH72405 | 1.10-<br>1.20<br>(1.10)           | D    | C30576        | PROBABLE MADE GROUND: Cream slightly sandy gravelly SILT.                                 | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                |             |                      | 54%                 | 29               | NP       |
| BH72405 | 3.50-<br>3.60<br>(3.50)           | D    | C30629        | Greenish grey mottled brown slightly gravelly sandy CLAY.                                 | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                | СІ          | 20                   | 26%                 | 41               | 21       |
| BH72406 | 1.80-<br>1.90<br>(1.80)           | D    | C30611        | MADE GROUND: Cream slightly sandy slightly gravelly silt.                                 | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                |             |                      | 39%                 | 31               | NP       |
| BH72406 | 4.90-<br>5.00<br>(4.90)           | D    | C30580        | POSSIBLE MADE GROUND: Soft<br>greyish brown mottled grey slightly sandy<br>gravelly CLAY. | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                | СІ          | 25                   | 52%                 | 43               | 18       |
| BH72501 | 3.00<br>(3.00)                    | D    | C30669        | Brownish green slightly gravelly sandy CLAY.  | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                | СІ          | 20                   | 27%                 | 36               | 16       |
| BH72502 | 3.00-<br>3.10<br>(3.00)           | D    | C30875        | Greyish brown slightly sandy gravelly<br>CLAY with a low cobble content.                  | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                | CL          | 16                   | 60%                 | 31               | 15       |
| WS72402 | 5.00<br>(5.00)                    | D    | C30769        | CHALK.  | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                |             |                      | 37%                 | 24               | NP       |
| Remar   | ks 🕂                              |      |               |   |  |                        | Geoteci                        | <b>EC</b>   | <b>NC</b><br>and geo |                     | NIC<br>ental spe | Cialists |

# LABORATORY RESULTS - Atterberg Limit

# Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sample  | е                                 |      |               |  | Results  |                        |                                |             |        |                     |                     |          |
|---------|-----------------------------------|------|---------------|--|--|------------------------|--------------------------------|-------------|--------|---------------------|---------------------|----------|
| Hole    | Depth<br>(Specimer<br>Depth)<br>m | Туре | Sample<br>Ref | Description  | Test Type  | Point<br>Cone<br>Pene. | Data<br>Water<br>%<br>(Factor) | Sym-<br>bol | þ<br>% | >425<br>sieve<br>µm | w <sub>L</sub><br>% | w p<br>% |
| WS72403 | 1.00-<br>1.20<br>(1.00)           | D    | C30352        | MADE GROUND: Cream and brown very sandy very silty gravel.                             | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                | МН          | 21     | 49%                 | 53                  | 32       |
| WS72403 | 1.80<br>(1.80)                    | D    | C30762        | PROBABLE MADE GROUND: Light greyish grey white gravelly silt.                          | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                |             |        | 44%                 | 33                  | NP       |
| WS72403 | 3.00<br>(3.00)                    | D    | C30761        | PROBABLE MADE GROUND: Light brownish grey gravelly silt.                               | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                |             |        | 32%                 | 30                  | NP       |
| WS72404 | 1.20<br>(1.20)                    | D    | C30736        | PROBABLE MADE GROUND: Light<br>greyish brown slightly sandy slightly<br>gravelly silt. | Fall Cone 4pt with<br>increasing water content,<br>cone type: 80g/30, washed<br>over 425um sieve |                        |                                |             |        | 23%                 | 29                  | NP       |
| Bemar   | (S 🕀                              |      |               |  |  |                        |                                |             |        |                     |                     |          |
| Remar   | ks <mark>AGS</mark>               |      |               |  |  |                        | GC                             | EC          |        |                     |                     | Cialists |

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sample  | ole Depth Type Sample Description    |                 |                         |  |           |                   |     |                            |                               |        |           | Unco | nfined (<br>Strengt | Compres          | ssive          |
|---------|--------------------------------------|-----------------|-------------------------|--|-----------|-------------------|-----|----------------------------|-------------------------------|--------|-----------|------|---------------------|------------------|----------------|
| Hole    | Depth<br>(Specimer<br>Depth)<br>m    | Туре            | Sample<br>Ref           | Description  | Sat.<br>w | γ <sub>d</sub>    | ссу | Linear<br>Shrink<br>(>425) | γ <sub>d</sub><br>Max/<br>Min |        |           | UCS  | w                   | γ <sub>b</sub>   | γ <sub>d</sub> |
| BH72402 | 5.55-<br>6.00<br>(5.55-<br>6.00)     | В               | C30421                  | CHALK.   | %<br>28.5 | Mg/m <sup>2</sup> |     | %                          | Mg/m²                         |        |           | кРа  | %                   | Mg/m             | Mg/m           |
| BH72402 | 7.05-<br>7.50<br>(7.05-<br>7.50)     | В               | C30422                  | CHALK.   | 27.6      | 1.55              |     |                            |                               |        |           |      |                     |                  |                |
| BH72402 | 8.55-<br>9.00<br>(8.55-<br>9.00)     | В               | C30430                  | CHALK.   | 26.1      | 1.58              |     |                            |                               |        |           |      |                     |                  |                |
| BH72402 | 10.10-<br>11.10<br>(10.10-<br>11.10) | В               | C30431                  | CHALK.   | 26.2      | 1.58              |     |                            |                               |        |           |      |                     |                  |                |
| BH72402 | 18.00-<br>19.00<br>(18.00-<br>19.00) | В               | C30786                  | CHALK.   | 24.6      | 1.62              |     |                            |                               |        |           |      |                     |                  |                |
| BH72403 | 2.20-<br>2.65<br>(2.20-<br>2.65)     | В               | C30415                  | PROBABLE MADE GROUND:<br>Cream slightly sandy slightly<br>gravelly silt with a medium cobble<br>content. | 17.7      | 1.83              |     |                            |                               |        |           |      |                     |                  |                |
| BH72403 | 5.55-<br>6.00<br>(5.55-<br>6.00)     | В               | C30405                  | CHALK.   | 25.2      | 1.61              |     |                            |                               |        |           |      |                     |                  |                |
| BH72403 | 10.10-<br>11.50<br>(10.10-<br>11.50) | В               | C30413                  | CHALK.   | 22.7      | 1.67              |     |                            |                               |        |           |      |                     |                  |                |
| BH72403 | 13.05-<br>14.30<br>(13.05-<br>14.30) | В               | C30418                  | CHALK.   | 25.0      | 1.61              |     |                            |                               |        |           |      |                     |                  |                |
| BH72403 | 19.34-<br>19.43<br>(19.34-<br>19.43) | С               | C30770                  | CHALK.   | 30.6      | 1.48              |     |                            |                               |        |           |      |                     |                  |                |
| BH72404 | 7.05-<br>8.50<br>(7.05-<br>8.50)     | В               | C30556                  | CHALK.   | 28.0      | 1.54              |     |                            |                               |        |           |      |                     |                  |                |
|         |                                      |                 |                         |  |           |                   |     |                            |                               |        |           |      |                     |                  |                |
| Remar   | ks <sub>AGS</sub>                    | NST -<br>For St | - Not suita<br>tandards | able for Test<br>followed see Laboratory Test Certific   | ate       |                   |     |                            |                               | Geotec | <b>EO</b> |      |                     | NIC<br>ental spe | Cialists       |

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sample  | Iole Depth Type Sample Description   |               |                         |   | Τ         |                |     |                            |                               |   |        | Unco | nfined (<br>Strengt | Compres<br>h Test | ssive          |
|---------|--------------------------------------|---------------|-------------------------|---|-----------|----------------|-----|----------------------------|-------------------------------|---|--------|------|---------------------|-------------------|----------------|
| Hole    | Depth<br>(Specimer<br>Depth)<br>m    | Туре          | Sample<br>Ref           | Description   | Sat.<br>w | γ <sub>d</sub> | ссv | Linear<br>Shrink<br>(>425) | γ <sub>d</sub><br>Max/<br>Min |   |        | UCS  | w                   | γ <sub>b</sub>    | γ <sub>d</sub> |
| BH72404 | 11.55-<br>13.00<br>(11.55-<br>13.00) | B             | C30557                  | CHALK.  | 25.0      | 1.61           |     | %                          | Ng/m                          |   |        | кра  | %                   | NIG/M             | Nig/m          |
| BH72404 | 17.60-<br>18.80<br>(17.60-<br>18.80) | B             | C30797                  | CHALK.  | 24.6      | 1.62           |     |                            |                               |   |        |      |                     |                   |                |
| BH72404 | 19.40-<br>20.40<br>(19.40-<br>20.40) | В             | C30798                  | CHALK.  | 24.7      | 1.62           |     |                            |                               |   |        |      |                     |                   |                |
| BH72405 | 6.00-<br>6.70<br>(6.00-<br>6.70)     | В             | C30506                  | CHALK.  | 20.1      | 1.75           |     |                            |                               |   |        |      |                     |                   |                |
| BH72405 | 7.50-<br>8.00<br>(7.50-<br>8.00)     | В             | C30489                  | CHALK.  | 29.5      | 1.50           |     |                            |                               |   |        |      |                     |                   |                |
| BH72405 | 10.50-<br>11.00<br>(10.50-<br>11.00) | В             | C30507                  | CHALK.  | 28.0      | 1.54           |     |                            |                               |   |        |      |                     |                   |                |
| BH72406 | 8.00-<br>8.50<br>(8.00-<br>8.50)     | В             | C30529                  | CHALK.  | 28.2      | 1.53           |     |                            |                               |   |        |      |                     |                   |                |
| BH72406 | 10.50-<br>12.00<br>(10.50-<br>12.00) | В             | C30524                  | CHALK.  | 25.5      | 1.60           |     |                            |                               |   |        |      |                     |                   |                |
| BH72406 | 13.50-<br>15.00<br>(13.50-<br>15.00) | В             | C30520                  | CHALK.  | 26.8      | 1.57           |     |                            |                               |   |        |      |                     |                   |                |
| BH72501 | 5.35-<br>5.80<br>(5.35-<br>5.80)     | в             | C30517                  | CHALK.  | 27.7      | 1.54           |     |                            |                               |   |        |      |                     |                   |                |
| BH72501 | 8.45-<br>9.50<br>(8.45-<br>9.50)     | - B           | C30522                  | CHALK.  | 27.3      | 1.55           |     |                            |                               |   |        |      |                     |                   |                |
|         |                                      |               |                         |   |           |                |     |                            |                               |   |        |      |                     |                   |                |
| Remar   | ks <sub>AGS</sub>                    | NST<br>For St | - Not suita<br>tandards | able for Test<br>followed see Laboratory Test Certifi | icate     | ;              |     |                            |                               | - | Geotec |      |                     | NIC<br>ental spe  | CS<br>cialists |

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sample  | •                                    |               |                         |  |               |                         |     |                            |                               |   |        |           | Unco | nfined (<br>Strengt | Compres<br>h Test       | ssive                   |
|---------|--------------------------------------|---------------|-------------------------|--|---------------|-------------------------|-----|----------------------------|-------------------------------|---|--------|-----------|------|---------------------|-------------------------|-------------------------|
| Hole    | Depth<br>(Specimer<br>Depth)<br>m    | Туре          | Sample<br>Ref           | Description                                  | Sat.<br>w     | γ <sub>d</sub><br>Ma/m³ | CCV | Linear<br>Shrink<br>(>425) | γ <sub>d</sub><br>Max/<br>Min |   |        |           | UCS  | W<br>%              | γ <sub>b</sub><br>Ma/m³ | γ <sub>d</sub><br>Ma/m³ |
| BH72501 | 11.50-<br>12.50<br>(11.50-<br>12.50) | В             | C30558                  | CHALK.                                       | 26.7          | 1.57                    |     | 70                         | Ng/III                        |   |        |           | кга  | 76                  | ing/iii                 | ING/III                 |
| BH72501 | 14.75-<br>15.55<br>(14.75-<br>15.55) | В             | C30512                  | CHALK.                                       | 24.2          | 1.63                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72501 | 26.97-<br>27.15<br>(26.97-<br>27.15) | C             | C30777                  | CHALK.                                       | 27.1          | 1.56                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72501 | 28.44-<br>28.65<br>(28.44-<br>28.65) | С             | C30778                  | CHALK.                                       | 28.5          | 1.53                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72502 | 5.30-<br>6.00<br>(5.30-<br>6.00)     | В             | C30795                  | CHALK.                                       | 24.7          | 1.62                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72502 | 8.50-<br>9.00<br>(8.50-<br>9.00)     | В             | C30802                  | CHALK.                                       | 27.5          | 1.55                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72502 | 11.50-<br>12.00<br>(11.50-<br>12.00) | В             | C30800                  | CHALK.                                       | 25.7          | 1.59                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72502 | 18.53-<br>18.63<br>(18.53-<br>18.63) | С             | C30782                  | CHALK.                                       | 27.0          | 1.56                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72502 | 19.35-<br>20.50<br>(19.35-<br>20.50) | С             | C30783                  | CHALK.                                       | 23.7          | 1.65                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72502 | 23.30-<br>23.45<br>(23.30-<br>23.45) | С             | C30817                  | CHALK.                                       | 27.2          | 1.56                    |     |                            |                               |   |        |           |      |                     |                         |                         |
| BH72504 | 5.40-<br>5.85<br>(5.40-<br>5.85)     | В             | C30428                  | CHALK.                                       | 23.6          | 1.65                    |     |                            |                               |   |        |           |      |                     |                         |                         |
|         |                                      |               |                         |  |               |                         |     |                            |                               |   |        |           |      |                     |                         |                         |
| Remar   | ks <sub>AGS</sub>                    | NST<br>For St | - Not suita<br>tandards | able for Test<br>followed see Laboratory Tes | t Certificate |                         |     |                            | i                             | - | Geotec | <b>EO</b> |      |                     | NIC<br>ental spe        | CS<br>cialists          |

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Sample       | )                                    |                 |                   |  |           |                   |     |                            |                               |    |           | Unco | nfined (<br>Strengt | Compres          | ssive          |
|--------------|--------------------------------------|-----------------|-------------------|--|-----------|-------------------|-----|----------------------------|-------------------------------|----|-----------|------|---------------------|------------------|----------------|
| Hole         | Depth<br>(Specimer<br>Depth)<br>m    | Туре            | Sample<br>Ref     | Description  | Sat.<br>w | γ <sub>d</sub>    | ссv | Linear<br>Shrink<br>(>425) | γ <sub>d</sub><br>Max/<br>Min |    |           | UCS  | w                   | γ <sub>b</sub>   | γ <sub>d</sub> |
| BH72504      | 8.55-<br>9.20<br>(8.55-<br>9.20)     | В               | C30408            | CHALK.   | %<br>23.4 | Mg/m <sup>*</sup> |     | %                          | Mg/m                          |    |           | кРа  | %                   | Mg/m             | Mg/m²          |
| BH72504      | 11.55-<br>12.00<br>(11.55-<br>12.00) | В               | C30412            | CHALK.   | 23.8      | 1.64              |     |                            |                               |    |           |      |                     |                  |                |
| BH72504      | 17.83-<br>17.92<br>(17.83-<br>17.92) | С               | C30462            | CHALK.   | 26.7      | 1.57              |     |                            |                               |    |           |      |                     |                  |                |
| BH72504      | 20.80-<br>20.97<br>(20.80-<br>20.97) | С               | C30465            | CHALK.   | 25.4      | 1.60              |     |                            |                               |    |           |      |                     |                  |                |
| BH72504      | 26.38-<br>26.48<br>(26.38-<br>26.48) | С               | C30773            | CHALK.   | 24.9      | 1.61              |     |                            |                               |    |           |      |                     |                  |                |
| STP7240<br>1 | 1.20<br>(1.20)                       | D               | C30660            | CHALK.   | 28.2      | 1.53              |     |                            |                               |    |           |      |                     |                  |                |
| STP7240<br>2 | 1.20<br>(1.20)                       | D               | C30664            | PROBABLE MADE GROUND:<br>Light greyish brown slightly sandy<br>slightly gravelly silt. | 26.9      | 1.56              |     |                            |                               |    |           |      |                     |                  |                |
| STP7240<br>3 | 1.20<br>(1.20)                       | D               | C30657            | PROBABLE MADE GROUND:<br>Light grey sandy very silty gravel.                           | 31.7      | 1.46              |     |                            |                               |    |           |      |                     |                  |                |
| STP7250<br>2 | 0.70-<br>1.20<br>(0.70-<br>1.20)     | В               | C30523            | PROBABLE MADE GROUND:<br>Light greyish brown slightly sandy<br>gravelly silt.          | 25.2      | 1.61              |     |                            |                               |    |           |      |                     |                  |                |
| WS72403      | 2.00-<br>3.70<br>(2.00-<br>3.70)     | В               | C30789            | PROBABLE MADE GROUND:<br>Light brownish grey gravelly silt.                            | 26.0      | 1.59              |     |                            |                               |    |           |      |                     |                  |                |
| WS72404      | 1.20-<br>2.00<br>(1.20-<br>2.00)     | В               | C30801            | PROBABLE MADE GROUND:<br>Light greyish brown slightly sandy<br>slightly gravelly silt. | 28.4      | 1.53              |     |                            |                               |    |           |      |                     |                  |                |
|              |                                      |                 |                   |  |           |                   |     |                            |                               |    |           |      |                     |                  |                |
| Remar        | ks <mark>Ags</mark>                  | NST -<br>For Si | - Not suitandards | able for Test<br>followed see Laboratory Test Certific                                 | ate       |                   |     |                            |                               | GC | <b>EO</b> |      |                     | NIC<br>ental spe | CS<br>cialists |

| Spectra DescriptionSpectra  | roject:<br>roject No | A30<br><b>D:</b> PC | 03 AN  | /IES<br>08 | BUI      | RY  | TO E   | BEF  | WIC             | CKI               | DO'            | WN   | N - PH  | IAS            | E 7.            | A C       | OU    | NT        | ESS                       |            |        |   |   |        |          | Hol<br>Sar<br>Sar<br>Sar | le<br>np<br>np<br>np | le<br>le<br>le | De<br>Ty<br>Re | ptl<br>pe<br>f | BH<br>1.2<br>B<br>C3 | 7240<br>0-1.6<br>0423 | )2<br>)5m |      |        |
|---|----------------------|---------------------|--------|------------|----------|-----|--------|------|-----------------|-------------------|----------------|------|---------|----------------|-----------------|-----------|-------|-----------|---------------------------|------------|--------|---|---|--------|----------|--------------------------|----------------------|----------------|----------------|----------------|----------------------|-----------------------|-----------|------|--------|
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $  | Sample<br>PROBA      | Desc<br>BLE M       | ADE (  | ion<br>GR( | I<br>JUC | ND  | : Crea | am s | sligh           | tly s             | sano           | dy s | slighti | ly gr          | ave             | lly si    | ilt.  |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| $\frac{9}{4}  \frac{9}{4}  \frac{9}$                                    | 100                  |                     |        |            |          |     |        |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          | +                        | -                    | -              | Π              | Ī              | <b></b>              |                       |           |      |        |
| $ \frac{1}{9^{4}} \int_{0}^{1} \frac{1}{9^{4}} \int_{0}^{$ | 90                   |                     |        |            |          |     |        |      | _               |                   |                |      |         | _              | _               |           |       |           | -                         | -          | +      |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| Matrix         Matrix<   | 80                   |                     |        |            |          |     |        |      |                 |                   |                | +    |         | +              |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| mathematical         mathematical<  | 70                   |                     |        |            |          |     |        | 1    |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| g         g <   | 60                   |                     |        |            |          |     | 1      |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| x       0   | ŭ<br>E 50            |                     |        |            |          |     |        |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| a         | * *                  |                     |        |            |          |     |        |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| 30       4  | 40                   |                     |        |            |          |     |        |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| Image: Size of the sector of the se   | 30                   |                     |        |            |          |     |        |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| 1         1         1         0   | 20                   |                     |        |            |          |     |        |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| 0       0.01       0.1       1       1       10       100       100       100         Destination       Ar       Image: Arrive Andorse       Fre       Medum       Coarse       Fre       Medum       Coarse       Buders         Classification       % of each       SLT       SAND       Gravel       Coarse       Fre       Medum       Coarse       Buders         Classification       % of each       SLT       SLZ       % Finer       SLZ       SLZ       % Finer       SLZ       SLZ       % Finer       SLZ       SLZ       % Finer       SLZ       SLZ       % Finer       SLZ       SLZ       SLZ       SLZ       SLZ       SLZ </td <td>10</td> <td></td>   | 10                   |                     |        |            |          |     |        |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
| Descritation       QAV       He       Medum       Carse       Fire       Medum       Carse       Fire       Medum       Carse       Gravel       Others       Builders         Classification       % of each       3LT       SIZ       SIZ       SIZ       Gravel       Classification       % of each       125 mm       100       SIZ       SIZ       % Finer       63 µm       76       63 µm       76       64 µm       61       Sieving Method       Wet sieve         SILT       50       50 mm       100       37.5 mm       98       20 µm       76       64 µm       61       Sieving Method       Wet sieve         SAND       12       00 mm       37.5 mm       98       20 mm       77       14 mm       95       10 mm       94       63 am       90       Wet sieve       Fine Particle Analysis       Method       Pipette       Pre-treated       Hydrogen       With       Peroxide       96       96       900       1.18 mm       88       600 µm       66       300 µm       84       150 µm       450       Method       Pipette       Particle       2.65       Density       2.65       Density       2.65       Density       4.63umed)       2.65       Densi  | 0<br>0.0             | 001                 |        |            |          | 0.  | .01    |      |                 |                   |                | 0    | .1      |                |                 |           |       |           | 1                         |            |        |   |   | <br>1  | 0        |                          |                      |                |                | <br>1          | 00                   |                       |           |      | <br>10 |
| UAY     SLT     SAND     Gravel       Classification     % of each     Image: State of the state of th   | Classification       |                     | Fi     | ne         |          | М   | edium  |      | Coa             | rse               |                |      | Fine    |                | Mex             | P<br>tium | artic | de S<br>C | <b>Size (m</b> i<br>barse | m)         | Fina   | Э |   | Me     | dium     |                          | Coa                  | arse           |                | Q              | obbles               |                       | Boul      | ders |        |
| Classification       % of each       Size       % Finer         CLAY       28       125 mm       100         SILT       50       100 mm       100         SILT       50       63 mm       61       2 µm       76         SAND       12       10 mm       98       20 mm       97         GRAVEL       10       37.5 mm       98       20 mm       97         14 mm       95       10 mm       94       8       Method       Pipette         10 mm       94       6.3 mm       92       2 mm       90       Not Available         COBBLES       0       1.18 mm       88       600 µm       86       00       Pre-treated       Hydrogen with         BOULDERS       0       1.18 mm       88       600 µm       86       00       Pipette       Particle       2.65         Density       2.65       Density       (Assumed)       Particle       2.65         Density       Assumed)       Sumed)       Particle       2.65       Density       (Assumed)  |                      | UAT                 |        |            |          | ę   | SILT   |      |                 |                   |                |      |         |                | SA              | ND        |       |           |                           |            |        |   |   | G      | ravel    |                          |                      |                |                |                |                      |                       |           |      |        |
| CLAY       28       123 mm       100 mm   | Classifica           | ition               | %      | of e       | ach      | 1   |        |      | <b>Si</b>       | ze                | m              |      | %       | Fin            | er              |           |       | F         | S                         | ize        | m      |   | 9 | % F    | iner     |                          | ]                    |                | U              | nifo           | ormity               | Coe                   | effici    | ent  |        |
| SILT       50       63 mm       100       2 μm       28       Set of the tribute         SAND       12       50 mm       100       37.5 mm       98       20 mm       97         GRAVEL       10       63 mm       93       14 mm       95       10 mm       94       10       Pre-treated       Hydrogen         COBBLES       0       1.18 mm       88       600 μm       86       0.00       Pre-treated       Hydrogen         BOULDERS       0       1.50 μm       82       100 μm       84       100 <td>CLAY</td> <td></td> <td></td> <td>2</td> <td>28</td> <td></td> <td></td> <td></td> <td>100</td> <td>) m<br/>5 m</td> <td>im<br/>im</td> <td></td> <td></td> <td>100</td> <td>,<br/>)<br/>)</td> <td></td> <td></td> <td></td> <td>20</td> <td>)μ<br/>βμ</td> <td>m<br/>m</td> <td></td> <td></td> <td>-<br/>F</td> <td>76<br/>51</td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>Availa</td> <td>able</td> <td></td> <td></td>   | CLAY                 |                     |        | 2          | 28       |     |        |      | 100             | ) m<br>5 m        | im<br>im       |      |         | 100            | ,<br>)<br>)     |           |       |           | 20                        | )μ<br>βμ   | m<br>m |   |   | -<br>F | 76<br>51 |                          |                      | -              |                |                |                      | Availa                | able      |      |        |
| SAND       12       37.5 mm       98       Fine Particle Analysis         GRAVEL       10       14 mm       95       10 mm       94         GRAVEL       10       6.3 mm       93       5 mm       92         COBBLES       0       1.18 mm       88       600 µm       86         BOULDERS       0       1.18 mm       82       0       0.00         Imarks       Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016       Fine Particle       2.65   | SILT                 |                     |        | Ę          | 50       |     |        |      | 63<br>50        | 8 m<br>) m        | ım<br>ım       |      |         | 100<br>100     | )               |           |       |           | 2                         | <u>2</u> μ | m      |   |   | 2      | 28       |                          |                      |                |                | 3              | We                   | et sie                | ve        | 1    |        |
| Image: GRAVEL       10       14 mm       95       Method       Pipette         Image: GRAVEL       10       6.3 mm       93       Pre-treated       Hydrogen         Some COBBLES       0       1.18 mm       88       90       90       90       90         COBBLES       0       1.18 mm       88       600 μm       86       90 </td <td>SAND</td> <td></td> <td></td> <td>1</td> <td>12</td> <td></td> <td></td> <td></td> <td>37.5<br/>20</td> <td>5 m<br/>) m</td> <td>im<br/>Im</td> <td></td> <td></td> <td>98<br/>97</td> <td></td> <td>F</td> <td>ine</td> <td>Partie</td> <td>cle A</td> <td>naly</td> <td>sis</td> <td></td>  | SAND                 |                     |        | 1          | 12       |     |        |      | 37.5<br>20      | 5 m<br>) m        | im<br>Im       |      |         | 98<br>97       |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                | F              | ine            | Partie               | cle A                 | naly      | sis  |        |
| GRAVEL     10     5 mm     92       COBBLES     0     1.18 mm     88       600 µm     86       300 µm     84       150 µm     82   Particle 2.65 Density (Assumed)<br>27/01/2   | 0.0.1./5/            |                     |        |            |          |     |        |      | 14<br>10<br>6.3 | + m<br>) m<br>} m | im<br>im<br>im |      |         | 95<br>94<br>93 |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      | F              | /leth          | nod<br>trea    | ited                 | Нус                   | droge     | ən   |        |
| COBBLES       0       1.18 mm       88         BOULDERS       0       1.18 mm       86         300 µm       84       150 µm       82         Particle       2.65       Density       (Assumed)  | GRAVEL               |                     |        | 1          | 10       |     |        |      | 5               | 5 m<br>2 m        | im<br>Im       |      |         | 92<br>90       |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      | v              | vith           |                |                      | Per                   | oxid      | e    |        |
| BOULDERS 0 300 µm 84<br>150 µm 82 Particle 2.65<br>(Assumed)<br>Particle 2.65<br>(Assumed)  | COBBLE               | S                   | -      |            | 0        |     |        |      | 1.18<br>600     | 8 m<br>)μ         | m<br>m         |      |         | 88<br>86       |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      | F              | o io<br>Pre-   | trea           | itment               | 0.0                   | 0         |      |        |
| marks R Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016 27/01/2   | BOULDE               | RS                  |        |            | 0        |     |        |      | 300<br>150      | )μ<br>)μ          | m<br>m         |      |         | 84<br>82       |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      | F              | 'art<br>Den    | icle<br>sity   |                      | 2.6<br>(As            | sum       | ed)  |        |
| marks 🔜 Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016   |                      |                     |        |            |          |     |        |      |                 |                   |                |      |         |                |                 |           |       |           |                           |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           |      |        |
|   | emarks               | in Sie              | ve:-Tr | est r      | perf     | orm | ned in |      | cord            | anc               | e w            | rith | BS F    | N 15           | 50 <sup>-</sup> | 1789      | 92-4  | 4:2       | 016                       |            |        |   |   |        |          |                          |                      |                |                |                |                      |                       |           | 2    | 7/01/2 |

| roject:<br>roject No:   | A303 AN<br>PC1977 | MESBL                  | JRY TO B       | ERWICK D          | OW                       | N - PH <i>I</i> | SE 7              | A CO       | AUC     | ITESS            |                    |     |   |                 | H<br>Si<br>Si<br>Si | ole<br>amp<br>amp<br>amp | le C<br>le T<br>le F | ep<br>yp<br>lef | oth<br>e     | BH72<br>3.30-<br>B<br>C304 | 2402<br>·3.70r<br>125 | n        |   |    |
|-------------------------|-------------------|------------------------|----------------|-------------------|--------------------------|-----------------|-------------------|------------|---------|------------------|--------------------|-----|---|-----------------|---------------------|--------------------------|----------------------|-----------------|--------------|----------------------------|-----------------------|----------|---|----|
| Sample De<br>Brownish g | escript           | <b>ion</b><br>htly san | ndy gravelly   | / CLAY.           |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
| 100                     |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      | Й               |              |                            |                       |          |   | m  |
| 90 —                    |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          | $\downarrow$         |                 |              |                            |                       |          | _ | ╢  |
| 80 —                    |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     | И                        |                      |                 |              |                            |                       |          |   |    |
| 70                      |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
|                         |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   | H               |                     |                          |                      |                 |              |                            |                       |          |   |    |
| 60 —                    |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
| i≣ 50 —<br>°°           |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
| 40 —                    |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
| 30 —                    |                   |                        |                |                   | $\left  \right  \right $ |                 |                   |            |         |                  |                    |     | + |                 |                     |                          |                      |                 |              | _                          |                       |          |   |    |
| 20 —                    |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
| 10 —                    |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
| 0                       |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
| 0.001                   |                   |                        | 0.01           |                   |                          | 0.1             |                   | Pa         | article | 1<br>e Size (mr  | n)                 |     |   | 1(              | D                   |                          |                      |                 | 100          |                            |                       |          |   | 1( |
| lassification (L        | _AY               | ine                    | Medium<br>SILT | Coarse            |                          | Fine            | Me<br>SA          | dium<br>ND |         | Coarse           | F                  | ine |   | Me<br>Gi        | dium<br>°avel       | Co                       | arse                 |                 | Cobbl        | es                         | B                     | oulders  | 3 |    |
|                         |                   |                        |                |                   |                          |                 |                   | _          |         |                  |                    |     |   |                 |                     | _                        |                      |                 |              |                            |                       |          |   |    |
| Classificatio           | on %              | of eac                 | h              | Size<br>125 mr    | n                        | % <b>F</b>      | <b>iner</b><br>00 |            |         | <b>S</b> i<br>63 | i <b>ze</b><br>βμm | _   | 9 | % <b>F</b><br>4 | iner<br>1           | -                        |                      | Uni             | iform        | 1250                       | oeffi                 | cien     | t |    |
| CLAY                    |                   | 10                     | _              | 100 mr<br>75 mr   | n<br>n                   | 1               | 00<br>00          |            |         | 20<br>6          | ) μm<br>6 μm       |     |   | 2<br>1          | 28<br>9             |                          |                      |                 | Siev         | /ina l                     | Meth                  | od       |   |    |
| SILT                    |                   | 31                     |                | 63 mr<br>50 mr    | n<br>n                   | e<br>e          | 96<br>94          |            |         | 2                | 2μm                |     |   | 1               | 0                   |                          |                      |                 |              | Wet                        | sieve                 |          |   | _  |
| SAND                    |                   | 18                     |                | 37.5 mr<br>20 mr  | n<br>n                   |                 | )1<br>79          |            |         |                  |                    |     |   |                 |                     |                          |                      | Fir             | ne Pa        | article                    | e Ana                 | lysis    | 8 |    |
|                         |                   |                        | -              | 14 mr<br>10 mr    | n<br>n                   | 6               | 67<br>67          |            |         |                  |                    |     |   |                 |                     |                          | M                    | etho            |              | ,                          | -ipett<br>Hydro       | e<br>gen |   |    |
| GRAVEL                  |                   | 37                     | -              | 5 mr<br>2 mr      | n<br>n                   | 6               | 52<br>59          |            |         |                  |                    |     |   |                 |                     |                          | wi                   | th              |              | F                          | Perox                 | ide      |   |    |
| COBBLES                 |                   | 4                      | -              | 1.18 mr<br>600 μr | n<br>n                   |                 | 58<br>55          |            |         |                  |                    |     |   |                 |                     |                          | %<br>Pr              | los:<br>e-tr    | s on<br>eatm | ent                        | 0.00                  |          |   |    |
| BOULDERS                |                   | 0                      |                | 300 μr<br>150 μr  | n<br>n                   | 2               | 51<br>16          |            |         |                  |                    |     |   |                 |                     |                          | Pa<br>De             | irtic<br>ensi   | le<br>ty     | 2                          | 2.65<br>Assu          | med      | ) |    |
|                         |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |
|                         |                   |                        |                |                   |                          |                 |                   |            |         |                  |                    |     |   |                 |                     |                          |                      |                 |              |                            |                       |          |   |    |

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| roject:<br>roject N | P<br>Io: F | 203 A           | AME<br>7708  | -SB<br>3     | UF  | ł۲      | IOE  | BER  | WIC               | CK       | 00          | VVP | N - PT | IAS            | 5E /               | Ά (          | 201       | JN   | TES                    | s            |    |      |   |   |        |      | San<br>San<br>San | e<br>npl<br>npl<br>npl | e C<br>e T<br>e F | Dej<br>Tyl<br>Ref | ptł<br>pe<br>f | 1 4<br>E  | 3H72<br>4.30-<br>3<br>C304 | 2402<br>4.70<br>124 | <u>?</u><br>)m |     |        |
|---------------------|------------|-----------------|--------------|--------------|-----|---------|------|------|-------------------|----------|-------------|-----|--------|----------------|--------------------|--------------|-----------|------|------------------------|--------------|----|------|---|---|--------|------|-------------------|------------------------|-------------------|-------------------|----------------|-----------|----------------------------|---------------------|----------------|-----|--------|
| Sample<br>Light b   | e Des      | scrip<br>ery sa | otic<br>andy | on<br>y slię | ght | tly o   | laye | y GF | \AV               | ΈL.      |             |     |        |                |                    |              |           |      |                        |              |    |      |   |   |        |      |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| 100                 | ,          |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    | <b>—</b>     |           | Π    | 11                     |              |    |      |   |   |        |      | <b>—</b>          | Т                      |                   | 们                 | Ŧ              | <b></b> - |                            |                     |                |     |        |
| 90                  | ,          |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    |              |           |      |                        |              |    |      |   |   |        |      | _                 | -                      | Д                 |                   |                |           | _                          | _                   | _              |     |        |
| 80                  | ,          |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    |              |           |      |                        |              |    |      |   |   |        |      |                   | $\downarrow$           |                   |                   |                |           |                            |                     |                |     |        |
| 70                  |            |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    |              |           |      |                        |              |    |      |   |   |        |      |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| en                  |            |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    |              |           |      |                        |              |    |      |   |   |        |      |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| ŭ.                  |            |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    |              |           |      |                        |              |    |      |   |   |        | /    |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| ≝ 50<br>%           |            |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    |              |           |      |                        |              |    |      |   |   | И      | /    |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| 40                  | )          |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    |              |           |      |                        |              |    |      |   | 1 |        |      |                   | T                      |                   |                   |                |           |                            |                     |                |     |        |
| 30                  |            |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    |              |           |      |                        |              | /  |      |   |   |        |      |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| 20                  |            |                 |              |              |     |         |      |      |                   |          |             |     |        |                |                    | +            |           |      | $\left\  \right\ $     | /            |    |      |   |   |        |      |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| 10                  |            |                 |              |              |     |         |      |      |                   |          |             |     |        | -              | -                  | $\downarrow$ | 1         |      |                        |              |    |      |   |   |        |      |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| 0                   | )          |                 |              |              |     | <br>0.0 | )1   |      |                   |          |             | 0   | 1      |                |                    |              |           |      | <br>1                  |              |    |      |   |   | <br>1( | )    |                   |                        |                   |                   | <br>1          | 00        |                            |                     |                |     | <br>1( |
| lassificatior       | n          |                 | Fine         |              |     | Me      | dium | T    | Coa               | rse      |             |     | Fine   |                | Me                 | diun         | Part<br>n | icle | e <b>Size</b><br>Coars | e <b>(mm</b> | 1) | Fine | 9 |   | Mə     | dium | T                 | Coa                    | rse               | Т                 | Q              | obble     | s                          | E                   | Bould          | ers |        |
|                     | a an       |                 |              |              |     | S       | ilt  |      |                   |          |             |     |        |                | S                  | AND          |           |      |                        |              |    |      |   |   | G      | avel |                   |                        |                   |                   |                |           |                            |                     |                |     |        |
| Classific           | cation     | 9               | % <b>o</b> 1 | ea           | ch  | ]       | [    |      | Si                | ze       |             |     | %      | Fir            | ner                |              | ]         |      |                        | Si           | ze |      |   | 9 | 6 F    | iner |                   |                        |                   | Ur                | nifo           | ormi      | ity C                      | oef                 | ficie          | ent |        |
|                     |            |                 |              |              |     |         |      |      | 125<br>100        | m        | m<br>m      |     |        | 100<br>100     | 0<br>0             |              |           |      |                        | 63           | μı | m    |   |   | 4      | 1    |                   |                        |                   |                   |                |           | 47.                        | .67                 |                |     |        |
| SILT (ind           | cludiną    | <b>j</b>        |              |              | 1   | 1       |      |      | 75<br>63          | m<br>m   | m<br>m      |     |        | 100            | 0                  |              |           |      |                        |              |    |      |   |   |        |      |                   |                        |                   |                   | S              | ievi      | ng I<br>Vet                | Meth<br>sieve       | nod            |     |        |
| 02/(1)              |            | +               |              |              | r   | +       |      | 3    | 50<br>37.5        | m        | m<br>m      |     |        | 97<br>88       | 3                  |              |           |      |                        |              |    |      |   |   |        |      |                   |                        |                   | Fi                | ine            | Par       | ticle                      | e An                | aly            | sis |        |
| SAND                |            |                 |              | 21           |     |         |      |      | 20<br>14          | - m      | m           |     |        | 56             | <u>-</u><br>5<br>7 |              |           |      |                        |              |    |      |   |   |        |      |                   |                        | м                 | eth               | od             |           |                            |                     |                |     |        |
| GRAVE               | L          |                 |              | 75           | 5   |         |      |      | 6.3               | m        | m<br>m      |     |        | 47<br>37<br>35 | 7<br>5             |              |           |      |                        |              |    |      |   |   |        |      |                   |                        | Pi                | re-t<br>ith       | rea            | ted       |                            |                     |                |     |        |
| COBBLE              | ES         |                 |              | C            | )   |         |      | 1    | 2<br>1.18         | m<br>m   | m<br>m      |     |        | 25<br>20       | 5                  |              |           |      |                        |              |    |      |   |   |        |      |                   |                        | %<br>Pi           | los<br>re-t       | SS (           | on<br>tme | nt                         |                     |                |     |        |
| BOULDI              | ERS        |                 |              | C            | )   | 1       |      |      | 600<br>300<br>150 | μ<br>μ   | m<br>m<br>m |     |        | 14<br>8<br>6   | 1                  |              |           |      |                        |              |    |      |   |   |        |      |                   |                        | Pa                | artie             | cle            |           |                            |                     |                |     |        |
|                     |            | [               |              |              |     |         | l    |      |                   | <u>.</u> | -           |     |        | -              |                    |              | L         | I    | L                      |              |    |      | _ |   |        |      |                   |                        |                   |                   | ,              |           | Į_                         |                     |                |     |        |

| oject No:          | PC1            | 9770  | 8          |     |         |      |             |                   |                  |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             | Sarr<br>Sarr<br>Sarr | nple<br>nple<br>nple | e D<br>e T<br>e R | ep<br>yp<br>lef | oth<br>e     | 1.2<br>B<br>C3 | 0-1.0<br>0407  | 65m<br>7            | I     |      |         |
|--------------------|----------------|-------|------------|-----|---------|------|-------------|-------------------|------------------|------|-------|-------|----------------|------------|------------------|-------|-----------|-----------------------|----------|----------|--------|-----|-----|------|-------------|----------------------|----------------------|-------------------|-----------------|--------------|----------------|----------------|---------------------|-------|------|---------|
| Sample E<br>PROBAB | Desci<br>Le Ma | DE G  | on<br>Brol | JN  | D: Cre  | am   | sligi       | ntly              | sar              | ndy  | sligl | htly  | gra            | vell       | y si             | lt w  | vith      | am                    | iediu    | um (     | cob    | ble | cor | nter | nt.         |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| 100                |                |       |            |     |         |      |             |                   |                  |      |       |       |                | Τ          |                  |       | Π         |                       |          |          |        |     |     |      |             |                      |                      |                   | $\prod$         |              | •              |                |                     |       |      | Ш       |
| 90 -               | _              |       |            |     |         | _    | _           |                   | $\left  \right $ |      |       |       |                |            | $\left  \right $ |       | ╢         |                       |          |          |        |     |     |      | _           | +                    | -                    |                   |                 |              |                |                |                     |       | -    |         |
| 80 -               |                |       |            |     |         | _    |             |                   |                  |      |       |       |                |            |                  |       | ╞         |                       | _        | _        |        |     | •   |      | -           |                      |                      |                   |                 |              |                |                |                     | +     |      |         |
| 70 -               |                |       |            |     |         |      | _           |                   | -                |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| 60 -               |                |       |            |     |         |      |             |                   |                  |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| ži ro              |                |       | ľ          |     |         |      |             |                   |                  |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| * 50 -             |                |       |            |     |         |      |             |                   |                  |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| 40 -               |                |       |            |     |         |      |             |                   |                  |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| 30 -               |                |       |            |     |         |      |             |                   |                  |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| 20 -               |                |       |            |     |         |      |             |                   |                  |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| 10 -               |                |       |            |     |         |      |             |                   |                  |      |       |       |                |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| 0<br>0.00          | 1              |       |            |     | ).01    |      |             |                   |                  |      | 0.1   |       |                |            |                  |       |           | 1                     |          |          |        |     |     | 10   | )           |                      |                      |                   |                 | 10           | )              |                |                     |       |      | ∭<br>10 |
| Classification     |                | Fin   | e          |     | Vledium | 1    | Cc          | arse              | ;                |      | Fine  |       |                | Medi       | <b>Pa</b><br>um  | artic | de S<br>C | <b>Size</b><br>ìoarse | (mm      | )        | Fine   |     |     | Mec  | dium        |                      | Coar                 | se                |                 | Cob          | bles           |                | Bou                 | Iders | ;    | ٦       |
|                    |                |       |            |     | SILT    |      |             |                   |                  |      |       |       |                | SAN        | Ð                |       |           |                       |          |          |        |     |     | Gra  | avel        |                      |                      |                   |                 |              |                |                |                     |       |      |         |
| Classificati       | on             | % o   | f eac      | h   |         |      | s           | ize               | •                |      |       | % F   | ine            | r          |                  |       |           |                       | Siz      | e        |        |     | %   | 5 Fi | ner         |                      |                      |                   | Un              | ifor         | mity           | Coe            | effic               | ient  | t    |         |
| CLAY               |                |       | 24         |     |         |      | 12<br>10    | 5 r<br>0 r<br>5 . | nm<br>nm         |      |       | 1     | 00             |            |                  |       |           |                       | 63<br>20 | μn<br>μn | n<br>n |     |     | 7    | 2<br>1<br>0 |                      |                      |                   |                 |              | Not A          | Avail          | able                | •     |      |         |
| SILT               |                |       | 48         |     |         |      | 7<br>6<br>5 | 3 i<br>3 i<br>0 i | nm<br>nm         |      |       | <br>( | 92<br>92       |            |                  |       |           |                       | 2        | μn       | n      |     |     | 2    | 4           |                      |                      |                   |                 | Sie          | eving<br>We    | g Me<br>et sie | e <b>tho</b><br>eve | d     |      |         |
| 0.41/2             |                |       | 10         |     |         |      | 37.<br>2    | 5 r<br>0 r        | nm<br>nm         |      |       | 9     | 91<br>90       |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      |                   | Fir             | ne F         | Partic         | cle A          | nal                 | ysis  | ;    |         |
| SAND               |                |       | 10         |     |         |      | 1<br>1      | 4 r<br>0 r        | nm<br>nm         |      |       | 8     | 87<br>85       |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      | Me                | ethc            | bd           |                | Pip            | ette                | IOn   |      |         |
| GRAVEL             |                |       | 10         |     |         |      | 6.          | 3 r<br>5 r        | nm<br>nm         |      |       | 8     | 84<br>84       |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      | Pro<br>wit        | e-tr<br>h       | eate         | ed             | Pe             | roxic               | de    |      |         |
| COBBLES            |                |       | 8          |     |         |      | 1.1         | 21<br>81<br>01    | nm<br>nm         |      |       | 1     | 82<br>81<br>79 |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      | %<br>Pr           | los:<br>e-tr    | s or<br>eatr | n<br>ment      | 0.0            | 0                   |       |      |         |
| BOULDER            | S              |       | 0          |     |         |      | 30<br>15    | 0 i<br>0 i        | um<br>um         |      |       | -     | 77<br>75       |            |                  |       |           |                       |          |          |        |     |     |      |             |                      |                      | Pa<br>De          | rtic<br>ensi    | le<br>ty     |                | 2.6<br>(As     | 5<br>sun            | ned)  |      |         |
|                    |                |       |            |     | ı       |      |             |                   |                  |      |       |       |                |            |                  |       | L         |                       |          |          |        |     |     |      |             | ]                    |                      |                   |                 |              |                |                |                     |       |      |         |
| emarks             | Siev           | e:-Te | st per     | for | med i   | n ac | cord        | dan               | сел              | with | BS    | FN    |                | ר <u>ר</u> | 780              | 2-4   | 1.2       | 016                   |          |          |        |     |     |      |             |                      |                      |                   |                 |              |                |                |                     | 2     | 27/0 | )1/2    |

### \_\_\_\_ \_\_ \_ \_ \_ ~ '

| oject:<br>oject N  | A30<br><b>o:</b> PC        | 93 AMESB<br>197708            | URY TO BE | ERWICK DOW              | /N - PHASE 7   | A COU | INTESS           |                 |          | Hole<br>Samp<br>Samp<br>Samp | ole De<br>ole Ty<br>ole Re | pth 3.3<br>pe B<br>f C | H72403<br>30-3.75m<br>30406 |        |
|--------------------|----------------------------|-------------------------------|-----------|-------------------------|----------------|-------|------------------|-----------------|----------|------------------------------|----------------------------|------------------------|-----------------------------|--------|
| Sample<br>Brown s  | e <b>Desc</b><br>sandy sli | <b>ription</b><br>ghtly claye | y GRAVEL. |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| 100                |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| 90                 |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| 80                 |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| 70                 |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| 70                 |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| 60<br>u            |                            |                               |           |                         |                |       |                  |                 | 11//     |                              |                            |                        |                             |        |
| ні<br>150<br>8     |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             | +++    |
| 40                 |                            |                               |           |                         |                |       |                  |                 | <u> </u> |                              |                            |                        |                             |        |
| 30                 |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             | +++    |
| 20                 |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| 10                 |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
|                    |                            |                               |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| 0.                 | 001                        |                               | 0.01      |                         | 0.1            | Parti | 1<br>de Size (mn | n)              | 1        | 10                           |                            | 100                    |                             | 1      |
| assification       | a.ay                       | Fine                          | Medium    | Coarse                  | Fine Me        | dium  | Coarse           | Fine            | M        | edium Ca                     | arse                       | Cobbles                | Boulde                      | rs     |
|                    |                            | 1                             |           |                         |                |       |                  |                 |          |                              |                            |                        |                             |        |
| Classific          | ation                      | % of eac                      | ch        | Size<br>125 mm          | % Finer<br>100 | _     | <b>Si</b><br>63  | <b>ze</b><br>μm | % F      | Finer<br>8                   | U                          | niformit               | y Coefficie                 | nt     |
|                    |                            |                               | _         | 100 mm<br>75 mm         | 100<br>100     |       |                  |                 |          |                              |                            | Sievin                 | a Method                    |        |
| SILT (inc<br>CLAY) | luding                     | 8                             |           | 63 mm<br>50 mm          | 100<br>97      |       |                  |                 |          |                              |                            | W                      | et sieve                    |        |
| SAND               |                            | 19                            | ,         | 37.5 mm<br>20 mm        | 96<br>79       |       |                  |                 |          |                              | F                          | ine Part               | icle Analys                 | is     |
|                    |                            |                               |           | 14 mm<br>10 mm<br>63 mm | 62<br>48       |       |                  |                 |          |                              | Pre                        | treated                |                             |        |
| GRAVEL             | _                          | 73                            |           | 5 mm<br>2 mm            | 42             |       |                  |                 |          |                              | with                       |                        |                             |        |
| COBBLE             | S                          | 0                             |           | 1.18 mm<br>600 μm       | 22<br>17       |       |                  |                 |          |                              | % lo<br>Pre-               | ss on<br>treatmen      | t                           |        |
| BOULDE             | RS                         | 0                             |           | 300 μm<br>150 μm        | 13<br>10       |       |                  |                 |          |                              | Part<br>Den                | icle<br>sity           |                             |        |
|                    |                            | •                             |           |                         |                |       | <u> </u>         |                 |          |                              |                            |                        |                             |        |
|                    |                            |                               | <u> </u>  |                         |                |       |                  |                 |          |                              |                            |                        |                             | 27/01/ |

geotechnical and geoenvironmental specialists

| roject:<br>Project N       | А30<br><b>о:</b> РС | 03 AMESBU<br>197708 | IRY TO BE   | RWICK                | DOV      | VN - F  | PHASE          | Ξ7Α   | COI       | JNT        | ESS               |          |      |      |               | Hole<br>Sam<br>Sam<br>Sam | ple I<br>ple ⊺<br>ple I | De<br>Fyj<br>Re | pth<br>pe<br>f | BH7<br>1.20<br>B<br>C30 | 72404<br>)-1.65<br>534 | im           |     |           |
|----------------------------|---------------------|---------------------|-------------|----------------------|----------|---------|----------------|-------|-----------|------------|-------------------|----------|------|------|---------------|---------------------------|-------------------------|-----------------|----------------|-------------------------|------------------------|--------------|-----|-----------|
| Sample<br>PROBA<br>content | BLE MA              | ription<br>Ade grou | ND: Greyis  | h brown              | sligh    | ntly sa | ndy sli        | ghtly | grav      | elly       | clay wi           | h a r    | nedi | um d | cob           | ble                       |                         |                 |                |                         |                        |              |     |           |
| 100                        |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      |               |                           |                         |                 | M              | •                       |                        |              |     | $\square$ |
| 90                         |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      |               |                           |                         | ×               | 4              |                         |                        |              |     |           |
| 80                         |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      |               |                           |                         |                 |                |                         |                        |              |     |           |
| 70                         |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      | $\frac{1}{7}$ |                           |                         |                 |                |                         |                        |              |     |           |
| 60                         |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      |               |                           |                         |                 |                |                         |                        |              |     | +         |
| Eine<br>8                  |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      |               |                           |                         |                 |                |                         |                        |              |     | +         |
| 40                         |                     |                     |             |                      |          |         | $\checkmark$   |       |           |            |                   |          |      |      |               |                           |                         |                 |                |                         |                        |              |     | +         |
| 30                         |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      |               |                           |                         |                 |                |                         |                        |              |     |           |
| 20                         |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      |               |                           |                         |                 |                |                         |                        |              |     |           |
| 10                         |                     |                     |             |                      |          |         |                |       |           |            |                   |          |      |      |               |                           |                         |                 |                |                         |                        |              |     |           |
| 0<br>0.                    | 001                 |                     | 0.01        |                      |          | 0.1     |                |       |           |            | 1                 |          |      |      | <br>1         | <br> 0                    |                         |                 | <br>10         | 0                       |                        |              |     | <br>100   |
| Classification             |                     | Fine                | Medium      | Coarse               |          | Fine    |                | Mediu | Part<br>m | ide :<br>C | Size (mn<br>òarse | 1)<br>F  | Fine |      | Me            | edium C                   | barse                   |                 | Col            | obles                   | E                      | Boulde       | rs  |           |
|                            | CLAY                |                     | SILT        |                      |          |         |                | SAN   | )         |            |                   |          |      |      | G             | Favel                     |                         |                 |                |                         |                        |              |     |           |
| Classifica                 | ation               | % of each           | h           | Size                 |          |         | % Fine         | er    | ]         |            | Si                | ze       |      | ç    | % F           | iner                      |                         | Uı              | nifo           | rmity                   | Coef                   | licier       | nt  |           |
| CLAY                       |                     | 12                  |             | 125 n<br>100 n       | nm<br>nm |         | 100            |       |           |            | 63<br>20          | μm<br>μm |      |      | 3             | 30                        |                         |                 |                | Not A                   | vailab                 | le           |     |           |
| SILT                       |                     | 18                  |             | 63 n<br>50 n         | nm       |         | 91<br>88       |       |           |            | 2                 | μm       |      |      | -             | 12                        | -                       |                 | Si             | eving<br>Wet            | Meth                   | nod<br>e     |     |           |
|                            |                     |                     | -           | 37.5 n<br>20 n       | nm<br>nm |         | 88<br>80       |       |           |            |                   |          |      |      |               |                           |                         | F               | ine            | Partic                  | le An                  | alysi        | is  |           |
| SAND                       |                     | 28                  | -           | 14 n<br>10 n         | nm<br>nm |         | 75<br>70       |       |           |            |                   |          |      |      |               |                           | Ν                       | leth            | od             |                         | Pipet                  | te           |     |           |
| GRAVEL                     | -                   | 33                  | _           | 6.3 m<br>5 m         | nm<br>nm |         | 64<br>63       |       |           |            |                   |          |      |      |               |                           | P<br>w                  | re-t<br>ith     | reat           | ed                      | Hydr<br>Pero:          | ogen<br>xide |     |           |
| COBBLE                     | S                   | 9                   |             | 2 n<br>1.18 n<br>600 | nm<br>nm |         | 58<br>55<br>52 |       |           |            |                   |          |      |      |               |                           | %<br>P                  | los<br>re-t     | ss o<br>reat   | n<br>ment               | 0.00                   |              |     |           |
| BOULDE                     | RS                  | 0                   |             | 300 µ<br>150 µ       | ιm<br>ιm |         | 46<br>37       |       |           |            |                   |          |      |      |               |                           | P<br>D                  | arti<br>ens     | cle<br>sity    |                         | 2.65<br>(Ass           | umeo         | 4)  |           |
|                            |                     |                     |             |                      |          |         |                |       | -         | L          |                   |          |      |      |               |                           |                         |                 |                |                         |                        |              |     |           |
| lemarks                    | AGS Siev            | /e:-Test perf       | formed in a | ccordan              | ce wi    | th BS   | FN IS          | 0 17  | 802       | 1.0        | 016               |          |      |      |               |                           |                         |                 |                |                         |                        |              | 27/ | /01/20    |

| roject:<br>roject No | A30<br><b>D:</b> PC | )3 AME<br>197708 | ESBL<br>B          | JRY  | ( TO E  | BERV | VICI          | KD             | OV               | ŴΝ | - PH | IAS            | БЕ 7.  | AC   | COL   | JN       | TESS                       |                |     |   |                  |       |          | Hole<br>San<br>San<br>San | e<br>1pl<br>1pl<br>1pl | e C<br>e T<br>e F | )ep<br>'yp<br>Ref | oth<br>De | BH<br>2.4<br>B<br>C3 | 7240<br>0-2.8<br>0531 | )4<br>30m |       |   |           |
|----------------------|---------------------|------------------|--------------------|------|---------|------|---------------|----------------|------------------|----|------|----------------|--------|------|-------|----------|----------------------------|----------------|-----|---|------------------|-------|----------|---------------------------|------------------------|-------------------|-------------------|-----------|----------------------|-----------------------|-----------|-------|---|-----------|
| Sample<br>Greyish    | Desc<br>green s     | riptic           | o <b>n</b><br>sand | y gr | ravelly | CLA  | Y.            |                |                  |    |      |                |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        |                   |                   |           |                      |                       |           |       |   |           |
| 100                  |                     |                  |                    |      |         |      |               |                | Π                |    |      | Τ              |        |      |       | Π        |                            |                | Τ   |   | Π                |       |          |                           |                        |                   | T                 |           | •                    |                       | Π         |       |   | $\square$ |
| 90                   |                     |                  |                    |      |         |      |               |                |                  |    |      |                |        |      |       |          |                            |                | -   |   |                  |       |          |                           | $\left  \right $       |                   |                   |           |                      |                       |           |       |   |           |
| 80                   |                     |                  |                    |      |         |      |               |                |                  |    |      |                |        |      |       |          |                            |                | _   |   |                  |       |          | -/                        | /                      |                   |                   |           |                      |                       |           |       |   |           |
| 70                   |                     |                  |                    |      |         |      |               |                | $\left  \right $ |    |      |                |        |      |       |          |                            |                |     |   |                  |       | _        | 4                         |                        |                   |                   |           |                      |                       |           |       |   |           |
| 60                   |                     |                  |                    |      |         |      |               |                |                  |    |      |                |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        |                   |                   |           |                      |                       |           |       |   |           |
| ۶ Fine<br>20         |                     |                  |                    |      |         |      |               |                | +                |    |      | -              |        |      |       |          |                            |                | 1   |   | $\left  \right $ |       |          |                           |                        | $\left  \right $  |                   |           |                      |                       |           |       |   |           |
| 40                   |                     |                  |                    |      |         |      |               |                | $\left  \right $ |    |      | $\downarrow$   | 4      |      |       |          |                            |                |     |   |                  |       |          |                           |                        |                   |                   |           |                      |                       |           |       |   |           |
| 30                   |                     |                  |                    |      |         |      |               |                |                  |    |      |                |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        |                   |                   |           |                      |                       |           |       |   |           |
| 20                   |                     |                  |                    |      |         |      |               |                |                  |    |      |                |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        |                   |                   |           |                      |                       |           |       |   |           |
| 10                   |                     |                  |                    |      |         |      |               |                | $\left  \right $ |    |      |                |        |      |       |          |                            |                | +   |   | $\left  \right $ |       |          |                           |                        | $\left  \right $  | $\left  \right $  |           |                      |                       |           |       |   |           |
| 0                    | 001                 |                  |                    | 0    | 1.01    |      |               |                |                  | 0. | 1    |                |        |      |       |          | 1                          |                |     |   |                  | <br>1 | 0        |                           |                        |                   |                   | <br>10    | 0                    |                       |           |       |   | ∭<br>10(  |
| Classification       |                     | Fine             | ;                  | N    | /edium  |      | Coars         | se             |                  | F  | ine  |                | Mex    | dium | Parti | ide<br>( | e <b>Size (m</b><br>Coarse | m)             | Fin | e |                  | Me    | dium     | Т                         | Coa                    | rse               |                   | Cot       | bles                 | T                     | Bou       | Iders | 3 | 7         |
|                      | 0.AY                |                  |                    |      | SILT    |      |               |                |                  |    |      |                | SA     | ND   |       |          |                            |                |     |   |                  | G     | ravel    |                           |                        |                   |                   |           |                      |                       |           |       |   |           |
| Classifica           | ation               | % of             | feac               | h    |         |      | Siz           | e              |                  |    | %    | Fin            | er     |      |       | [        | S                          | ize            | m   |   | 9                | % F   | iner     |                           |                        |                   | Un                | ifor      | mity                 | Coe                   | effic     | ient  | t |           |
| CLAY                 |                     |                  | 7                  |      |         | -    | 100           | mr             | n<br>n           |    |      | 100            | )<br>) |      |       |          | 2                          | 5μ<br>0μ<br>6μ | m   |   |                  | 1     | 13<br>10 |                           |                        |                   |                   | 0:        | 10                   | 08.7                  | 4         |       |   |           |
| SILT                 |                     |                  | 16                 |      |         |      | 63<br>50      | mr<br>mr       | n<br>n           |    |      | 100<br>96      | )      |      |       |          | :                          | 2μ             | m   |   |                  |       | 7        |                           |                        |                   |                   | 51        | eving<br>We          | <b>g Me</b><br>et sie | ve        | a     |   |           |
| SAND                 |                     |                  | 31                 |      |         | 3    | 7.5<br>20     | mr<br>mr       | n<br>n           |    |      | 96<br>74       |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        |                   | Fir               | ne F      | Partic               | le A                  | naly      | ysis  | 3 |           |
| GRAVEL               |                     |                  | 46                 |      |         |      | 10<br>6.3     | mr<br>mr       | n<br>n           |    |      | 64<br>59       |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        | Pr                | e-tr              | eate      | ed                   | Нус                   | drog      | en    |   |           |
|                      | s                   |                  | 0                  |      |         | 1    | 5<br>2<br>.18 | mr<br>mr<br>mr | n<br>n<br>n      |    |      | 58<br>54<br>53 |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        | wi<br>%           | in<br>Ios         | s or      | 1                    | 0.0                   |           | ie    |   |           |
| BOULDE               | RS                  |                  | 0                  |      |         | 6    | 500<br>300    | μr<br>μr       | n<br>n           |    |      | 51<br>46       |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        | Pi<br>Pa          | e-tr              | eati      | nent                 | 2.6                   | 5         | ned)  |   |           |
|                      |                     | 1                | -                  | ]    | l       |      | . 30          | μι             | 11               | _  |      | 32             | •      |      | l     | Ĺ        |                            |                |     |   |                  |       |          |                           |                        |                   |                   |           |                      | L, , , ,              | 2011      |       | , |           |
|                      |                     |                  |                    |      |         |      |               |                |                  |    |      |                |        |      |       |          |                            |                |     |   |                  |       |          |                           |                        |                   |                   |           |                      |                       |           |       |   |           |

| Project:<br>Project No | A30<br><b>):</b> PC | 03 AMESBU<br>197708           | URY TO B      | ERWICK DOV        | VN - PHA  | SE 7A C     | OUN     | ITESS                       |            |        | Hole<br>Sampl<br>Sampl<br>Sampl | e Depth<br>e Type<br>e Ref | BH72404<br>4.30-4.75m<br>B<br>C30516 | 1        |
|------------------------|---------------------|-------------------------------|---------------|-------------------|-----------|-------------|---------|-----------------------------|------------|--------|---------------------------------|----------------------------|--------------------------------------|----------|
| Sample<br>Light bro    | Desc<br>ownish (    | <b>ription</b><br>green sandy | y slightly cl | ayey GRAVEL       | with a me | dium cot    | oble d  | content.                    |            |        |                                 |                            |                                      |          |
| 100                    |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            | •                                    |          |
| 90                     |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| 80                     |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| 70                     |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| 60                     |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| ۳. 50                  |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| » <sup>00</sup>        |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| 40                     |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| 30                     |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| 20                     |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| 10                     |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
| 0<br>0.0               | <br>001             |                               | 0.01          |                   | 0.1       |             |         | 1                           |            | 1<br>1 | 0                               | 100                        | )                                    | <br>100  |
| Classification         | C AV                | Fine                          | Medium        | Coarse            | Fine      | F<br>Medium | article | e <b>Size (mn</b><br>Coarse | ı)<br>Fine | Me     | edium Coa                       | rse Cob                    | oles Bou                             | ulders   |
|                        | ULAY                |                               | SILT          |                   |           | SAND        |         |                             |            | G      | ravel                           |                            |                                      |          |
| Classifica             | tion                | % of eac                      | :h            | Size              | % Fi      | ner         |         | Si                          | ze         | % F    | iner                            | Unifor                     | mity Coeffic                         | cient    |
|                        |                     |                               |               | 125 mm<br>100 mm  | 10        | 0           |         | 63                          | μm         |        | 2                               |                            | 37.48                                |          |
| SILT (incl             | uding               |                               |               | 75 mm<br>63 mm    | 9         | 2<br>4      |         |                             |            |        |                                 | Sie                        | eving Metho                          | d        |
| CLAY)                  |                     | 2                             |               | 50 mm<br>37.5 mm  | 7         | 9<br>B      |         |                             |            |        |                                 |                            |                                      |          |
| SAND                   |                     | 18                            |               | 20 mm<br>14 mm    | 5         | 3  <br>1    |         |                             |            |        |                                 | Method                     |                                      | ysis     |
| GBAVE                  |                     | 64                            |               | 10 mm<br>6.3 mm   | 4         | 6  <br>5    |         |                             |            |        |                                 | Pre-treate                 | ed                                   |          |
|                        |                     |                               | -             | 5 mm<br>2 mm      | 3         | 2<br>0      |         |                             |            |        |                                 | with                       |                                      |          |
| COBBLE                 | S                   | 16                            |               | 1.18 mm<br>600 μm | 1         | 5           |         |                             |            |        |                                 | Pre-treatr                 | nent                                 |          |
| BOULDE                 | RS                  | 0                             |               | 300 μm<br>150 μm  | 3         | )<br>}      |         |                             |            |        |                                 | Density                    |                                      |          |
|                        |                     |                               |               |                   |           |             |         |                             |            |        |                                 |                            |                                      |          |
|                        |                     | <b>-</b>                      | ,             |                   |           |             |         | 00/0                        |            |        |                                 |                            |                                      | 27/01/20 |
| hemarks                | GS Siev             | ve:- i est per                | normed in a   | accordance wi     | ui BS EN  | 1/89        | 92-4:   | ∠016                        |            |        | 6                               |                            |                                      |          |

geotechnical and geoenvironmental speci

|                        |                        |                    |               |                   |                        |                | Samp<br>Samp<br>Samp | le Depth 1.<br>le Type B<br>le Ref C | 30497     |    |
|------------------------|------------------------|--------------------|---------------|-------------------|------------------------|----------------|----------------------|--------------------------------------|-----------|----|
| Sample Des<br>PROBABLE | CRIPTION<br>MADE GROUN | D: Cream sligh     | tly sandy gra | avelly SILT.      |                        |                |                      |                                      |           |    |
| 100                    |                        |                    |               |                   |                        |                |                      |                                      |           | ΠΠ |
| 90                     |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| 80                     |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| 70                     |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| /0                     |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| 60 —                   |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| i≣ 50 —                |                        |                    |               |                   |                        |                |                      |                                      |           | +  |
| 40                     |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| 30                     |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| 20                     | +                      |                    |               |                   |                        |                |                      |                                      |           |    |
| 10                     |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| 0                      |                        |                    |               |                   |                        |                |                      |                                      |           |    |
| 0.001                  |                        | 0.01               | 0.1           | F                 | 1<br>Particle Size (mn | 1)             | 10                   | 100                                  |           | 10 |
| Dassification CLA      | Fine                   | Medium Coa<br>SILT | arse Fir      | ne Medium<br>SAND | Coarse                 | Fine           | Medium Coa<br>Gravel | arse Cobbles                         | Boulders  |    |
|                        |                        |                    |               | ~ <b>-</b>        |                        |                |                      |                                      | 0 11 1    |    |
|                        | % of each              | 125                | 5 mm          | % Finer           | 63                     | μm             | 40                   | Not                                  | Available |    |
| GLAY                   | 12                     | - 75               | 5 mm<br>5 mm  | 100               | 6                      | μm<br>μm<br>μm | 37<br>29<br>12       | Sievir                               | ig Method |    |
| SILT                   | 28                     | 50                 | ) mm<br>5 mm  | 97<br>93          |                        | p III          | 12                   | W                                    | et sieve  |    |
| SAND                   | 16                     | 20                 | ) mm<br>I mm  | 84<br>80          |                        |                |                      | Fine Part                            | Pipette   |    |
| GRAVEL                 | 44                     | 10<br>6.3          | ) mm<br>3 mm  | 75<br>68          |                        |                |                      | Pre-treated                          | Hydrogen  |    |
|                        |                        |                    | omm<br>2mm    | 65<br>56<br>52    |                        |                |                      | % loss on                            | 0.00      |    |
|                        |                        | 600                | ) μm<br>) μm  | 48<br>45          |                        |                |                      | Pre-treatmen<br>Particle             | t<br>2.65 |    |
| BOULDERS               | 0                      | 150                | )µm           | 42                |                        |                |                      | Density                              | (Assumed) |    |

| roject:<br>roject No:   | A30:<br>PC1           | 3 AM<br>9770     | ESB<br>8            | UF           | IY 7      | ГОВ        | ER'         | WIC              | CK [       | 00          | W١   | N - P      | PHA               | \SE             | : <i>1</i> P |         | 00    |     | IE:       |         |                   |     |   |          | :               | Ho<br>Sar<br>Sar<br>Sar | e<br>np<br>np<br>np | le I<br>le T<br>le I | De<br>Гу<br>Re | pt<br>pe<br>f | В<br>13.<br>В<br>С | H72<br>.60-<br>304 | 2405<br>4.00<br>93 | )m          |     |      |
|-------------------------|-----------------------|------------------|---------------------|--------------|-----------|------------|-------------|------------------|------------|-------------|------|------------|-------------------|-----------------|--------------|---------|-------|-----|-----------|---------|-------------------|-----|---|----------|-----------------|-------------------------|---------------------|----------------------|----------------|---------------|--------------------|--------------------|--------------------|-------------|-----|------|
| Sample Do<br>Greenish g | <b>escr</b><br>irey m | ottled           | <b>on</b><br>I brov | wn           | cla       | yey S      | SAN         | ID a             | Ind        | GR          | ٩V   | /EL.       |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| 100                     |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              | Π       |       |     |           |         |                   |     |   |          |                 |                         |                     | ,<br>I               | 1              | ГП            | • •                |                    |                    |             |     | Π    |
| 90 —                    |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   | _   |   |          |                 |                         | 4                   |                      |                |               |                    |                    |                    |             |     |      |
| 80 —                    |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| 70                      |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| 10                      |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   | 1   | Π |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| 60 —<br>ž               |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         | 1     |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| ≝ 50 —<br>∦             |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   | $\square$       |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| 40 —                    |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| 30 —                    |                       |                  |                     |              |           |            |             |                  |            | -1          | 4    |            |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      | -              |               |                    |                    |                    |             |     |      |
| 20 —                    |                       |                  |                     | /            | ┦         | /          |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 | _                       |                     |                      | -              |               |                    | _                  |                    |             |     |      |
| 10 —                    | _                     |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| 0                       |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| 0.001                   |                       |                  |                     |              | 0.0       | 1          | -1          |                  |            |             | 0    | ).1        |                   |                 |              | P       | artic | de  | 1<br>Size | e (mr   | n)                |     |   | <br>1    | 0               |                         |                     |                      |                | 1             | 00                 |                    |                    |             |     | 1(   |
| lassification<br>Q      |                       | Fine             | e                   |              | Mec<br>Sl | dium<br>LT |             | Coa              | rse        |             |      | Fine       |                   |                 | Medi<br>SAN  | um<br>D |       | C   | Doars     | se      |                   | Fir | e | M<br>C   | edium<br>Fravel |                         | Coa                 | arse                 | _              | G             | obbles             |                    | E                  | Bould       | ərs |      |
|                         |                       | 8/ 0             |                     |              | 7         | Γ          |             |                  |            |             | +    |            |                   |                 |              | ٦       |       | Г   |           |         |                   |     |   | <br>0/ 0 | inor            |                         | ]                   | Г                    |                |               |                    |                    |                    |             |     |      |
|                         | Dri                   | %0               | 1 ead               |              |           | F          |             | 125              | m          | m           |      |            | 7 <b>° F</b><br>1 | 00              | r            |         |       |     |           | 63      | <b>ze</b><br>β μ  | m   |   | <br>/01  | 28              |                         |                     | -                    | U              | niid          | Not                | t Av               | ailat              | ble         | ent |      |
|                         |                       |                  | 12                  | <u> </u>     |           |            |             | 75               | m          | m<br>m      |      |            | 1                 | 00              |              |         |       |     |           | 6       | , μ<br>, μ<br>, μ | m   |   |          | 20<br>20<br>12  |                         |                     |                      |                | s             | Sievir             | ng N               | /leth              | nod         |     |      |
| SILT                    |                       |                  | 16                  | 6            |           |            | ć           | 50<br>50<br>37.5 | m          | m<br>m      |      |            | 9<br>0            | 98<br>97        |              |         |       |     |           | -       |                   |     |   |          |                 |                         |                     | -                    |                |               | W                  | et s               | sieve              | e           |     |      |
| SAND                    |                       |                  | 37                  | ,            |           |            |             | 20<br>14         | m<br>m     | m<br>m      |      |            | 8                 | 38<br>33        |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     | N                    | F<br>leth      | ine<br>nod    | Part               | icle<br>F          | e An<br>Pipet      | alys<br>ite | sis |      |
| GRAVEL                  |                       |                  | 35                  | 5            |           |            |             | 10<br>6.3        | m<br>m     | m<br>m      |      |            | 7                 | 76<br>71        |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     | Р                    | re-i           | trea          | ated               | ŀ                  | lydr               | oge         | n   |      |
|                         |                       |                  | 0                   | )            | 1         |            |             | 5<br>2<br>1 1 9  | m<br>m     | m<br>m<br>m |      |            | 7<br>6            | (U)<br>35<br>33 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     | %                    |                | SS (          | on                 |                    | 0.00               |             |     |      |
|                         |                       |                  |                     |              |           |            |             | 600<br>300       | μ<br>μ     | m<br>m      |      |            | 5                 | 59<br>53        |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     | P<br>P               | re-1<br>arti   | trea<br>icle  | atmer              | nt<br>2            | 2.65               |             |     |      |
| BUULDERS                | •                     |                  | 0                   | ,            |           | L          |             | 150              | μ          | m           |      |            | 4                 | 10              |              |         |       | L   |           |         |                   |     |   |          |                 |                         | ]                   |                      | ens            | sity          |                    | (                  | Ass                | ume         | ed) |      |
|                         |                       |                  |                     |              |           |            |             |                  |            |             |      |            |                   |                 |              |         |       |     |           |         |                   |     |   |          |                 |                         |                     |                      |                |               |                    |                    |                    |             |     |      |
| marks AGS               | Sieve                 | e:-Tes<br>tte:-T | st pe<br>est p      | erfo<br>perf | rme       | ed in      | acc<br>n ac | orda             | anc<br>dan | e w         | vith | BS<br>h BS |                   | ISC             | D 1          | 789     | )2-4  | 4:2 | 201       | 3<br>16 |                   |     |   |          |                 |                         |                     |                      |                | _             | _                  |                    |                    |             | 27  | /01/ |

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| roject:<br>roject | No:    | A30:<br>PC1  | 3 AM<br>9770         | IES<br>08  | BU   | R   | ΥTΟ    | BE  | RW          | /IC             | KD             | 00          | WN  | I - PI  | HAS            | SE          | 7A    | co              | UN    | NTE              | SS                   |      |     |     |              |       |        | Hol<br>Sar<br>Sar<br>Sar | e<br>np<br>np<br>np | le  <br>le <sup>-</sup><br>le | De<br>Ty<br>Re | pt<br>pe<br>f | h          | BH7<br>4.80<br>B<br>C30 | 2408<br>-5.30<br>494 | 5<br>Om         |      |      |
|-------------------|--------|--------------|----------------------|------------|------|-----|--------|-----|-------------|-----------------|----------------|-------------|-----|---------|----------------|-------------|-------|-----------------|-------|------------------|----------------------|------|-----|-----|--------------|-------|--------|--------------------------|---------------------|-------------------------------|----------------|---------------|------------|-------------------------|----------------------|-----------------|------|------|
| Sampl<br>Browr    | le De  | escr<br>grey | <b>ʻipti</b><br>sand | on<br>y sl | l    | tly | silty  | GR  | AVE         | ΞL.             |                |             |     |         |                |             |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     |                               |                |               |            |                         |                      |                 |      |      |
| 10                | 0      |              |                      | Π          |      |     |        |     |             |                 |                |             |     |         | Т              |             |       |                 |       |                  |                      | Т    |     |     |              |       |        |                          | Т                   |                               | 7              | ľП            | $\uparrow$ |                         |                      |                 |      | Π    |
| 9                 | 0      |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             | _     |                 |       |                  |                      |      | _   |     |              |       |        |                          | _                   | Å                             |                |               |            |                         |                      | _               |      |      |
| 8                 | 0      |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             |       |                 |       |                  |                      |      |     |     |              |       |        |                          | $\downarrow$        |                               |                |               |            |                         |                      |                 |      |      |
| 7                 | 0      |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             |       |                 |       |                  |                      |      |     |     |              |       |        |                          | 4                   |                               |                |               |            |                         |                      |                 |      |      |
| 6                 |        |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     |                               |                |               |            |                         |                      |                 |      |      |
| ine.              |        |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     |                               |                |               |            |                         |                      |                 |      |      |
| 1%                |        |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     |                               |                |               |            |                         |                      |                 |      |      |
| 4                 | 0      |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     |                               |                |               |            |                         |                      |                 |      |      |
| 3                 | 0      |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             |       |                 |       |                  |                      |      |     |     | $\mathbf{k}$ |       |        |                          |                     |                               |                |               |            |                         |                      | +               |      |      |
| 2                 | 0      |              |                      |            |      |     |        | _   |             |                 |                |             |     |         |                |             |       |                 |       |                  |                      |      | 7   | 4   |              |       |        |                          |                     |                               |                |               |            |                         |                      | -               |      |      |
| 1                 | o –    |              |                      |            |      |     |        |     |             |                 |                |             |     |         |                |             |       |                 | 1     | $\left  \right $ |                      |      |     |     |              |       |        |                          |                     |                               |                |               |            |                         |                      |                 |      |      |
|                   | 0.001  |              |                      |            |      |     | 1.01   |     |             |                 |                | •-          |     | +<br>.1 | +              | -           |       |                 |       | 1                |                      |      |     |     |              | <br>- | 10     |                          |                     |                               |                | 1             |            |                         |                      |                 |      | 1    |
| assificatio       | on     |              | Fin                  | e          | Т    | N   | /edium | 1   | C           | òars            | se             |             |     | Fine    |                | M           | ediur | <b>Par</b><br>n | ticle | e Siz            | <b>ze (m</b><br>irse | im)  | F   | ine |              | N     | edium  |                          | Coa                 | arse                          |                | 0             | bbble      | æ                       |                      | Bould           | lers |      |
|                   | a      |              |                      |            |      |     | SILT   |     |             |                 |                |             |     |         |                | S           | ANC   | )               | I     |                  |                      |      |     |     |              | (     | Gravel |                          |                     |                               |                |               |            |                         |                      |                 |      |      |
| lassifi           | icatio | on           | %0                   | of e       | ach  | า   |        |     |             | Siz             | e              |             |     | %       | - Fir          | ner         |       |                 |       |                  | ę                    | Size | •   |     |              | %     | Finer  |                          | ]                   |                               | U              | nife          | orm        | nity (                  | Coef                 | fici            | ent  |      |
|                   |        |              |                      |            |      |     |        |     | 1:<br>1     | 25<br>00        | mı<br>mı       | m<br>m      |     |         | 10<br>10       | 0<br>0      |       |                 |       |                  | 6                    | 31   | u m |     |              |       | 2      |                          |                     |                               |                |               |            | 20                      | .38                  |                 |      |      |
| SILT (ir<br>CLAY) | ncludi | ing          |                      |            | 2    |     |        |     |             | 75<br>63        | mı<br>mı       | m<br>m      |     |         | 10<br>10       | 0           |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     |                               |                | S             | Siev       | v <b>ing</b><br>Wet     | Met<br>siev          | <b>hod</b><br>e |      |      |
|                   |        |              |                      |            | -    |     |        |     | 37          | 50<br>7.5<br>20 | mi<br>mi       | m<br>m<br>m |     |         | 97<br>92<br>61 | /<br>2<br>1 |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     |                               | F              | ine           | e Pa       | rticl                   | e Ar                 | naly            | sis  |      |
| SAND              |        |              |                      | 1          | 13   |     |        |     |             | 14<br>10        | mi<br>mi       | m           |     |         | 50<br>39       | ,<br>)<br>Ə |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     | Ν                             | 1eth           | nod           |            |                         |                      |                 |      |      |
| GRAVE             | EL     |              |                      | 8          | 35   |     |        |     | 6           | 6.3<br>5        | mı<br>mı       | m<br>m      |     |         | 27<br>23       | 7<br>3      |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     | P<br>w                        | re-<br>/ith    | trea          | ated       |                         |                      |                 |      |      |
| COBBL             | LES    |              |                      |            | 0    |     |        |     | 1.          | 2<br>18         | mi<br>mi       | m<br>m      |     |         | 15<br>12       | 5           |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     | %<br>P                        | 6 lo<br>re-    | ss (<br>trea  | on<br>atme | ent                     |                      |                 |      |      |
| BOULE             | DERS   | ;            |                      |            | 0    |     |        |     | 6<br>3<br>1 | 00<br>00<br>50  | μι<br>μι<br>μι | m<br>m      |     |         | 6<br>3<br>2    |             |       |                 |       |                  |                      |      |     |     |              |       |        |                          |                     | P                             | art<br>)en     | icle<br>sity  | ;          |                         |                      |                 |      |      |
|                   |        |              | ł                    |            |      |     |        | Ĺ   |             |                 |                |             | _   |         |                |             |       |                 |       | L                |                      |      |     | ]   |              |       |        |                          | J                   | L                             |                | -             |            |                         |                      |                 |      |      |
| marks             |        | Siev         | e:-Te                | est r      | herf | ori | ned i  | n a | cco         | rda             | nce            | - 14/       | ith | BS E    |                | 50          | 17    | 000             |       |                  |                      |      |     |     |              |       |        |                          |                     |                               |                |               |            |                         |                      |                 | 27   | 7/01 |

| oject:<br>oject No:    | A30<br>PC1     | 3 AMI<br>19770           | ESBI<br>8       | JR           | Y TC        | ) BE         | RW          | 'ICł           | < D         | 00          | ۷N          | - PF       | HAS            | SE /        | /A   | co              | UN    | 116         | - 55                 |            |          |        |   |        |        | Ho<br>Sa<br>Sa<br>Sa | le<br>mp<br>mp<br>mp | le<br>le<br>le | De<br>Ty<br>Re | epi<br>/pe<br>ef | th<br>e | ВН<br>1.3<br>В<br>С3 | 055            | .06<br>.80r<br>4 | n          |     |        |
|------------------------|----------------|--------------------------|-----------------|--------------|-------------|--------------|-------------|----------------|-------------|-------------|-------------|------------|----------------|-------------|------|-----------------|-------|-------------|----------------------|------------|----------|--------|---|--------|--------|----------------------|----------------------|----------------|----------------|------------------|---------|----------------------|----------------|------------------|------------|-----|--------|
| Sample D<br>MADE GF    | )esci<br>Rouni | r <b>iptio</b><br>D: Cre | on<br>eam s     | slig         | htly :      | sanc         | ly sl       | ight           | ily g       | rav         | relly       | y silt     |                |             |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| 100                    |                |                          |                 | Π            |             |              |             |                |             |             | Π           |            |                |             |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      | r              | 11             | T                |         | •                    |                |                  |            |     | Т      |
| 90 -                   |                |                          |                 |              |             |              |             |                | _           |             |             |            |                |             |      |                 |       |             |                      |            |          | _      | _ |        |        |                      | Å                    | ,<br>          |                |                  |         |                      |                | _                |            |     | ╢      |
| 80 -                   |                |                          |                 |              |             |              |             |                |             |             |             |            |                |             |      |                 |       |             |                      |            |          |        |   |        |        | 1                    |                      |                |                |                  |         |                      |                |                  |            |     |        |
| -                      |                |                          |                 |              |             |              |             |                |             |             |             |            |                |             |      |                 |       |             |                      |            |          |        | • |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| 70 —                   |                |                          |                 |              |             |              |             |                |             |             |             |            |                |             |      |                 |       | _           |                      | 7          | 7        |        |   |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| 60 -                   |                |                          |                 | ╫            |             |              |             |                | $\langle +$ | •           | 7           |            | -              |             |      |                 |       |             |                      |            |          | +      |   |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| <sup>E</sup> Eine 20 – |                |                          |                 |              |             | 4            |             |                | _           |             |             |            |                |             |      |                 |       |             |                      |            |          | +      |   |        |        |                      |                      |                |                |                  |         |                      |                | -                |            |     | +      |
| 40 -                   |                |                          |                 | $\parallel$  | 1           |              |             |                | _           |             |             |            |                |             |      |                 |       |             |                      |            |          | _      | _ |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     | +      |
| 30 -                   |                |                          |                 |              |             |              |             |                |             |             |             |            |                |             |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| ~                      |                | X                        |                 |              |             |              |             |                |             |             |             |            |                |             |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| 20 -                   |                |                          |                 |              |             |              |             |                |             |             |             |            |                |             |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| 10 —                   |                |                          |                 |              |             |              |             |                |             |             |             |            |                |             |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| 0.00 <sup>-</sup>      | 1              |                          |                 | (            | ).01        |              |             |                |             |             | 0.          | 1          |                |             |      |                 |       | <br>1       |                      |            |          |        |   | <br>1( | )      |                      |                      |                |                |                  | <br>100 | )                    |                |                  |            |     | <br>1( |
| assification           |                | Fine                     | Э               | 1            | Vediur      | n            | С           | bars           | e           |             | F           | ine        |                | M           | ediu | <b>Par</b><br>n | ticle | e Si<br>Coa | <b>ze (n</b><br>arse | nm)        | F        | ine    |   | Mə     | dium   |                      | 0                    | arse           | !              |                  | Cobb    | oles                 |                | Bo               | ulder      | ŝ   |        |
|                        |                |                          |                 |              | SILT        |              |             |                |             |             |             |            |                | S           | ANE  | )               |       |             |                      |            |          |        |   | G      | avel   |                      |                      |                |                |                  |         |                      |                |                  |            |     |        |
| lassificatio           | on             | % o                      | f eac           | :h           | ]           |              |             | Siz            | е           |             |             | %          | , Fii          | ner         |      | ]               |       |             | ;                    | Size       | •        |        | % | ۶F     | iner   |                      | ]                    |                | ι              | Jnif             | for     | mity                 | Co             | effi             | cier       | nt  |        |
| CLAY                   |                |                          | 18              |              |             |              | 1:          | 25<br>00       | mn<br>mn    | ר<br>ו      |             |            | 10<br>10       | 0<br>0      |      |                 |       |             | 2                    | 53  <br>20 | μm<br>μm | ו<br>ו |   | 5      | 7      |                      |                      |                |                |                  |         | Not /                | Avai           | labl             | e          |     |        |
|                        |                |                          | 39              |              |             |              |             | 75<br>63       | mn          | ו<br>ו      |             |            | 10<br>10       | 0           |      |                 |       |             |                      | 6  <br>2   | μm<br>μm | ו<br>ו |   | 4<br>1 | 1<br>8 |                      |                      | -              |                |                  | Sie     | eving<br>We          | g Mo<br>et sio | etho<br>eve      | bd         |     |        |
|                        |                |                          | 00              |              |             |              | 37          | 50<br>7.5      | mn          | ו<br>ו<br>ו |             |            | 98             | 0<br>3<br>7 |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                | 1              | Fin              | e P     | artio                | cle /          | Ana              | lysi       | s   |        |
| SAND                   |                |                          | 10              |              |             |              |             | 20<br>14<br>10 | mn          | י<br>ר<br>ר |             |            | 83             | 3           |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                | Vet            | hoo              | d       |                      | Pi             | oett             | e          |     |        |
| GRAVEL                 |                |                          | 33              |              |             |              | 6           | 5.3<br>5.3     | mm          | י<br>ו<br>ו |             |            | 75<br>75<br>72 | 5           |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                | ⊃re<br>with    | -tre<br>า        | eate    | d                    | Hy<br>Pe       | dro<br>erox      | gen<br>ide |     |        |
| COBBLES                |                |                          | 0               | _            |             |              | 1.          | 2<br>18        | mn          | י<br>ו<br>ו |             |            | 67<br>65       | -<br>7<br>5 |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      | 0              | %  (<br>)~~    | OSS              | on      | 0000+                | 0.0            | 00               |            |     |        |
|                        | \$             |                          | 0               |              |             |              | 6)<br>3)    | 00<br>00       | μm<br>μm    | ו<br>ו      |             |            | 63<br>62       | 3           |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                | Par            | ticle            | e       |                      | 2.6            | 65               |            |     |        |
|                        |                | <u> </u>                 | 0               |              | ]           |              | 1           | 50             | μm          | 1           |             |            | 60             | J           |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      | Ľ              | Jer            | ISIT             | У       |                      |                | ssu              | meo        | 1)  |        |
|                        | <u>.</u>       |                          |                 |              |             |              |             |                |             |             |             |            |                |             |      |                 |       |             |                      |            |          |        |   |        |        |                      |                      |                |                |                  |         |                      |                |                  |            | 07  | 10.1   |
| narks AGS              | Siev<br>Pipe   | e:-Tes<br>tte:-T         | st pei<br>est p | rfor<br>erfo | med<br>orme | in a<br>d in | ccoi<br>acc | rdai<br>ord    | nce<br>anc  | wit<br>e w  | h E<br>/ith | BS E<br>BS | N I<br>FN      | SO<br>US(   | 17   | 892             | 2-4:  | 20          | 16<br>016            |            |          |        |   |        |        |                      |                      | _              | _              | _                |         |                      | -              |                  |            | 21/ | UI/    |

| Project:<br>Project No | A30<br>): PC   | 03 AME<br>19770        | ESBL<br>8  | JR  | Ү ТО В   | ERW          | /ICI             | K D            | OV          | ۷N   | - PH  | ASE                | 7 <b>7</b> | A CO              | JUC   | NT         | ESS                    | 3                |                |             |   |   |                  | H<br>S<br>S<br>S | ole<br>am<br>am<br>am | ple<br>ple<br>ple | De<br>Ty<br>Re | ept<br>/pe<br>ef | E<br>th 4<br>e E  | 3H72<br>30-<br>-<br>3<br> | 2406<br>4.80<br>55   | m                  |      |           |
|------------------------|----------------|------------------------|------------|-----|----------|--------------|------------------|----------------|-------------|------|-------|--------------------|------------|-------------------|-------|------------|------------------------|------------------|----------------|-------------|---|---|------------------|------------------|-----------------------|-------------------|----------------|------------------|-------------------|---------------------------|----------------------|--------------------|------|-----------|
| Sample<br>POSSIB       | Desc<br>LE MAI | <b>riptic</b><br>DE GF | nc<br>NUOR | ٧D  | : Greyis | sh bro       | own              | ı ma           | ottle       | ed g | rey s | light              | ily s      | anc               | Jy g  | grav       | velly                  | CLA              | ΑY.            |             |   |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| 100                    |                |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       |                   | $\uparrow$     | T                |                   |                           |                      |                    |      | $\square$ |
| 90                     |                |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                | _           |   |   |                  | /                | $\mathbb{F}$          |                   |                | +                |                   |                           |                      |                    |      |           |
| 80                     |                |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                |             |   |   |                  | /                |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| 70                     |                |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                |             | 1 |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| 60<br>≝                |                |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   | +     | 7          |                        |                  |                |             |   |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| i⊒ 50<br>%             |                |                        |            |     |          |              |                  | -              | •           | 7    |       |                    |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| 40                     |                |                        |            | 7   |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| 30<br>20               |                |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| 10                     |                |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| 0                      | 01             |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                |             |   |   | 10               |                  |                       |                   |                |                  | 100               |                           |                      |                    |      | 1000      |
| Classification         |                | Fine                   | e          |     | Medium   |              | Doars            | se             |             | Fi   | ne    |                    | Medi       | <b>P</b> a<br>ium | artic | sie S<br>O | <b>Size (</b><br>barse | mm)              |                | Fine        |   |   | Medi             | um               |                       | barse             | Э              |                  | Cobbles           | 5                         | В                    | oulder             | s    |           |
|                        | UAT            |                        |            |     | SLT      |              |                  |                |             |      |       |                    | SAN        | -0                |       |            |                        |                  |                |             |   |   | Gra              | vel              |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| Classifica             | tion           | % <b>o</b> f           | f eac      | h   |          | 1            | <b>Siz</b><br>25 | mr             | n           |      | %     | <b>Fine</b><br>100 | er         | _                 |       |            |                        | <b>Siz</b><br>63 | e<br>μn        | n           |   | % | <b>Fir</b><br>47 | ner<br>,         | _                     | -                 | ι              | Jnif             | <b>ormi</b><br>No | <b>ty C</b><br>ot Av      | <b>oeff</b><br>ailab | <b>icien</b><br>le | It   |           |
| CLAY                   |                |                        | 17         |     |          | 1            | 00<br>75<br>63   | mn<br>mn<br>mn | n<br>n<br>n |      |       | 100<br>100<br>100  |            |                   |       |            |                        | 20<br>6<br>2     | μn<br>μn<br>μn | n<br>n<br>n |   |   | 44<br>34<br>17   | ↓<br>↓<br>,      |                       |                   |                |                  | Sievi             | ng N                      | /leth                | od                 |      |           |
| SILT                   |                |                        | 30         |     |          | 37           | 50<br>7.5<br>20  | mn<br>mn       | n<br>n<br>n |      |       | 100<br>97<br>92    |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       | -                 |                | Fin              | v<br>e Par        | ticle                     | Ana                  | alysi              | s    |           |
| SAND                   |                |                        | 15         |     |          |              | 14<br>10         | mn<br>mn       | n<br>n      |      |       | 81<br>74           |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       | -                 | Me             | tho              | d<br>atad         | F                         | Pipeti               | te<br>Daen         |      |           |
| GRAVEL                 |                |                        | 38         |     |          | e            | 5.3<br>5<br>2    | mn<br>mn<br>mn | n<br>n<br>n |      |       | 70<br>68<br>62     |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       | ,                 | with           | רניפ<br>ו<br>הרב |                   | F                         | ero>                 | ide                |      |           |
| COBBLES                | 6              |                        | 0          |     | -        | 1.<br>6<br>3 | 18<br>00<br>00   | mn<br>μn<br>μn | n<br>n<br>n |      |       | 59<br>56<br>53     |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       | -                 | Pre            | ticle            | atme              | nt 2                      | 2.65                 |                    |      |           |
| BOULDEI                | RS             |                        | 0          |     |          | 1            | 50               | μn             | n           |      |       | 50                 |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       |                   | Der            | nsit             | /                 | (                         | Assı                 | umed               | )    |           |
|                        |                |                        |            |     |          |              |                  |                |             |      |       |                    |            |                   |       |            |                        |                  |                |             |   |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    |      |           |
| Remarks                | Siev           | /e:-Tes                | st per     | for | med in   | acco         | rda              | nce            | wit         | h B  | S EN  | N IS               | 01         | 789               | )2-4  | 1:20       | 016                    |                  |                |             |   |   |                  |                  |                       |                   |                |                  |                   |                           |                      |                    | 27/0 | 1/202     |

### \_ -\_ . . .

| roject:<br>roject No | A30<br><b>D:</b> PC <sup>-</sup> | 3 AME:<br>197708        | SBU               | RY       | TO B    | ERW    | /ICF           | ( D(     | wo          | N - P | HAS      | SE 7   | 'A ( | :00        | JNT         | ESS              |      |     |   |   |                  | +<br>9<br>9<br>9 | iole<br>Sam<br>Sam<br>Sam | ple<br>ple<br>ple | e De<br>Ty<br>Re | epi<br>ype<br>ef | th<br>e | ВН<br>6.70<br>В<br>С30 | 7240<br>)-7.2<br>)527 | 6<br>0m  |     |         |
|----------------------|----------------------------------|-------------------------|-------------------|----------|---------|--------|----------------|----------|-------------|-------|----------|--------|------|------------|-------------|------------------|------|-----|---|---|------------------|------------------|---------------------------|-------------------|------------------|------------------|---------|------------------------|-----------------------|----------|-----|---------|
| Sample<br>Grey an    | Desc<br>d brown                  | r <b>iptio</b><br>sandy | <b>n</b><br>sligh | itly s   | silty G | RAVI   | EL.            |          |             |       |          |        |      |            |             |                  |      |     |   |   |                  |                  |                           |                   |                  |                  |         |                        |                       |          |     |         |
| 100                  |                                  |                         |                   |          |         |        |                |          |             |       |          |        | Т    |            |             |                  |      |     |   |   |                  |                  |                           |                   | X                | <b>T</b> T       |         | •                      |                       |          |     | Π       |
| 90                   |                                  |                         |                   |          |         |        |                |          |             |       |          |        |      |            |             |                  |      |     |   |   |                  |                  |                           |                   |                  |                  |         |                        |                       |          |     |         |
| 80                   |                                  |                         |                   |          |         |        |                |          |             |       |          |        |      |            |             |                  |      |     |   |   |                  |                  |                           | Д                 |                  |                  |         |                        |                       |          |     |         |
| -70                  |                                  |                         |                   |          |         |        |                |          |             |       |          |        |      |            |             |                  |      |     |   |   |                  |                  |                           |                   |                  |                  |         |                        |                       |          |     |         |
| 70                   |                                  |                         |                   |          |         |        |                |          |             |       |          |        |      |            |             |                  |      |     |   |   |                  |                  | $\left  \right $          |                   |                  |                  |         |                        |                       |          |     |         |
| 60<br>               |                                  |                         |                   |          |         |        |                |          |             |       |          |        |      |            |             |                  |      |     |   |   |                  | 7                |                           |                   |                  |                  |         |                        |                       |          |     | ╁       |
| Lin 50               |                                  |                         |                   |          |         |        |                |          | +           |       | _        | +      | +    |            |             |                  |      | -   |   | + | $\parallel \mid$ |                  |                           |                   | _                | ╫                |         |                        |                       | _        |     | ┼       |
| 40                   |                                  |                         |                   |          |         |        |                |          |             |       |          | _      | +    |            |             |                  |      |     |   | + | $\mathbb{H}$     |                  |                           |                   |                  | +                |         |                        |                       |          |     | +       |
| 30                   |                                  |                         |                   |          |         |        |                |          |             |       |          | _      | _    |            |             |                  |      |     |   |   | 1                |                  |                           |                   |                  |                  |         |                        |                       |          |     |         |
| 20                   |                                  |                         |                   |          |         |        |                |          |             |       |          |        |      |            |             |                  |      |     |   |   |                  |                  |                           |                   |                  |                  |         |                        |                       |          |     |         |
| 20                   |                                  |                         |                   |          |         |        |                |          |             |       |          |        |      |            |             |                  |      | 7   | 1 |   |                  |                  |                           |                   |                  |                  |         |                        |                       |          |     |         |
| 10                   |                                  |                         |                   |          |         |        |                |          |             |       |          | _      | /    |            |             |                  |      |     |   |   |                  |                  |                           |                   |                  |                  |         |                        |                       |          |     |         |
| 0<br>0.0             | 001                              |                         |                   | 0.0      | 01      |        |                |          |             | 0.1   |          |        |      |            |             | 1                |      |     |   |   | 10<br>10         | )                |                           |                   |                  |                  | 100     | )                      |                       |          |     | ⊥⊥<br>1 |
| assification         |                                  | Fine                    |                   | Me       | edium   | C      | òarse          | е        |             | Fine  |          | Me     | dium | Parti<br>1 | cle S<br>Cl | Size (n<br>oarse | 1m)  | Fir | e |   | Mex              | lium             | (                         | Coars             | е                |                  | Cobb    | des                    |                       | Bould    | ers |         |
|                      | UAT                              |                         |                   | S        | SILT    |        |                |          |             |       |          | Sł     | AND  |            |             |                  |      |     |   |   | Gr               | avel             |                           |                   |                  |                  |         |                        |                       |          |     |         |
| lassifica            | ition                            | % of                    | each              | <b>1</b> | [       |        | Size           | е        |             | 9     | 6 Fir    | ner    |      | ]          |             | ;                | Size |     |   | 9 | 6 Fi             | ner              |                           |                   | I                | Jni              | forr    | nity                   | Coe                   | ficie    | ent |         |
|                      |                                  |                         |                   |          |         | 1:     | 25<br>00       | mm       | ו<br>ו      |       | 10       | 0<br>0 |      |            |             | 6                | 53 µ | ιm  |   |   | 2                |                  |                           |                   |                  |                  |         | 1:                     | 3.29                  |          |     |         |
| SILT (incl<br>CLAY)  | uding                            |                         | 2                 |          |         |        | 75<br>63<br>50 | mm       | ו<br>ו<br>ו |       | 10       | 0      |      |            |             |                  |      |     |   |   |                  |                  |                           |                   |                  |                  | Sie     | ving<br>We             | Met<br>t siev         | hod<br>e |     |         |
| - ,                  |                                  |                         |                   |          |         | 37     | 7.5<br>20      | mm       | י<br>ו<br>ו |       | 91<br>66 |        |      |            |             |                  |      |     |   |   |                  |                  |                           |                   |                  | Fin              | e Pa    | artic                  | le Ar                 | naly     | sis |         |
| SAND                 |                                  |                         | 10                | _        |         |        | 14<br>10       | mm<br>mm | ו<br>ו      |       | 55<br>43 | 5      |      |            |             |                  |      |     |   |   |                  |                  |                           |                   | Me               | tho              | d       |                        |                       |          |     |         |
| GRAVEL               |                                  |                         | 88                |          |         | 6      | 6.3<br>5       | mm<br>mm | ו<br>ו      |       | 26<br>22 | 6<br>2 |      |            |             |                  |      |     |   |   |                  |                  |                           |                   | Pre<br>witl      | e-tre<br>า       | eate    | d                      |                       |          |     |         |
| OBBLE                | S                                |                         | 0                 |          |         | 1.     | 2<br>18        | mm<br>mm | ו<br>ו      |       | 12<br>10 | 2<br>) |      |            |             |                  |      |     |   |   |                  |                  |                           | Ī                 | % l<br>Pre       | OSS              | on      | lent                   |                       |          |     |         |
| BOULDE               | RS                               |                         | 0                 |          |         | 6<br>3 | 00<br>00       | μm<br>μm | ו<br>ו      |       | 7        |        |      |            |             |                  |      |     |   |   |                  |                  |                           | ł                 | Pa               | ticle            | e       |                        |                       |          |     |         |
|                      |                                  | ļ                       |                   |          | L       | 1:     | 50             | μſſ      | 1           | ļ     | 2        |        |      | J          | L           |                  |      |     |   |   |                  |                  |                           | Ĺ                 | 56               | 1311             | y       |                        | <u> </u>              |          |     |         |
|                      |                                  |                         |                   |          |         |        |                |          |             |       |          |        |      |            |             |                  |      |     |   |   |                  |                  |                           |                   |                  |                  |         |                        |                       |          |     |         |

geotechnical and geoenvironmental specialists

| roject:<br>roject Nc | A30<br>): PC1   | 3 AMESBU<br>197708          | RY TO BI  | ERWICK D                   | ow          | N - PHA       | SE 7A         | CO       | UNT   | TESS     |          |    |   |          | Hole<br>Samp<br>Samp<br>Samp | ole [<br>ole ]<br>ole F | Dep<br>Type<br>Ref | BH<br>1.2<br>e B<br>C3 | 72501<br>0-1.65r<br>0528   | n      |      |
|----------------------|-----------------|-----------------------------|-----------|----------------------------|-------------|---------------|---------------|----------|-------|----------|----------|----|---|----------|------------------------------|-------------------------|--------------------|------------------------|----------------------------|--------|------|
| Sample<br>PROBAI     | Desci<br>Ble Ma | r <b>iption</b><br>.DE GROU | ND: Crear | nish white s               | ligh        | tly sandy     | slightl       | y gra    | avell | y silt.  |          |    |   |          |                              |                         |                    |                        |                            |        |      |
| 100                  |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         | ŢŢŢŢ               |                        |                            |        | TΠ   |
| 90                   |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        |      |
| 80                   |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        | ++++ |
| 70                   |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        |      |
| 60                   |                 |                             |           |                            | -           |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        |      |
| Eine                 |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        |      |
| ~ 50                 |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        |      |
| 40                   |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        |      |
| 30                   |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        |      |
| 20                   |                 |                             |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        | +++  |
| 10                   |                 |                             |           |                            |             |               |               |          |       |          |          | +  |   |          |                              |                         | ++                 |                        |                            |        | +++  |
| 0                    | 01              |                             | 0.01      |                            |             | 0.1           |               |          |       | 1        |          |    |   | 10       |                              |                         |                    | 100                    |                            |        | 10   |
| Dassification        |                 | Fine                        | Medium    | Coarse                     |             | Fine          | Mediu         | Par<br>m | ticle | Size (mn | ו)<br>ה  | ne |   | Medium   |                              | oarse                   |                    | Cobbles                | Bc                         | ulders |      |
|                      | (LAY            | -                           | SILT      |                            |             | -             | SAN           | D        |       |          |          |    |   | Gravel   |                              |                         |                    |                        |                            |        |      |
| Classifica           | tion            | % of each                   |           | Size                       |             | % Fi          | ner           |          |       | Si       | ze       |    | % | Finer    |                              |                         | Uni                | formity                | Coeffi                     | cient  |      |
| CLAY                 |                 | 11                          |           | 125 mn<br>100 mn           | ו<br>ו      | 10<br>10      | 00<br>10      |          |       | 63<br>20 | μm<br>μm |    |   | 63<br>61 |                              |                         |                    | Not A                  | Availabl                   | e      |      |
| SILT                 |                 | 52                          |           | 63 mn                      | ו<br>ו<br>ו | 10            | 0<br>10<br>10 |          |       | 2        | μm<br>μm |    |   | 47<br>11 |                              | -                       |                    | Sieving<br>We          | <b>g Metho</b><br>et sieve | bd     |      |
|                      |                 |                             | -         | 37.5 mn<br>20 mn           | י<br>ו<br>ו | 10<br>10<br>9 | 10<br>7       |          |       |          |          |    |   |          |                              |                         | Fin                | e Partic               | le Ana                     | lysis  |      |
| SAND                 |                 | 21                          | -         | 14 mn<br>10 mn             | า<br>า      | 9)<br>9:      | 6<br>3        |          |       |          |          |    |   |          |                              | м                       | etho               | d                      | Pipette                    | 9      |      |
| GRAVEL               |                 | 16                          | -         | 6.3 mn<br>5 mn             | ר<br>ו      | 9)<br>8:      | 0<br>9        |          |       |          |          |    |   |          |                              | P<br>w                  | re-tre<br>ith      | eated                  | Peroxi                     | de     |      |
| COBBLES              | 6               | 0                           |           | 2 mn<br>1.18 mn<br>600 u n | י<br>ר<br>ר | 8<br>8<br>7   | 4<br>1<br>8   |          |       |          |          |    |   |          |                              | %<br>P                  | loss<br>re-tre     | on<br>eatment          | 0.00                       |        |      |
|                      | RS              | 0                           |           | 300 μn<br>150 μn           | 1<br>1      | 7:<br>6:      | 5<br>9        |          |       |          |          |    |   |          |                              | P<br>D                  | articl<br>ensit    | е<br>у                 | 2.65<br>(Assu              | med)   |      |
| BOULDE               |                 | 1                           |           |                            |             |               |               |          | L     |          |          |    |   |          |                              | L                       |                    |                        | •                          |        |      |
| BOULDER              |                 | ł                           |           |                            |             |               |               |          |       |          |          |    |   |          |                              |                         |                    |                        |                            |        |      |

| oject:<br>oject No:  | A303             | 3 AMI<br>9770          | ESB<br>8            | UF  | Y TO    | ) be       | RW     | VIC       | KC       | 00          | 1W | N -  | PH | AS           | E7     | 7A ( | 0               | UN    | ITE         | ESS                  |          |          |    |   |   |          | Ho<br>Sa<br>Sa<br>Sa | ole<br>mp<br>mp<br>mp | ole<br>ole<br>ole | De<br>Ty<br>Re | ept<br>/pe<br>ef | h<br>e    | BH7<br>3.20<br>B<br>C30 | 725(<br>)-3.6<br>)53( | )1<br>65m<br>) | I         |   |    |
|----------------------|------------------|------------------------|---------------------|-----|---------|------------|--------|-----------|----------|-------------|----|------|----|--------------|--------|------|-----------------|-------|-------------|----------------------|----------|----------|----|---|---|----------|----------------------|-----------------------|-------------------|----------------|------------------|-----------|-------------------------|-----------------------|----------------|-----------|---|----|
| Sample D<br>Brownish | Descr<br>green s | <b>iptio</b><br>slight | <b>on</b><br>ly gra | ave | elly sa | andy       | CL     | AY.       |          |             |    |      |    |              |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| 100                  |                  |                        |                     |     |         |            |        |           |          |             |    | Τ    |    |              |        |      | Π               |       | Π           |                      | Т        |          |    |   |   |          |                      |                       |                   | И              | ΤT               | -         |                         |                       |                |           |   | Π  |
| 90 -                 |                  |                        |                     |     |         |            |        | -         |          |             |    |      |    |              |        | _    |                 |       |             |                      |          |          |    |   |   |          |                      |                       | 4                 |                |                  |           |                         |                       |                |           |   |    |
| 80 –                 |                  |                        |                     |     |         |            |        |           |          |             |    |      |    |              |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| _                    |                  |                        |                     |     |         |            |        |           |          |             |    |      |    |              |        |      |                 |       |             |                      |          |          | -  | H | 1 |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| 70 —                 |                  |                        |                     |     |         |            |        |           |          |             |    |      |    |              |        |      |                 |       | 7           | ~                    |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| 60 -                 |                  | +                      |                     |     |         |            |        |           |          |             |    |      |    |              | 7      | 7    | $\frac{1}{1}$   |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| <sup>E</sup> 50 –    |                  | -                      |                     |     |         |            |        | -         |          |             |    |      |    | $\downarrow$ | /      |      |                 |       |             |                      |          | _        |    |   |   |          | _                    |                       |                   |                | +                |           |                         |                       |                |           |   | ╢  |
| 40 —                 |                  | _                      |                     |     |         |            |        |           |          |             |    |      |    |              |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| 30 -                 |                  |                        |                     |     |         |            |        |           |          | 4           |    | 1    |    |              |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| 20                   |                  |                        |                     |     |         |            |        |           |          |             |    |      |    |              |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| 20                   |                  |                        | $\left  \right $    |     |         |            |        |           |          |             |    |      |    |              |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| 10 —                 |                  |                        |                     |     |         |            |        |           |          |             |    |      |    |              |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| 0 L                  | 1                |                        |                     |     | 0.01    |            |        |           |          |             |    | ).1  |    |              |        |      |                 |       | 1           |                      |          |          |    |   |   | 10       |                      |                       |                   |                |                  | 100       |                         |                       |                |           |   | 10 |
| assification         |                  | Fine                   | е                   |     | Mediu   | ım         | (      | Coar      | se       |             |    | Fine | 9  |              | Me     | diun | <b>Par</b><br>n | ticle | e Si<br>Coa | <b>ze (m</b><br>arse | m)       | Fi       | ne |   | Ν | fedium   | 1                    | Q                     | arse              |                | (                | bbble     | es                      |                       | Bou            | ulders    | 6 |    |
|                      |                  |                        |                     |     | SILT    | Г <u> </u> |        |           |          |             |    |      |    |              | Sł     | AND  |                 |       |             |                      |          |          |    |   | ( | Gravel   |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |
| lassificati          | on               | % <b>o</b>             | f ead               | ch  |         |            |        | Siz       | ze       |             |    |      | %  | Fin          | er     |      | ]               |       |             | 5                    | Size     |          |    |   | % | Fine     | r                    | ]                     |                   | ι              | Jnif             | orm       | nity                    | Coe                   | effic          | ien       | t |    |
| CLAY                 |                  |                        | 12                  | 2   |         |            | 1<br>1 | 25<br>00  | mı<br>mı | m<br>m      |    |      |    | 100<br>100   | )<br>) |      |                 |       |             | 6<br>2               | 3μ<br>0μ | ιm<br>ιm |    |   |   | 32<br>24 |                      |                       |                   |                |                  | N         | ot A                    | vaila                 | able           | )         |   |    |
| SILT                 |                  |                        | 20                  | )   |         |            |        | 75<br>63  | mi<br>mi | m<br>m<br>m |    |      |    | 100          | )      |      |                 |       |             |                      | 6μ<br>2μ | ιm<br>ιm |    |   |   | 18<br>12 |                      |                       | +                 |                | :                | Siev      | v <b>ing</b><br>We      | Me<br>t sie           | tho<br>ve      | d         |   |    |
|                      |                  |                        |                     |     | 1       |            | 37     | 7.5<br>20 | mi       | m           |    |      |    | 93<br>87     |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       | F                 | I              | -ine             | e Pa      | rtic                    | le A                  | nal            | ysis      | 5 |    |
| SAND                 |                  |                        | 38                  | 3   |         |            |        | 14<br>10  | mi       | m<br>m      |    |      |    | 84<br>82     |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       | ſ                 | Net            | hoc              | I         |                         | Pip                   | ette           | •         |   |    |
| GRAVEL               |                  |                        | 30                  | )   |         |            | 6      | 6.3<br>5  | mi<br>mi | m<br>m      |    |      |    | 77<br>75     |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       | F                 | Pre<br>vith    | -tre             | ated      | I                       | Hyo<br>Per            | drog<br>oxic   | jen<br>de |   |    |
| COBBLES              |                  |                        | 0                   | )   |         |            | 1.     | 2<br>18   | mı<br>mı | m<br>m      |    |      |    | 70<br>68     |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   | %  (<br>Dre    | DSS              | on<br>atm | ent                     | 0.0                   | 0              |           |   |    |
| BOULDERS             | S                |                        | 0                   | )   | 1       |            | 6<br>3 | 00<br>00  | μı<br>μι | m<br>m      |    |      |    | 64<br>56     |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       | F                 | Par            | ticle            | )<br>/    |                         | 2.6<br>(Ac            | 5              | neď       | ) |    |
|                      |                  | <u> </u>               |                     |     | _       | Ĺ          | 1      | 50        | μ        |             |    |      |    | 40           |        |      |                 |       | L           |                      |          |          | [  |   |   |          |                      |                       | Ľ                 |                |                  |           |                         | (, 13                 |                |           | , |    |
|                      |                  |                        |                     |     |         |            |        |           |          |             |    |      |    |              |        |      |                 |       |             |                      |          |          |    |   |   |          |                      |                       |                   |                |                  |           |                         |                       |                |           |   |    |

| oject: A                    | 303 AMESBUF<br>C197708      | Y TO BEF         | RWICK DO         | WN - PHASE 7A (     | COUNTESS               |                   |             | Hole<br>Samp<br>Samp<br>Samp | le Depth<br>le Type<br>le Ref | BH72501<br>4.30-4.60m<br>B<br>C30518 |         |
|-----------------------------|-----------------------------|------------------|------------------|---------------------|------------------------|-------------------|-------------|------------------------------|-------------------------------|--------------------------------------|---------|
| Sample Des<br>Brownish gree | cription<br>en very sandy v | ery clayey       | GRAVEL.          |                     |                        |                   |             |                              |                               |                                      |         |
| 100                         |                             |                  |                  |                     |                        |                   |             |                              | ТИШ                           | •                                    |         |
| 90                          |                             |                  |                  |                     |                        |                   | + + + + + + |                              | +++++                         |                                      |         |
| 80                          |                             |                  |                  |                     |                        |                   |             | /                            |                               |                                      |         |
| 70                          |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| en                          |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| . <u></u>                   |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| <sup><sup>⊥</sup> 50</sup>  |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| 40                          |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| 30                          |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| 20                          |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| 10                          |                             |                  |                  |                     |                        |                   | ++++++      |                              |                               |                                      |         |
| 0                           |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| 0.001                       |                             | 0.01             |                  | 0.1                 | 1<br>Particle Size (mi | m)                | 10          | 0                            | 100                           | )                                    | 10      |
| lassification<br>CLAY       | Fine                        | SILT             | Coarse           | Fine Mediun<br>SAND | n Coarse               | Fine              | G           | dium Co<br>ravel             | arse Cob                      | bles Bou                             | lders   |
| Nassification               | % of each                   | ] [              | Sizo             | % Einor             |                        | 170               | % F         | iner                         | Unifor                        | mity Cooffic                         | iont    |
|                             | 7                           | 1  -             | 125 mm           | 100                 |                        | 12e<br>3 μm       | 2           | 22                           |                               | 2703.06                              |         |
|                             |                             | -                | 75 mm            | 100                 |                        | )μm<br>δμm<br>νμm | 1           | 6<br>4<br>7                  | Sie                           | eving Metho                          | d       |
| SILT                        | 15                          | -                | 50 mm<br>37.5 mm | 96                  |                        | - 2011            |             |                              |                               | W et sieve                           |         |
| SAND                        | 22                          |                  | 20 mm<br>14 mm   | 77<br>70            |                        |                   |             |                              | Fine F<br>Method              | Particle Analy<br>Pipette            | /sis    |
| GRAVEL                      | 56                          |                  | 10 mm<br>6.3 mm  | 63<br>55            |                        |                   |             |                              | Pre-treate                    | ed Hydrog                            | en      |
|                             |                             | 1                | 5 mm<br>2 mm     | 52<br>44<br>41      |                        |                   |             |                              | % loss or                     | 0.00                                 |         |
|                             |                             | $\left  \right $ | 600 μm<br>300 μm | 36                  |                        |                   |             |                              | Pre-treatr<br>Particle        | nent 2.65                            |         |
| BOULDERS                    | 0                           |                  | 150 µm           | 25                  |                        |                   |             |                              | Density                       | (Assum                               | 1ed)    |
|                             |                             |                  |                  |                     |                        |                   |             |                              |                               |                                      |         |
| marka 🛄 😋                   | ave:-Tast sorts             | rmod in co       | cordance         |                     | 202-1-2016             |                   |             |                              |                               |                                      | 27/01/2 |
| Pi                          | pette:-Test per             | formed in a      | ccordance        | with BS EN ISO 17   | 7892-4:2016            |                   |             |                              |                               |                                      |         |
| $ \frac{Sample Description}{CHALK, recovered as sandy very silvy gravel with a low coable content. } \\ \frac{100}{90}   | Project:<br>Project No | A30<br><b>):</b> PC | 03 AMESE<br>197708      | BURY <sup>-</sup> | TO BE    | ERWIC            | K D(     | AWC   | N - PH/            | ASE 7          | A CO              | NUC     | ITES        | S             |                |    |   |      | H<br>Si<br>Si<br>Si | ole<br>amp<br>amp<br>amp | le D<br>le T<br>le F | ept<br>ype<br>lef | B⊢<br>6.9<br>9 B<br>C3 | 172501<br>10-7.90<br>0526 | )m       |      |       |
|--|------------------------|---------------------|-------------------------|-------------------|----------|------------------|----------|-------|--------------------|----------------|-------------------|---------|-------------|---------------|----------------|----|---|------|---------------------|--------------------------|----------------------|-------------------|------------------------|---------------------------|----------|------|-------|
| $\begin{array}{c} 10\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0$  | Sample<br>CHALK,       | Desc<br>recove      | eription<br>ered as sar | ıdy ver           | ry silty | gravel           | with     | a low | v cobbl            | le cont        | ent               |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $  | 100                    |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      | M                 |                        |                           |          |      | Ш     |
| $ \frac{1}{2^{2}} \int_{1}^{2^{2}} \frac{1}{2^{2}} \int_{$  | 90                     |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| $ \frac{1}{9} \int_{2}^{9} \int_{2}$   | 80                     |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| θe         θe         He  | 70                     |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| $ \frac{1}{9} \frac{5}{9} \frac{1}{9} 1$ | 60                     |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | % Fine<br>20           |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | 40                     |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               | $\downarrow$   |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | 30                     |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             | 4             |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | 20                     |                     |                         |                   |          |                  |          | •     |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | 10                     |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| utunutunutunutunnu<  | 0                      |                     |                         |                   |          |                  |          |       |                    |                |                   |         |             |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          |      |       |
| Image: construction         Note of the construction         Noteon of the construction         Note of t   | U.L                    | <b>J</b> UT         | Fine                    | U.U               | dium     | Coar             | 'se      | 0     | <b>I.1</b><br>Fine | Mex            | <b>Pa</b><br>dium | article | 1<br>e Size | (mm)          | Fi             | ne |   | Mec  | )<br>lium           | Coa                      | arse                 |                   | Dobbles                | Ē                         | Boulder  | 5    |       |
| Classification         % of each         Size         % Finer         Size         % Finer           CLAY         6         125 mm         100         63 μm         23         66 μm         662.13           SLT         17         50 mm         97         6         125 mm         100         66 μm         18         662.13           SLT         17         50 mm         87         37.5 mm         78         20 μm         6         μm         18           SAND         13         14 mm         56         10 mm         54         6         μm         6         Wethod         Pipette           GRAVEL         61         5 mm         49         2 mm         36         1.18 mm         31         Wethod         Pipette           SOULDERS         3         150 μm         24         150 μm         24         150 μm         24         150 μm         26         150 μm         150 μm         24         150         150 μm         24         150         150 μm         24         150         150 μm         26         150         150 μm         26         150         150 μm         24         150         150         150         150 <t< td=""><td></td><td>CLAY</td><td></td><td>S</td><td>SILT</td><td></td><td></td><td></td><td></td><td>SA</td><td>ND</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Gra</td><td>avel</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>  |                        | CLAY                |                         | S                 | SILT     |                  |          |       |                    | SA             | ND                |         |             |               |                |    |   | Gra  | avel                |                          |                      |                   |                        |                           |          |      |       |
| CLAY         6         125 mm         100         63 μm         23         6862.13           SILT         10         75 mm         100         6 μm         18         Sieving Method           SILT         17         50 mm         87         2 μm         6         Wet sieve           SAND         13         20 mm         60         4         18         Sieving Method           GRAVEL         61         13         14 mm         56         4         4         4           GRAVEL         61         5 mm         49         4         4         4         4           Some         3         1.18 mm         31         600 μm         28         4         6         4           BOULDERS         0         150 μm         24         4         4         4         4         5  | Classifica             | tion                | % of ea                 | ch                | F        | Siz              | ze       |       | % F                | iner           |                   |         |             | Size          | e              |    | % | 6 Fi | ner                 |                          |                      | Unif              | ormity                 | Coef                      | ficien   | t    |       |
| SILT         17         16 mm         10 mm         10 mm         10 mm         10 mm         Sieving Method           SAND         13         13         14 mm         56         2 μm         6         Wet sieve           GRAVEL         61         63 mm         97         10 mm         6         Wet sieve           GRAVEL         61         63 mm         51         10 mm         54         10 mm         64         Piette           COBBLES         3         1.18 mm         31         600 μm         28         300 μm         26         900         Particle         2.65           BOULDERS         0         150 μm         24         100 mm         24         100 mm         24         200   | CLAY                   |                     |                         | 6                 |          | 125<br>100<br>75 | mm<br>mm |       | 1<br>1<br>1        | 100            |                   |         |             | 63<br>20<br>6 | μm<br>μm<br>um |    |   | 2    | 3<br>2<br>R         |                          |                      |                   | 68                     | 862.13                    |          |      |       |
| SAND         13         37.5 mm         78         Fine Particle         Analysis           SAND         13         14 mm         56         Method         Pipette           GRAVEL         61         63 mm         51         Method         Pipette           5 mm         49         2 mm         36         % loss on Pre-treated         % loss on Pre-treatment  | SILT                   |                     | 1                       | 7                 |          | 63<br>50         | mm<br>mm |       |                    | 97<br>87       |                   |         |             | 2             | μm             |    |   | 6    | i                   |                          |                      |                   | Sievin<br>We           | g Meth<br>et sieve        | nod<br>e |      |       |
| GRAVEL     61     14 mm     36     Method     Pre-treated       10 mm     54     6.3 mm     51     Pre-treated     Pre-treated       2 mm     36     2 mm     36     % loss on     0.00       COBBLES     3     1.18 mm     31     Pre-treatment     Pre-treatment       BOULDERS     0     150 μm     24     Particle     2.65       BOULDERS     0     150 μm     24     Particle     2.65   | SAND                   |                     | 1:                      | 3                 |          | 37.5<br>20       | mm<br>mm |       |                    | 78<br>60<br>56 |                   |         |             |               |                |    |   |      |                     |                          |                      | Fine              | e Parti                | cle An                    | alysi    | S    |       |
| COBBLES         3         5 mm         49         with         Peroxide           2 mm         36         1.18 mm         31         % loss on         0.00           BOULDERS         0         150 μm         24         Particle         2.65           Density         150 μm         24         Particle         2.65   | GBAVEL                 |                     | 6                       | 1                 |          | 14<br>10<br>6.3  | mm       |       | :                  | 54<br>51       |                   |         |             |               |                |    |   |      |                     |                          | Pr                   | etnoc             | ated                   | Hydr                      | ogen     |      |       |
| COBBLES         S         1.10 mm         S1         Pre-treatment         Pre-treatment           BOULDERS         0         Δ0   |                        | 2                   |                         |                   |          | 5<br>2           | mm<br>mm |       |                    | 49<br>36<br>31 |                   |         |             |               |                |    |   |      |                     |                          | wi<br>%              | h<br>loss         | on                     | Pero:                     | xide     |      |       |
| Density (Assumed)  |                        | J<br>B6             |                         |                   |          | 600<br>300       | μm<br>μm |       |                    | 28<br>26       |                   |         |             |               |                |    |   |      |                     |                          | Pr<br>Pa             | e-tre<br>article  | atment<br>e            | 2.65                      |          |      | _     |
| 27/01/<br>27/01/   |                        | no                  |                         |                   | L        | 150              | μm       |       | :                  | 24             |                   |         |             |               |                |    |   |      |                     |                          | De                   | ensity            | /                      | (Ass                      | umed     | )    |       |
| Aremarks The Steve: - Lest performed in accordance with BS EN ISO 17892-4:2016   | Remarks                | <b>r</b> s Sie      | ve:-Test pe             | erform            | ed in a  | accorda          | ance     | with  | BS EN              | I ISO          | 1789              | 2-4:    | 2016        |               |                |    |   |      |                     |                          |                      |                   |                        |                           |          | 27/0 | 1/202 |

| Project:<br>Project No | A3<br>): PC   | 03 AN<br>1977 | ЛЕS<br>08        | SBU            | JR              | Y TO I   | BEF    | RWI            | СК                | DC       | 1W(   | N - Pł          | HAS                | SE 7        | A C  | COL              | JΝ.      | TE                   | SS                 |                |             |   |   |               |            | Hole<br>San<br>San<br>San | e<br>npl<br>npl<br>npl | e D<br>e T<br>e R | )ep<br>jyp<br>lef | oth<br>e     | BH7<br>1.20<br>B<br>C30 | 7250<br>)-1.7<br>)805 | 2<br>'0m      |                  |         |
|------------------------|---------------|---------------|------------------|----------------|-----------------|----------|--------|----------------|-------------------|----------|-------|-----------------|--------------------|-------------|------|------------------|----------|----------------------|--------------------|----------------|-------------|---|---|---------------|------------|---------------------------|------------------------|-------------------|-------------------|--------------|-------------------------|-----------------------|---------------|------------------|---------|
| Sample<br>PROBA        | Desc<br>BLE M | ADE           | <b>ior</b><br>GR | <b>1</b><br>OU | NE              | D: Whi   | ite, I | loca           | lly li            | ght      | bro   | wn, s           | ligh               | ntly s      | sano | dy s             | slig     | htly                 | grav               | /elly          | silt        |   |   |               |            |                           |                        |                   |                   |              |                         |                       |               |                  |         |
| 100                    |               |               | Т                |                |                 |          |        |                |                   |          |       |                 | Т                  |             | Τ    | Π                |          |                      |                    |                | Γ           |   |   |               |            |                           |                        | T                 | TT                |              | •                       |                       |               |                  |         |
| 90                     |               |               | +                |                |                 |          | +      | +              |                   |          |       |                 | +                  | +           | +    | $\left  \right $ |          |                      |                    |                |             |   |   |               |            | $\neq$                    | 1                      |                   |                   |              |                         |                       |               | $\left  \right $ |         |
| 80                     |               |               | +                |                |                 |          | +      | +              |                   |          |       |                 | +                  |             |      | +                |          |                      |                    |                |             |   |   |               |            |                           | +                      |                   |                   |              |                         |                       |               | $\left  \right $ |         |
| 70                     |               |               |                  |                |                 |          | _      | _              |                   |          |       |                 |                    |             |      |                  |          |                      |                    |                |             |   |   |               |            |                           | -                      |                   |                   |              |                         |                       |               |                  |         |
| 60                     |               |               | +                |                |                 |          | +      | +              |                   |          |       |                 | 4                  | -           | 1    |                  |          |                      |                    |                |             |   |   |               |            |                           | +                      | $\left  \right $  |                   |              |                         |                       |               | $\left  \right $ |         |
| % Fine<br>%            |               |               |                  |                |                 |          | +      | 4              |                   |          |       |                 |                    |             |      |                  |          |                      |                    |                |             |   |   |               |            |                           | -                      |                   |                   |              |                         |                       |               |                  |         |
| 40                     |               |               |                  |                | $\left \right $ |          | _      | _              |                   |          |       |                 |                    |             |      |                  |          |                      |                    |                |             |   |   |               |            |                           | +                      |                   |                   |              |                         |                       |               |                  |         |
| 30                     |               |               |                  |                |                 |          | _      | _              |                   |          |       |                 |                    |             |      |                  |          |                      |                    |                |             |   |   |               |            |                           | +                      |                   |                   |              |                         |                       |               |                  |         |
| 20                     |               | Å             |                  |                |                 |          | _      | _              |                   |          |       |                 |                    |             |      |                  |          |                      |                    |                |             |   |   |               |            |                           |                        |                   |                   |              |                         |                       |               |                  |         |
| 10                     |               |               | +                |                |                 |          | +      | +              |                   |          |       |                 | +                  | +           |      | $\left  \right $ |          |                      |                    |                |             |   |   |               |            |                           | +                      | $\left  \right $  |                   |              |                         |                       |               | ╟                |         |
| 0<br>0.0               | 01            |               |                  |                | <br>            | <br>D.01 |        |                |                   |          | <br>0 | <u> </u><br>1.1 |                    |             |      |                  |          | 1                    |                    |                |             |   |   | 1             | 0          |                           |                        |                   |                   | 100          | )                       |                       |               |                  | <br>100 |
| Classification         |               | Fi            | ne               |                | M               | Vedium   |        | Co             | arse              |          |       | Fine            |                    | Me          | dum  | <b>Part</b><br>า | ide<br>( | e <b>Siz</b><br>Coar | <b>e (mn</b><br>se | n)             | Fine        | ) |   | Me            | dium       |                           | Coar                   | se                |                   | Cobl         | oles                    |                       | Bould         | lers             |         |
|                        | ш.,           |               |                  |                |                 |          |        |                |                   |          | _     |                 |                    | SA          |      |                  | r        |                      |                    |                |             | _ |   | G             | ravel      |                           |                        |                   |                   |              |                         |                       |               |                  |         |
| Classifica             | tion          | %             | ofe              | eacl           | h               |          | -      | <b>S</b><br>12 | <b>ize</b><br>5 n | nm       |       | %               | 5 <b>Fir</b><br>10 | ner<br>0    |      | -                |          |                      | <b>Si</b><br>63    | <b>ze</b><br>μ | m           |   | 9 | <b>F</b><br>ځ | iner<br>57 | _                         |                        | _                 | Un                | ifor         | <b>mity</b><br>Not A    | <b>Coe</b>            | fficio<br>ble | ent              |         |
| CLAY                   |               |               |                  | 16             |                 |          |        | 10<br>7        | 0 n<br>5 n<br>3 n | nm<br>nm |       |                 | 10<br>10           | 0<br>0      |      |                  |          |                      | 20<br>6            | μ              | m<br>m<br>m |   |   | 5             | 50<br>37   |                           |                        |                   |                   | Sie          | eving                   | Met                   | hod           |                  |         |
| SILT                   |               |               |                  | 41             |                 |          |        | 5<br>37.       | 0 n<br>5 n        | nm<br>nm |       |                 | 10<br>98           | 0           |      |                  |          |                      | L                  | . μ            |             |   |   |               | 0          |                           |                        |                   | <b></b>           |              | We                      | t siev                | /e            |                  |         |
| SAND                   |               |               |                  | 14             |                 |          |        | 20<br>14<br>10 | 0 n<br>4 n<br>0 n | nm<br>nm |       |                 | 88<br>85<br>82     | 3           |      |                  |          |                      |                    |                |             |   |   |               |            |                           |                        | Me                | etho              | d d          | artic                   | Pipe                  | ette          | 515              |         |
| GRAVEL                 |               |               |                  | 29             |                 |          |        | 6.             | 3 n<br>5 n        | nm<br>nm |       |                 | 78<br>76           | -<br>3<br>6 |      |                  |          |                      |                    |                |             |   |   |               |            |                           |                        | Pr<br>wi          | e-tr<br>th        | eate         | d                       | Hyd<br>Pero           | roge<br>oxide | en<br>e          |         |
| COBBLE                 | 6             |               |                  | 0              |                 |          |        | 1.1            | 2 n<br>8 n<br>0   | nm<br>nm |       |                 | 71<br>69           | )           |      |                  |          |                      |                    |                |             |   |   |               |            |                           |                        | %<br>Pr           | los:<br>e-tr      | s on<br>eatn | nent                    | 0.00                  | )             |                  |         |
| BOULDE                 | RS            |               |                  | 0              |                 |          |        | 30<br>15       | ομ<br>Ομ          | i m      |       |                 | 63<br>61           | 3           |      |                  |          |                      |                    |                |             |   |   |               |            |                           |                        | Pa<br>De          | artic<br>ensi     | le<br>ty     |                         | 2.65<br>(Ass          | 5<br>sum      | ed)              |         |
|                        |               |               |                  |                |                 |          |        |                |                   |          |       |                 |                    |             |      |                  | -        |                      |                    |                |             |   |   |               |            |                           |                        |                   |                   |              |                         |                       |               |                  |         |
| Remarks                | Sie           | ve:-Te        | est              | per            | fori            | med ir   | 1 ac   | corc           | lanc              | ce v     | vith  | BS E            | N I                | SO          | 178  | 392-             | 4:2      | 201                  | 6                  |                |             |   |   |               |            |                           |                        |                   |                   |              |                         |                       |               | 27               | //01/20 |
| - 1                    | Pip           | ette:-        | Tes              | st pe          | erfo            | ormed    | in a   | icco           | rdai              | nce      | wit   | h BS            | EN                 | ISC         | ) 17 | 789              | 2-4      | 1:20                 | 16                 |                |             |   |   |               |            |                           | C                      | <b>`</b>          | Y                 | ກ            | G                       | CH                    | -1            | JI               |         |

# LABORATORY RESULTS - Particle Size Distribution

| roject:<br>roject N | Аз(<br><b>о:</b> РС | 03 AME<br>197708    | SBL                | JR           | Υ TO E           | BERW           | 'ICł           | K DC           | )<br>WI       | N - P         | HAS            | SE 7        | A C         | OU          | INT          | ESS          |            |          |     |   |       | <br>!<br>!      | Ho<br>Sai<br>Sai<br>Sai | le<br>mp<br>mp<br>mp | le C<br>le 1<br>le F | Dej<br>Typ<br>Ref | pth<br>oe<br>f | BH<br>3.2<br>B<br>C3 | 72502<br>0-3.70<br>0799 | 2<br>0m        |           |     |
|---------------------|---------------------|---------------------|--------------------|--------------|------------------|----------------|----------------|----------------|---------------|---------------|----------------|-------------|-------------|-------------|--------------|--------------|------------|----------|-----|---|-------|-----------------|-------------------------|----------------------|----------------------|-------------------|----------------|----------------------|-------------------------|----------------|-----------|-----|
| Sample<br>Greyish   | brown               | riptio<br>slightly  | o <b>n</b><br>sand | ly g         | ravelly          | CLA            | Yw             | ith a          | low           | v cobl        | ole c          | conte       | ent.        |             |              |              |            |          |     |   |       |                 |                         |                      |                      |                   |                |                      |                         |                |           |     |
| 100                 |                     |                     |                    |              |                  |                |                |                |               |               |                |             |             |             |              |              | Т          |          |     |   | Π     |                 | Т                       |                      |                      | И                 | 1              | -                    |                         |                |           |     |
| 90                  |                     |                     |                    |              |                  |                |                |                |               |               |                |             | +           |             |              |              | +          | _        |     |   |       |                 |                         | /                    | $\downarrow$         | $\frac{1}{1}$     |                |                      |                         |                |           |     |
| 80                  |                     |                     |                    |              |                  |                |                |                |               |               |                |             | _           |             |              |              | _          | _        |     |   |       |                 |                         | 4                    |                      |                   |                |                      |                         | _              |           |     |
| 70                  |                     |                     |                    |              |                  |                |                |                |               |               |                |             | _           |             |              |              |            | _        |     |   |       | /               | 4                       |                      |                      |                   |                |                      |                         | _              |           |     |
| 60                  |                     |                     |                    |              |                  |                |                |                |               |               |                |             | _           |             |              |              |            | _        |     |   | X     |                 |                         |                      |                      |                   |                |                      |                         |                |           |     |
| Eine                |                     |                     |                    |              |                  |                |                |                |               |               |                |             |             |             |              |              |            | 4        | 1   | 1 |       |                 |                         |                      |                      |                   |                |                      |                         |                |           |     |
| ×<br>40             |                     |                     |                    |              |                  |                |                |                |               |               |                |             |             |             | /            |              |            |          |     |   |       |                 |                         |                      |                      |                   |                |                      |                         |                |           |     |
| 30                  |                     |                     |                    |              |                  |                |                |                |               |               |                |             |             |             |              |              |            |          |     |   |       |                 |                         |                      |                      |                   |                |                      |                         |                |           |     |
| 20                  |                     |                     |                    |              |                  |                |                |                |               |               |                |             |             |             |              |              |            |          |     |   |       |                 |                         |                      |                      |                   |                |                      |                         |                |           |     |
| -0                  |                     |                     |                    |              |                  |                |                |                |               |               |                |             |             |             |              |              |            |          |     |   |       |                 |                         |                      |                      |                   |                |                      |                         |                |           |     |
| .0                  |                     |                     |                    |              |                  |                |                |                |               |               |                |             |             |             |              |              |            |          |     |   |       |                 |                         |                      |                      |                   |                |                      |                         |                |           |     |
| 0.                  | 001                 |                     |                    | 0            | .01              |                |                |                | (             | 0.1           |                |             | F           | Partic      | de \$        | 1<br>Size (r | nm)        |          |     |   | 1     | 10              |                         |                      |                      |                   | 10             | 00                   |                         |                |           | 10  |
| Dassification       | (LAY                | Fine                | !                  | Ν            | /edium<br>SILT   | C              | bars           | e              |               | Fine          |                | Mer<br>SA   | dium<br>ND  |             | 0            | oarse        |            | F        | ine |   | M     | edium<br>Fravel |                         | Coa                  | arse                 |                   | Co             | bbles                |                         | Bould          | ers       |     |
| Classifie           | ation               | 9/ of               |                    | <b>h</b>     | [                |                | 0:-            |                |               | 0             |                |             |             |             | Г            |              | <u> </u>   |          |     |   | o/. I | linor           |                         | 1                    |                      |                   |                |                      | Cool                    | field          |           |     |
|                     | ation               | %01                 | eac                | n            |                  | 1:             | 25             | e<br>mm        |               | 7             | 100            |             |             |             | -            | (            | 5120<br>53 | μm<br>μm |     |   | /01   | 21              |                         |                      |                      | Ur                | 1110           | 28                   | 38.41                   | licie          | ent       |     |
| 02/11               |                     |                     | 5                  |              |                  |                | 75<br>63       | mm<br>mm       |               |               | 10(<br>96      | 0           |             |             |              | •            | 6<br>2     | μm<br>μm |     |   |       | 15<br>9         |                         |                      |                      |                   | Si             | ieving               | g Met                   | hod            |           |     |
| SILT                |                     |                     | 12                 |              |                  | 37             | 50<br>'.5      | mm<br>mm       |               |               | 93<br>89       | }           |             |             |              |              |            |          |     |   |       |                 |                         |                      |                      | Fi                | ine            | We<br>Partic         | et siev                 | e<br>nalvs     | sis       |     |
| SAND                |                     |                     | 29                 |              |                  |                | 20<br>14<br>10 | mm<br>mm       |               |               | 72<br>72       | 2           |             |             |              |              |            |          |     |   |       |                 |                         |                      | м                    | eth               | od             |                      | Pipe                    | tte            |           |     |
| GRAVEL              | -                   |                     | 46                 |              |                  | 6              | 5.3<br>5       | mm<br>mm       |               |               | 59<br>56       | )<br>)<br>; |             |             |              |              |            |          |     |   |       |                 |                         |                      | Pi<br>wi             | re-t<br>ith       | reat           | ted                  | Hydi<br>Perc            | rogei<br>oxide | n         |     |
| COBBLE              | S                   |                     | 4                  |              |                  | 1.             | 2<br>18        | mm<br>mm       |               |               | 50<br>47       | )<br>7      |             |             |              |              |            |          |     |   |       |                 |                         |                      | %<br>Pi              | los<br>re-t       | ss o<br>reat   | on<br>tment          | 0.00                    |                |           |     |
| BOULDE              | RS                  |                     | 0                  |              |                  | 6)<br>3)<br>1) | 00<br>00<br>50 | μm<br>μm<br>μm |               |               | 43<br>36<br>27 | )<br>)<br>7 |             |             |              |              |            |          |     |   |       |                 |                         |                      | P:<br>D              | artio<br>ens      | cle<br>sity    |                      | 2.65<br>(Ass            | ume            | ed)       |     |
|                     |                     |                     |                    | ]            | I                |                |                |                | 1             |               |                |             | ]           |             | Ĺ            |              |            |          | Į   |   |       |                 |                         |                      |                      |                   |                |                      | !                       |                |           |     |
| Remarks             | AGS Sie<br>Pip      | ve:-Tes<br>ette:-Te | t peri<br>est pe   | forr<br>erfo | ned in<br>rmed i | accoi<br>n acc | rdar<br>orda   | nce<br>ance    | with<br>e wit | BS E<br>th BS | EN IS<br>EN    | SO<br>ISC   | 178<br>0 17 | 92-4<br>892 | 4:20<br>2-4: | 016<br>2016  |            |          |     |   |       |                 |                         | 0                    | SC                   | X                 | רכ             | D                    | Cŀ                      | -1\            | 27)<br>JC | /01 |

| roject:<br>roject | No:            | A30<br>PC1    | 3 AM<br>19770         | ESE<br>)8 | BUF  | RY T       | ΟВ        | ERV  | VIC          | KC       | 00          | WN  | I - PH | IAS      | Έ7.       | A C         | OU     | INT | TESS        | 3   |    |      |       |            |              | Hol<br>San<br>San<br>San | e<br>npl<br>npl<br>npl | e C<br>e T<br>e F | Dep<br>Typ<br>Ref | oth<br>be | B<br>4<br>B<br>C | H72<br>.30-4<br>3080 | 502<br>1.80r<br>03 | n      |      |             |
|-------------------|----------------|---------------|-----------------------|-----------|------|------------|-----------|------|--------------|----------|-------------|-----|--------|----------|-----------|-------------|--------|-----|-------------|-----|----|------|-------|------------|--------------|--------------------------|------------------------|-------------------|-------------------|-----------|------------------|----------------------|--------------------|--------|------|-------------|
| Samp<br>Greyi     | le D<br>sh bro | esci<br>own s | r <b>ipti</b><br>andy | on<br>GR/ | AVI  | EL.        |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            |              |                          |                        |                   |                   |           |                  |                      |                    |        |      |             |
| 10                | 00 00          |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     | 1           |     |    |      |       |            |              |                          |                        |                   | 11                |           |                  |                      |                    |        |      | —<br>Ш      |
| g                 | 0              |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            |              |                          |                        | И                 |                   |           |                  |                      |                    |        |      |             |
| 8                 | n _            |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            |              |                          | ĺ                      |                   |                   |           |                  |                      |                    |        |      |             |
| -                 | ~              |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            |              |                          | Å                      |                   |                   |           |                  |                      |                    |        |      |             |
| 1                 | 0              |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            |              | 7                        |                        |                   |                   |           |                  |                      |                    |        |      | Ī           |
| 6<br>¥            | i0             |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            | /            | /                        |                        |                   |                   |           |                  |                      |                    |        |      | Ħ           |
| % Fir<br>6        | io             |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            | +            | +                        |                        |                   |                   |           |                  | +                    |                    |        |      | ╫           |
| 4                 | ю —            |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       | H          |              |                          |                        |                   |                   |           |                  |                      |                    |        |      | ╂           |
| 3                 | 10 –           |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      | <br>4 |            |              |                          |                        |                   |                   |           |                  |                      |                    |        |      | $\parallel$ |
| 2                 | 20 -           |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     | /  | K    |       |            |              |                          |                        |                   |                   |           |                  |                      |                    |        |      | $\parallel$ |
| 1                 | 0              |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            |              |                          |                        |                   |                   |           |                  |                      |                    |        |      | ╟           |
|                   | <u>o</u>       |               |                       |           |      |            |           |      |              |          | •           |     |        | -        | -         |             | 1      |     |             |     |    |      |       |            |              |                          |                        |                   |                   |           |                  |                      |                    |        |      |             |
|                   | 0.001          |               |                       |           |      | 0.0        | 1         |      |              |          |             | 0.  | 1      |          |           | F           | Partic | de  | 1<br>Size ( | mm) | )  |      |       | 1(         | )            |                          |                        |                   |                   | 10        | 00               |                      |                    |        |      | 10          |
| Jassificati       | ion<br>a       |               | Fin                   | e         |      | Med<br>SIL | ium<br>_T |      | Coar         | se       |             | F   | īne    |          | Mec<br>SA | dium<br>IND |        | 0   | barse       | _   |    | Fine |       | Me<br>G    | dium<br>avel |                          | Coa                    | rse               | _                 | G         | obbles           |                      | Bo                 | bulder | s    |             |
|                   |                |               |                       |           |      |            | Γ         |      |              |          |             |     |        |          |           |             |        | Г   |             |     |    |      |       | / <b>F</b> |              |                          |                        |                   |                   |           |                  |                      |                    |        |      |             |
| Classif           | icatio         | on            | % C                   | or ea     | cn   |            | F         | 1    | 125          | ze<br>mi | m           |     | %      | 100      | )         |             |        |     |             | 63  | μr | n    | 7     | о <b>г</b> | ner<br>1     |                          |                        |                   | Ur                | 1110      | ormi             | 20.2                 | 21                 | cien   | τ    |             |
| SILT (i           | nclud          | ing           |                       |           |      |            |           |      | 75           | mi<br>mi | m<br>m<br>m |     |        | 100      | )         |             |        |     |             |     |    |      |       |            |              |                          |                        |                   |                   | S         | ievi             | ng M                 | leth               | bd     |      |             |
| CLAY)             |                |               |                       |           | 1    |            |           | 3    | 50<br>7.5    | mi       | m<br>m      |     |        | 98<br>86 | ,         |             |        |     |             |     |    |      |       |            |              |                          |                        | -                 |                   |           | ۷                | l∕et s               | ieve               |        |      |             |
| SAND              |                |               |                       | 1         | 5    |            |           |      | 20<br>14     | mi<br>mi | m<br>m      |     |        | 64<br>52 |           |             |        |     |             |     |    |      |       |            |              |                          |                        | м                 | Fi<br>eth         | ne<br>od  | Par              | ticle                | Ana                | lysi   | s    |             |
| GRAVI             | EL             |               |                       | 84        | 4    |            |           |      | 10<br>6.3    | mi<br>mi | m<br>m      |     |        | 44<br>31 |           |             |        |     |             |     |    |      |       |            |              |                          |                        | Pr                | 'e-ti             | reat      | ted              |                      |                    |        |      |             |
|                   |                |               |                       |           | n    | 1          |           | 4    | 5<br>2<br>10 | mi<br>mi | m<br>m<br>m |     |        | 27<br>16 |           |             |        |     |             |     |    |      |       |            |              |                          |                        | %                 | los               | s o       | n                | +                    |                    |        |      |             |
|                   |                |               |                       |           | -    | +          |           | 6    | 500<br>300   | μı<br>μι | m<br>m      |     |        | 8<br>5   |           |             |        |     |             |     |    |      |       |            |              |                          |                        | Pr<br>Pa          | re-ti<br>artic    | reat      | tmer             | nt                   |                    |        |      |             |
| BOUL              | JERS           | >             |                       | (         | 0    |            |           | 1    | 150          | μι       | m           |     |        | 2        |           |             |        | L   |             |     |    |      |       |            |              |                          |                        | De                | ens               | ity       |                  |                      |                    |        |      |             |
|                   |                |               |                       |           |      |            |           |      |              |          |             |     |        |          |           |             |        |     |             |     |    |      |       |            |              |                          |                        |                   |                   |           |                  |                      |                    |        |      |             |
| marks             | AGS            | Siev          | e:-Te                 | st pe     | erfo | orme       | ed in     | acco | orda         | ance     | e w         | ith | BS E   | N IS     | 50 ·      | 178         | 92-4   | 4:2 | 016         |     |    |      |       |            |              |                          |                        |                   |                   |           |                  |                      |                    |        | 27/0 | )1/2        |

| roject:<br>roject No | A30<br>: PC    | 3 AME                   | ESBL<br>8        | JR | Ү ТО В         | ERW                   | ICK                | ( DO           | WN   | N - PH  | IASE              | 57A          | CO      | JN. | TES       | SS       |          |        |             |                  | Hole<br>Sam<br>Sam<br>Sam | ple<br>ple<br>ple | De<br>Ty<br>Re | ept<br>/pe<br>ef | BH<br>1.5<br>B<br>C30 | 72504<br>0-1.60<br>0164 | 4<br>0m         |          |    |
|----------------------|----------------|-------------------------|------------------|----|----------------|-----------------------|--------------------|----------------|------|---------|-------------------|--------------|---------|-----|-----------|----------|----------|--------|-------------|------------------|---------------------------|-------------------|----------------|------------------|-----------------------|-------------------------|-----------------|----------|----|
| Sample<br>PROBAE     | Desc<br>BLE MA | r <b>iptic</b><br>ADE G | <b>on</b><br>Rou | JN | D: Whit        | e sligi               | htly               | sand           | dy s | lightly | grav              | /elly        | silt.   |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| 100                  |                |                         |                  | Π  |                |                       |                    |                | Π    |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   | T              | ТП               | <b> </b>              |                         |                 |          |    |
| 90 -                 |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| 80 -                 |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        | $\parallel$ |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| 70                   |                |                         |                  |    |                |                       |                    |                |      |         | _                 |              |         |     |           |          |          | 4      |             |                  |                           |                   |                |                  |                       |                         | _               |          |    |
| 60 -                 |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     | -         |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| Eine                 |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| °<br>40 -            |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| 30 -                 |                |                         | И                | 1  |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| 20 -                 |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| 10 -                 |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| 0                    |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
| 0.0                  | 01             |                         |                  |    | 0.01           |                       |                    |                | 0    | ).1     |                   |              | Pari    | ide | 1<br>Size | e (mn    | 1)       |        | <br>-       | 10               |                           |                   |                | 1                | 100                   |                         |                 |          | 10 |
| Dassification        | αay            | Fine                    | 9                |    | Medium<br>SILT | C                     | barse              | e              |      | Fine    |                   | Mediu<br>SAN | im<br>D | (   | Coars     | se       |          | Fine   | N<br>C      | ledium<br>Gravel | (                         | Doarse            | e              | C                | obbles                |                         | Boulde          | ers      |    |
| Classificat          | tion           | % of                    | f eac            | h  | ] [            |                       | Size               | •              |      | %       | Fine              | er           |         | [   |           | Si       | ze       |        | % F         | iner             |                           | Γ                 | ι              | Jnif             | ormity                | Coef                    | ficie           | nt       |    |
| CLAY                 |                |                         | 13               |    |                | 12<br>1(              | 25 I<br>00 I       | mm<br>mm       |      |         | 100<br>100        |              |         | Ī   |           | 63<br>20 | μm<br>μm | ו<br>ו |             | 50<br>48         |                           |                   |                |                  | Not A                 | Availa                  | ble             |          |    |
| SILT                 |                |                         | 37               |    |                | (                     | 75  <br>63  <br>50 | mm<br>mm<br>mm |      |         | 100<br>100<br>100 |              |         |     |           | 6<br>2   | μm<br>μm | ו<br>ו |             | 37<br>13         |                           | +                 |                | 5                | Sieving<br>We         | <b>y Met</b><br>et siev | <b>hod</b><br>e |          |    |
|                      |                |                         | 17               |    |                | 37<br>2               | 20 i               | mm<br>mm       |      |         | 95<br>89          |              |         |     |           |          |          |        |             |                  |                           |                   | F              | ine              | e Partic              | le Ar                   | nalys           | sis      |    |
| SAND                 |                |                         | 17               |    |                |                       | 14  <br>10         | mm<br>mm       |      |         | 87<br>84<br>70    |              |         |     |           |          |          |        |             |                  |                           | +                 | Met            | hod              | ated                  | Pipe<br>Hydi            | tte<br>roger    | <u>า</u> |    |
| GRAVEL               |                |                         | 33               |    |                | ŭ                     | 5  <br>2           | mm<br>mm       |      |         | 79<br>77<br>67    |              |         |     |           |          |          |        |             |                  |                           | +                 | with           |                  | 00                    | Perc                    | xide            |          |    |
| COBBLES              | 6              |                         | 0                |    | -              | 1. <sup>-</sup><br>60 | 18<br>00           | mm<br>μ m      |      |         | 63<br>59          |              |         |     |           |          |          |        |             |                  |                           | -                 | Pre            | -trea            | atment                | 0.00                    |                 |          |    |
| BOULDEF              | RS             |                         | 0                |    |                | 30                    | 50                 | μm<br>μm       |      |         | 56<br>53          |              |         |     |           |          |          |        |             |                  |                           |                   | Par<br>Der     | nsity            |                       | (Ass                    | ume             | d)       |    |
|                      |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |
|                      |                |                         |                  |    |                |                       |                    |                |      |         |                   |              |         |     |           |          |          |        |             |                  |                           |                   |                |                  |                       |                         |                 |          |    |

| Project:<br>Project No | A30<br><b>D:</b> PC     | 03 AMESB<br>197708           | URY TO B       | ERWICK DC                  | )WN - PH/  | ASE 7A C       | OUNTI           | ESS     |      |   |                  | Hole<br>Samp<br>Samp<br>Samp | le D<br>le T<br>le R | epth<br>ype<br>ef  | BH72504<br>3.10-3.60<br>B<br>C30409 | m       |         |
|------------------------|-------------------------|------------------------------|----------------|----------------------------|------------|----------------|-----------------|---------|------|---|------------------|------------------------------|----------------------|--------------------|-------------------------------------|---------|---------|
| Sample<br>Light gre    | <b>Desc</b><br>eenish g | <b>ription</b><br>grey sandy | slightly clay  | vey GRAVEL                 | with a low | cobble co      | ontent.         |         |      |   |                  |                              |                      |                    |                                     |         |         |
| 100                    |                         |                              |                |                            |            |                |                 |         |      |   |                  |                              |                      |                    | •                                   |         |         |
| 90                     |                         |                              |                |                            |            |                |                 |         |      |   |                  |                              | $\mathcal{A}$        |                    |                                     |         |         |
| 80                     |                         |                              |                |                            |            |                |                 |         |      |   |                  | +                            |                      |                    |                                     |         |         |
| 70                     |                         |                              |                |                            |            |                |                 |         |      |   |                  | $\downarrow \downarrow$      |                      |                    |                                     |         |         |
| 60                     |                         |                              |                |                            |            |                |                 |         |      |   |                  |                              |                      |                    |                                     |         |         |
| <u>اتر</u><br>50       |                         |                              |                |                            |            |                |                 |         |      |   |                  |                              |                      |                    |                                     |         |         |
| ×<br>40                |                         |                              |                |                            |            |                |                 |         |      |   |                  |                              |                      |                    |                                     |         |         |
| 30                     |                         |                              |                |                            |            |                |                 |         |      |   |                  |                              |                      |                    |                                     |         |         |
| 20                     |                         |                              |                |                            |            |                |                 |         |      | 1 |                  |                              |                      |                    |                                     |         |         |
| 10                     |                         |                              |                |                            |            |                |                 |         |      |   |                  |                              |                      |                    |                                     |         |         |
| 0                      |                         |                              |                |                            |            |                |                 |         |      |   |                  |                              |                      |                    |                                     |         |         |
| 0.0                    | 001                     |                              | 0.01           |                            | 0.1        | F              | 1<br>Particle S | ize (mm | )    |   | 10               |                              |                      | 100                | )                                   |         | 100     |
| Classification         | CLAY                    | Fine                         | Medium<br>SILT | Coarse                     | Fine       | Medium<br>SAND | 00              | arse    | Fine |   | Medium<br>Gravel | Co;                          | arse                 | Cobk               | bles B                              | oulders |         |
| Classifica             | ition                   | % of eac                     | ch             | Size                       | % F        | iner           | Γ               | Siz     | e    |   | % Finer          |                              |                      | Unifori            | mity Coeff                          | icient  |         |
|                        |                         |                              |                | 125 mm<br>100 mm           | 1          | 00<br>00       |                 | 63      | μm   |   | 3                |                              |                      |                    | 39.02                               |         |         |
| SILT (incl             | uding                   |                              | ,              | 75 mm<br>63 mm             |            | 97<br>97       |                 |         |      |   |                  |                              |                      | Sie                | wing Meth                           | od      |         |
|                        |                         |                              | ,<br>          | 50 mm<br>37.5 mm<br>20 mm  |            | 94<br>86<br>61 |                 |         |      |   |                  |                              |                      | Fine P             | article Ana                         | alysis  |         |
| SAND                   |                         | 15                           | 5              | 14 mm<br>10 mm             |            | 51<br>41       |                 |         |      |   |                  |                              | Me                   | thod               |                                     |         |         |
| GRAVEL                 |                         | 79                           | )              | 6.3 mm<br>5 mm             |            | 31<br>27       |                 |         |      |   |                  |                              | Pre<br>wit           | e-treate           | d                                   |         |         |
| COBBLE                 | S                       | 3                            | 3              | 2 mm<br>1.18 mm<br>600 u.m |            | 18<br>15<br>11 |                 |         |      |   |                  |                              | % l<br>Pre           | oss on<br>e-treatm | nent                                |         |         |
| BOULDE                 | RS                      | C                            | )              | 300 μm<br>150 μm           |            | 6<br>4         |                 |         |      |   |                  |                              | Pa<br>De             | rticle<br>nsity    |                                     |         |         |
|                        |                         |                              |                |                            |            |                | _               |         |      |   |                  | _                            |                      |                    |                                     |         |         |
| Pomarke                | Sion                    | /e:-Test ne                  | rformed in     | accordance                 | with BS EN |                | 00 4.00         | 16      |      |   |                  |                              |                      |                    |                                     | 27      | //01/20 |

geotechnical and geoenvironmental specialists

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| roject:<br>roject N | م<br>No: P       | .303 A<br>PC197        | АМЕ<br>7708  | ESB<br>8    | BUF | ۲۲ | ТОІ           | BEF | RWI            | ICK          | (D             | 00          | /N  | - Pł | HA:          | SE               | 7A          | CC      | IU(  | NΤ       | ESS          |           |                  |      |   |   |     | <br> <br> <br> | Hol<br>San<br>San<br>San | e<br>npl<br>npl | le I<br>le 1<br>le I | De<br>Гу<br>Re | pt<br>pe<br>f | h         | BH<br>4.10<br>B<br>C30 | 725<br>0-4.<br>041( | 04<br>55n<br>) | ו     |    |             |
|---------------------|------------------|------------------------|--------------|-------------|-----|----|---------------|-----|----------------|--------------|----------------|-------------|-----|------|--------------|------------------|-------------|---------|------|----------|--------------|-----------|------------------|------|---|---|-----|----------------|--------------------------|-----------------|----------------------|----------------|---------------|-----------|------------------------|---------------------|----------------|-------|----|-------------|
| Sample<br>Light b   | e Des<br>prownis | s <b>crip</b><br>h gre | otic<br>y ve | on<br>ery s | an  | dy | GRA           | VE  | L.             |              |                |             |     |      |              |                  |             |         |      |          |              |           |                  |      |   |   |     |                |                          |                 |                      |                |               |           |                        |                     |                |       |    |             |
| 100                 | )                |                        |              |             | Π   |    |               |     | Τ              | Τ            |                |             | Π   |      |              |                  |             | Т       |      | Π        |              |           |                  |      | Т |   |     |                |                          |                 |                      | 1              | ľ.            | -         |                        |                     |                |       | Π  | Π           |
| 90                  | )                |                        |              |             |     |    |               | +   | _              | +            |                |             |     |      | _            | _                | _           | +       |      |          |              | _         |                  |      | _ |   |     |                |                          | $\downarrow$    |                      |                |               |           |                        |                     |                |       |    | +           |
| 80                  | )                |                        |              |             |     |    |               | +   |                | +            |                |             |     |      |              | _                |             | _       |      |          |              |           |                  |      | _ |   |     |                | X                        |                 |                      |                |               |           |                        |                     |                |       |    |             |
| 70                  | )                |                        |              |             |     |    |               |     |                |              |                |             |     |      |              |                  |             |         |      |          |              |           |                  |      |   |   |     | /              |                          |                 |                      |                |               |           |                        |                     |                |       |    | $\parallel$ |
| 60                  | )                |                        |              |             |     |    |               |     | +              |              |                |             |     |      |              |                  |             | +       |      |          |              |           |                  |      | + |   | X   |                |                          |                 |                      |                |               |           |                        |                     |                |       |    | ╫           |
| % Fine<br>%         | )                |                        |              |             |     |    |               |     |                |              |                |             |     |      |              |                  |             |         |      |          |              |           |                  |      |   | Д |     |                |                          |                 |                      |                |               |           |                        |                     |                |       |    | ╫           |
| 40                  | )                |                        |              |             |     |    |               |     | -              |              |                |             |     |      |              |                  |             | +       |      |          |              |           |                  |      | / |   |     |                |                          |                 |                      |                |               |           |                        |                     |                |       |    | ╫           |
| 30                  | )                |                        |              |             |     |    |               |     |                |              |                |             |     |      |              |                  |             |         |      |          | /            | 7         |                  |      |   |   |     |                |                          |                 |                      |                |               |           |                        |                     |                |       |    | ╫           |
| 20                  |                  |                        |              |             |     |    |               |     |                |              |                |             |     |      |              |                  |             |         |      | 7        | /            |           |                  |      |   |   |     |                |                          |                 |                      |                |               |           |                        |                     |                |       |    | Ħ           |
| 10                  | ) —              |                        |              |             |     |    |               |     |                |              |                | •           |     |      | /            | _                |             |         |      |          |              |           |                  |      |   |   |     |                |                          |                 |                      |                |               |           |                        |                     |                |       |    |             |
| 0                   | ).001            | •                      |              |             |     | 0. | 01            |     |                |              |                |             | 0.1 | 1    |              | 1                | 1           | Pa      | rtic | le S     | 1<br>Size (n | nm)       | )                |      |   |   | 1   | 0              |                          |                 |                      |                | 1             | 100       |                        |                     |                |       |    | 10          |
| Jassification       | n<br>QLAY        | /                      | Fine         | )           |     | Me | xdium<br>SILT |     | Co             | arse         | )              |             | Fi  | ne   |              | N                | ediu<br>SAN | im<br>D |      | 0        | arse         |           |                  | Fine | ) |   | Ma  | dium<br>ravel  |                          | Coa             | rse                  | -              | C             | bbb       | les                    |                     | Bo             | ulder | s  |             |
|                     |                  |                        |              |             |     | 7  |               | _   |                |              |                | I           |     |      |              |                  |             | 7       |      | Г        |              |           |                  |      | - |   |     |                |                          |                 |                      |                |               |           |                        | ·                   |                |       |    |             |
| Classific           | cation           | 9                      | % <b>o</b> 1 | fea         | ch  | -  |               | -   | 12             | Size         | e<br>mm        | ı           |     | %    | 10           | ner<br>0         |             | -       |      | $\vdash$ | (            | Siz<br>63 | 2 <b>e</b><br>μr | n    | + | 9 | % F | iner<br>2      |                          |                 |                      | U              | nif           | orn       | nity<br>1              | <b>Co</b><br>7.54   | effic<br>I     | cien  | It |             |
| SII T (in           | cluding          |                        |              |             |     | _  |               |     | 10<br>7        | 00  <br>75   | mn<br>mn       | ו<br>ו      |     |      | 10<br>10     | 0                |             |         |      |          |              |           |                  |      |   |   |     |                |                          |                 |                      |                | ę             | Siev      | ving                   | Me                  | etho           | d     |    |             |
| CLAY)               |                  | ,                      |              | 2           | 2   |    |               |     | 5              | 50 i         | mm             | ו<br>ו      |     |      | 98           | B                |             |         |      |          |              |           |                  |      |   |   |     |                |                          |                 |                      |                |               |           | We                     | t sie               | eve            |       |    |             |
| SAND                |                  |                        |              | 27          | 7   |    |               |     | 37.            | .5  <br>20   | mm             | ו<br>ו<br>ו |     |      | 9.<br>82     | 3                |             |         |      |          |              |           |                  |      |   |   |     |                |                          |                 |                      | F              | ine           | e Pa      | artic                  | le A                | na             | ysi   | s  |             |
| GRAVE               | L                |                        |              | 71          | 1   |    |               |     | 1<br>6.        | 4<br>0<br>.3 | mn<br>mn       | י<br>ר<br>ר |     |      | 6<br>52      | 5<br>7<br>2<br>5 |             |         |      |          |              |           |                  |      |   |   |     |                |                          |                 | P                    | re-            | trea          | atec      | d                      |                     |                |       |    |             |
| COBBL               | ES               |                        |              | (           | )   |    |               |     | 1.1            | 2            | mm             | י<br>ו<br>ו |     |      | 29           | 9<br>1           |             |         |      |          |              |           |                  |      |   |   |     |                |                          |                 | %<br>P               | lo<br>re-      | ss<br>trea    | on<br>atm | ient                   |                     |                |       |    |             |
| BOULD               | ERS              | T                      |              | (           | 5   | Ī  |               |     | 60<br>30<br>15 |              | μm<br>μm<br>μm | ו<br>ו<br>ו |     |      | 12<br>6<br>3 | 2                |             |         |      |          |              |           |                  |      |   |   |     |                |                          |                 | P<br>D               | arti<br>en:    | icle<br>sity  | )<br>/    |                        |                     |                |       |    |             |
|                     |                  |                        |              |             | _   | -  |               |     |                |              |                |             | _   |      |              |                  |             | _       |      | _        |              |           |                  |      |   |   |     |                |                          |                 |                      |                |               |           |                        |                     |                |       |    |             |

| roject:<br>roject No | A30<br>): PC <sup>-</sup> | 3 AMESE<br>197708    | BURY   | TO BEF         | RWIC             | K DC     | NWO   | 1 - PH | ASE            | 7A (           | COU    | NT   | ESS          |                    |        |       |                 | iole<br>Sam<br>Sam<br>Sam | ole<br>ole<br>ole | De<br>Tyj<br>Re | pth<br>pe<br>f | BH<br>9.80<br>B<br>C30 | 72504<br>D-10.8<br>D420 | 1<br>50m     |     |           |
|----------------------|---------------------------|----------------------|--------|----------------|------------------|----------|-------|--------|----------------|----------------|--------|------|--------------|--------------------|--------|-------|-----------------|---------------------------|-------------------|-----------------|----------------|------------------------|-------------------------|--------------|-----|-----------|
| Sample<br>CHALK,     | Desc<br>recover           | ription<br>red as sa | ndy ve | ery silty g    | ıravel.          |          |       |        |                |                |        |      |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              |     |           |
| 100                  |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 |                           | /                 | M               | •              |                        |                         |              |     | $\square$ |
| 90                   |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 |                           | /                 |                 |                |                        |                         |              |     |           |
| 80                   |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 | /                         |                   |                 |                |                        |                         |              |     |           |
| 70<br>60             |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              |     |           |
| % Fine               |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              |     |           |
| 40                   |                           |                      |        |                |                  |          |       |        |                | _              |        | /    |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              |     |           |
| 30                   |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              |     |           |
| 20                   |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              |     |           |
| 10                   |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              |     |           |
| 0.0                  | 101                       |                      | 0.     | .01            |                  |          | 0     | .1     |                |                | Partic | de S | 1<br>Size (m | n)                 |        | <br>1 | 10              |                           |                   |                 | 10             | 0                      |                         |              |     | 100       |
| Cassification        | CLAY                      | Fine                 | M      | ledium<br>SILT | Coars            | se       |       | Fine   | S N            | ledium<br>SAND | ו ו    | 0    | oarse        |                    | Fine   | M     | edium<br>Fravel | C                         | barse             |                 | 60             | bbles                  |                         | Boulde       | rs  |           |
| Classifica           | tion                      | % of ea              | ach    |                | <b>Siz</b>       | e<br>mm  |       | % I    | Finer          |                | ]      |      | <b>S</b>     | <b>ize</b><br>З цт | n      | % F   | Finer           |                           |                   | U               | nifo           | rmity                  | Coef                    | ficie        | nt  |           |
| CLAY                 |                           |                      | 9      |                | 100<br>75        | mm<br>mm |       | 1      | 100<br>100     |                |        |      | 20<br>6      | μι<br>β μι         | n<br>n | :     | 34<br>26        |                           | -                 |                 | Si             | eving                  | 42.26<br>Met            | hod          |     |           |
| SILT                 |                           | 2                    | 7      |                | 63<br>50         | mm<br>mm |       | 1      | 100<br>99      |                |        |      | 2            | 2 μı               | n      |       | 9               |                           |                   |                 |                | We                     | t siev                  | e            |     |           |
| SAND                 |                           | 1                    | 0      |                | 37.5<br>20<br>14 | mm<br>mm |       |        | 87<br>63<br>59 |                |        |      |              |                    |        |       |                 |                           |                   | Fi<br>Acth      | ine            | Partic                 | le An<br>Pipe           | alys<br>tte  | is  |           |
| GRAVEL               |                           | 5                    | 4      |                | 10<br>6.3<br>5   | mm<br>mm |       |        | 56<br>54<br>52 |                |        |      |              |                    |        |       |                 |                           | F                 | re-t            | ireat          | ed                     | Hydr                    | ogen<br>xide | 1   |           |
| COBBLES              | 6                         |                      | 0      |                | 2<br>1.18<br>600 | mm<br>mm |       |        | 46<br>44<br>41 |                |        |      |              |                    |        |       |                 |                           | ۶<br>F            | 6 los<br>Pre-t  | ss o<br>treat  | n<br>ment              | 0.00                    |              |     |           |
| BOULDE               | RS                        |                      | 0      |                | 300<br>150       | μm<br>μm |       |        | 40<br>38       |                |        |      |              |                    |        |       |                 |                           | F                 | Parti<br>Dens   | cle<br>sity    |                        | 2.65<br>(Ass            | umeo         | d)  |           |
|                      |                           |                      |        |                |                  |          |       |        |                |                |        |      |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              |     |           |
| Remarks              | - Siev                    | o:-Tost n            |        |                |                  |          | uith. |        |                |                |        |      |              |                    |        |       |                 |                           |                   |                 |                |                        |                         |              | 27/ | 01/20     |

| Project:<br>Project No | A30<br>): PC    | 3 AME  | SBU                | JR   | ΥT   | ΟE     | ER   | WI          | СК                | D              | VC          | /N | - P  | HA       | SE             | . 7/ | 4 C | OL    | JNT | TE       | SS     |          |            |     |   |   |        |        | Hc<br>Sa<br>Sa<br>Sa | m<br>m<br>m | ple<br>ple<br>ple | e D<br>e T<br>e R | ep<br>yr<br>lef  | oth<br>pe  | 5<br>1<br>E<br>C | STP<br>0.70-<br>3<br>0304 | 724(<br>1.2(<br>198 | 01<br>0m        |     |   |             |
|------------------------|-----------------|--------|--------------------|------|------|--------|------|-------------|-------------------|----------------|-------------|----|------|----------|----------------|------|-----|-------|-----|----------|--------|----------|------------|-----|---|---|--------|--------|----------------------|-------------|-------------------|-------------------|------------------|------------|------------------|---------------------------|---------------------|-----------------|-----|---|-------------|
| Sample<br>CHALK,       | Desc<br>recover | riptio | o <b>n</b><br>sanc | dy v | /ery | / silt | y gr | ave         | el w              | ith            | a r         | ne | diun | n c      | obt            | ble  | cor | nter  | nt. |          |        |          |            |     |   |   |        |        |                      |             |                   |                   |                  |            |                  |                           |                     |                 |     |   |             |
| 100                    |                 |        |                    | Π    |      |        | Τ    |             | Т                 |                |             |    |      |          |                |      | Т   | Π     |     |          |        | Т        |            |     |   |   |        |        |                      |             |                   |                   | Π,               | X          |                  |                           |                     | T               | Π   | Π | Π           |
| 90                     |                 |        |                    |      |      |        | +    |             | _                 |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   | $\left  \right $ |            |                  | _                         |                     | +               |     |   |             |
| 80                     |                 |        |                    |      |      |        | _    |             | _                 |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   | 4                |            |                  |                           |                     | _               |     |   |             |
| 70                     |                 |        |                    |      |      |        |      |             | _                 |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   |                  |            |                  | _                         |                     | _               |     |   |             |
| 60                     |                 |        |                    |      |      |        |      |             | _                 |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   | /                 |                  |            |                  | _                         |                     | _               |     |   |             |
| % Fine<br>%            |                 |        |                    |      |      |        |      |             | _                 |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      | /           |                   |                   |                  |            |                  |                           |                     |                 |     |   |             |
| °<br>40                |                 |        |                    |      |      |        |      |             | _                 |                |             |    |      |          |                |      |     |       |     |          |        |          |            | _   | - |   |        |        |                      |             |                   |                   |                  |            |                  |                           |                     |                 |     |   |             |
| 30                     |                 |        |                    |      |      |        |      |             |                   |                | •           |    |      | _        | _              | -    | +   |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   |                  |            |                  |                           |                     | _               |     |   |             |
| 20                     |                 |        |                    |      |      | /      |      | 1           | 1                 |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   |                  |            |                  | _                         |                     | _               |     |   |             |
| 10                     |                 |        |                    |      |      |        |      |             |                   |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   |                  |            |                  |                           |                     |                 |     |   |             |
| 0                      |                 |        |                    |      |      |        |      |             |                   |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   |                  |            |                  |                           |                     |                 |     |   |             |
| 0.0                    | 001             |        |                    |      | 0.0  | 1      |      |             |                   |                | -           | 0. | 1    |          |                |      | I   | Parti | ide | 1<br>Siz | e (m   | ım)      |            |     |   |   | 1      | )      |                      |             |                   |                   | -1               | 1(         | 00               |                           |                     |                 |     | 1 | . <b>00</b> |
| Classification         | CLAY            | Hne    |                    |      | SIL  | LT     |      | <u></u>     | arse              | •              |             |    | ine  |          |                | SA   | ND  |       |     | Joar     | se     |          | 1          | Ine |   |   | G      | avel   |                      |             | oars              | ie                |                  | <u></u>    | DODES            | 5                         |                     | BOUIC           | ers |   |             |
| Classifica             | tion            | % of   | eac                | h    | ]    | [      |      | s           | Size              | ,              |             |    | %    | 6 F      | ine            | r    |     |       |     |          | S      | Size     | )          |     |   | % | 6 F    | ner    |                      |             | [                 |                   | Un               | ifo        | ormi             | ty C                      | oet                 | fici            | ent |   |             |
| CLAY                   |                 |        | 6                  |      |      |        |      | 12<br>10    | 5 r<br>0 r        | mm<br>mm       | ו<br>ו      |    |      | 1)<br>1) | 00<br>00       |      |     |       |     |          | 6<br>2 | 3  <br>0 | u m<br>u m |     |   |   | 2      | 8<br>4 |                      |             |                   |                   |                  |            | 1                | 272                       | 3.5                 | 6               |     |   |             |
| SILT                   |                 |        | 22                 |      |      |        |      | 7<br>6<br>5 | 5 r<br>3 r<br>0 r | mm<br>mm<br>mm | ו<br>ו<br>ו |    |      | 9        | 96<br>90<br>71 |      |     |       |     |          |        | 6  <br>2 | u m<br>u m |     |   |   | 1<br>( | 9<br>6 |                      |             |                   |                   |                  | S          | ievi<br>V        | <b>ng I</b><br>Vet        | <b>Met</b><br>siev  | <b>hod</b><br>e |     |   |             |
| 0.0010                 |                 |        |                    |      |      |        | ;    | 37.<br>2    | 5 r<br>0 r        | mm<br>mm       | ו           |    |      | 6        | 51<br>50       |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   | Fi               | ne         | Par              | ticle                     | e Ar                | naly            | sis |   |             |
| SAND                   |                 |        | 9                  |      |      |        |      | 1           | 4 r<br>0 r        | mm<br>mm       | 1           |    |      | 4        | 18<br>16       |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             | -                 | Me                | etho             | bd         | tod              |                           | Pipe<br>Hydi        | tte<br>roge     | n   |   |             |
| GRAVEL                 |                 |        | 53                 |      |      |        |      | ь.          | 31<br>51<br>21    | nn<br>mr<br>mr | י<br>ו<br>ו |    |      | 4        | ⊧∠<br>⊧1<br>}7 |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   | wit               | th               | ed         |                  | -                         | Perc                | oxide           | )   |   |             |
| COBBLE                 | S               |        | 10                 |      |      |        |      | 1.1<br>60   | 8 i<br>0 j        | mm<br>µ m      | ו<br>ו      |    |      | 3        | 85<br>83       |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   | %<br>Pr           | ios<br>e-tr      | s c<br>rea | tmei             | nt                        | 0.00                |                 |     |   |             |
| BOULDE                 | RS              |        | 0                  |      |      |        |      | 30<br>15    | 0 I<br>0 I        | u m<br>u m     | ו<br>ו      |    |      | 3        | 81<br>30       |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   | Pa<br>De          | ens              | ity        |                  | (                         | Ass                 | um              | ed) |   |             |
|                        |                 |        |                    |      |      |        |      |             |                   |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   |                  |            |                  |                           |                     |                 |     |   |             |
|                        | -               |        |                    |      |      |        |      |             |                   |                |             |    |      |          |                |      |     |       |     |          |        |          |            |     |   |   |        |        |                      |             |                   |                   |                  |            |                  |                           |                     |                 |     |   |             |

| Babel Packet MADE GROUND: Light groups brown sightly groups up statistically provided in the statistical provided  | roject:<br>roject No | A30<br>): PC   | )3 AN<br>1977 | NESI<br>08         | BUI  | RΥ Τ  | o Be   | ERW     | /IC              | ΚD       | 0      | WN    | I - Pł | IASI       | E 7/ | A C      | OU     | NT       | TESS                      |            |        |                  |   |       |          | Hol<br>Sar<br>Sar<br>Sar | e<br>np<br>np<br>np | le I<br>le 1<br>le F | De<br>Fyj<br>Re | ptł<br>pe<br>f | ST<br>1 0.8<br>B<br>C3 | P724<br>0-1.2<br>0500 | 402<br>20m<br>) |       |      |     |
|--|----------------------|----------------|---------------|--------------------|------|-------|--------|---------|------------------|----------|--------|-------|--------|------------|------|----------|--------|----------|---------------------------|------------|--------|------------------|---|-------|----------|--------------------------|---------------------|----------------------|-----------------|----------------|------------------------|-----------------------|-----------------|-------|------|-----|
| $ \frac{10^{\circ}}{9^{\circ}} 1$ | Sample<br>PROBA      | Desc<br>BLE M/ | ripti         | i <b>on</b><br>GRC | JUC  | ID: L | ight   | grey    | ish              | bro      | wn     | ı sli | ghtly  | san        | dy s | sligh    | ntly ( | gra      | avelly s                  | ilt.       |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      |     |
| $ \frac{9}{9} + 9$   | 100                  |                |               |                    | Π    |       |        |         |                  |          | Π      | Π     |        |            |      |          |        | Π        |                           |            |        |                  | П |       |          |                          |                     |                      | 们               | •              |                        |                       |                 |       |      | Π   |
| $ \frac{1}{9^{4}} +$   | 90                   |                | _             |                    |      |       |        |         |                  |          |        |       |        |            | +    |          | +      |          |                           |            | +      | $\left  \right $ |   |       |          |                          | $\downarrow$        |                      |                 |                |                        |                       |                 |       |      | H   |
| No.         No. <td>80</td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>+</td> <td></td> <td>H</td>   | 80                   |                |               |                    |      |       |        |         |                  |          |        |       |        |            | _    |          |        |          |                           |            | +      |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      | H   |
| $ \frac{1}{9} 1$   | 70                   |                |               |                    |      |       |        |         |                  |          |        |       |        |            |      |          | ┦      | 1        |                           |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      |     |
| $\frac{1}{9} \int_{0}^{9} \int_{0}^$   | 60 -                 |                |               |                    |      |       |        |         |                  |          | -      |       |        |            |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      |     |
| 3       3       4       5       7       8       10   | ži 50                |                |               |                    |      |       |        |         |                  |          |        |       |        |            |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      |     |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $  | ~ 50                 |                |               |                    |      |       |        |         |                  |          |        |       |        |            |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      |     |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | 40                   |                |               |                    |      |       |        |         |                  |          |        |       |        |            |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      |     |
| Image: Sector for the sector  | 30 -                 |                |               |                    |      |       |        |         |                  |          |        |       |        |            |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      | [   |
| 10       0.01       0.1       1       10       00       10       0.0       10         Cassification       0.01       0.1       1       10       0.0       10       0.0       10         Cassification       0.1       1       1       10       0.0       00       10         Cassification       % of each       8.17       SAND       Grave       Frie       Medurin       Casse       Frie       Medurin       Casse       Frie       Medurin       Casse       Frie       Medurin       Casse       Eastification       % of each       Eastification       % of each       125       mm       100       mm       100       No       No <td>20</td> <td></td> <td> -</td>   | 20                   |                |               |                    |      |       |        |         |                  |          |        |       |        |            |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      | -   |
| Cassification         Not of each         SIZ         % Finer         SIZ         SIZ         % Finer           Classification         % of each         125 mm         100<   | 10                   |                |               |                    |      |       |        |         |                  |          |        |       |        |            |      |          |        |          |                           |            | +      |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      | ŀ   |
| Size         % Finer         100         Size         % Finer         63 μm         63         m         63 μm         63         m         Not Available           CLAY         23         100 mm         100         57 mm         100         6 μm         48         2 μm         59         50 μm         59         5 μm         6 μm         48         2 μm         23         Wet sieve         50 mm         97         37.5 mm         92         20 mm         88         1 4 mm         86         100 mm         100         Wet sieve         50 mm         92         20 mm         88         1 4 mm         86         10 mm         14 mm         86         10 mm         81         1 1 8 mm         76         600 µm         1 1 8 mm         76         600 µm         1 1 8 mm         76         600 µm         73         300 µm         69         1 1 8 mm         76         600 µm         97         300 µm         69         1 1 8 mm         76         600 µm         73         300 µm         69         1 1 8 mm         76         600 µm         73         300 µm         69         1 1 8 mm         76         600 µm         73         300 µm         1 1 8 mm         69         1 50 µm  | 0 L<br>0.0           | 01             |               |                    |      | 0.01  |        |         |                  |          |        | 0     | .1     |            |      |          |        |          | 1                         |            |        |                  |   | <br>1 | 0        |                          |                     |                      |                 | _<br>1         | 00                     |                       |                 |       | 1    | 00  |
| Classification         % of each           CLAY         23           SILT         40           SILT         40           SAND         100 mm           63 μm         63           20 μm         59           6 μm         48           2 μm         23           37.5 mm         92           20 mm         88           14 mm         86           10 mm         81           5 mm         92           20 mm         88           14 mm         86           10 mm         81           5 mm         80           2 mm         73           300 μm         69           150 μm         66           150 μm   | Classification       |                | Fi            | ne                 |      | Medi  | um     | (       | Doars            | se       |        | I     | Fine   |            | Mec  | F<br>ium | artic  | de:<br>C | <b>Size (m</b> r<br>òarse | n)         | Fin    | е                |   | M     | dium     |                          | Coa                 | arse                 |                 | Q              | obbles                 |                       | Bou             | Iders |      | ]   |
| Classification         % of each         Size         % Finer         Size         % Finer         Uniformity Coefficient           CLAY         23         125 mm         100 mm         100         100         59         63 µm         63         20 µm         59         6 µm         48         2 µm         23         Wet sieve           SILT         40         50 mm         97         37.5 mm         92         20 mm         88         14 mm         86         10 mm         44         63 mm         100 mm         75         100 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         92         97.5 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm         97.6 mm   |                      |                |               |                    |      | SIL   |        |         |                  |          |        |       |        |            | SA   |          |        |          |                           |            |        |                  |   | G     | ravel    |                          |                     |                      |                 |                |                        |                       |                 |       |      |     |
| CLAY     23     100 mm     100     20 μm     59       SILT     40     75 mm     100     6 μm     48       SAND     15     75 mm     92       SAND     15     75 mm     92       QCBBLES     0     63 mm     80       BOULDERS     0     118 mm     76       60 μm     73     73     76       60 μm     78     76       60 μm     76     76       60 μm     78     78       150 μm     76     76       60 μm     78     76       60 μm     78     76       60 μm     78     76       750 μm     76     76       76     76     76  | Classifica           | tion           | %             | of ea              | ach  | _     | -      | 1       | <b>Siz</b><br>25 | ze<br>mr | n      |       | %      | <b>Fin</b> | er   | _        |        | -        | <b>S</b>                  | ize<br>Տա  | m      |                  | ġ | % F   | iner     |                          |                     |                      | Uı              | nifc           | ormity                 | Coe                   | effic           | ient  |      |     |
| SILT     40     63 mm     100     2 μm     23     Uter size       SAND     15     37.5 mm     92     37.5 mm     92       20 mm     88     14 mm     86     10 mm     84       GRAVEL     22     63 mm     81     5 mm     80       COBBLES     0     1.18 mm     76     0.00       BOULDERS     0     150 μm     66     100 μm     63   | CLAY                 |                |               | 2                  | 23   |       |        | 1       | 00<br>75         | mn<br>mn | n<br>n |       |        | 100<br>100 |      |          |        |          | 20<br>6                   | )μ<br>3μ   | m<br>m |                  |   | ļ     | 59<br>48 |                          |                     |                      |                 | S              |                        | AVall                 |                 | 4     |      |     |
| SAND       15       37.5 mm       92       Fine Particle Analysis         GRAVEL       22       0 mm       88       14 mm       86         10 mm       84       6.3 mm       81       Pre-treated       Pre-treated         COBBLES       0       1.18 mm       76       0.00       Pre-treatment       0.00         BOULDERS       0       150 μm       66       660       489       489       489         Mathematical Structure       150 μm       660       489       489       489       489         BOULDERS       0       150 μm       66       150 μm       66       150 μm       66       150 μm       7892-4/2016       701/2  | SILT                 |                |               | 4                  | 10   |       |        |         | 63<br>50         | mn<br>mn | n<br>n |       |        | 100<br>97  |      |          |        |          | 2                         | <u>2</u> μ | m      |                  |   | 2     | 23       |                          |                     |                      |                 |                | We                     | et sie                | eve             |       |      |     |
| GRAVEL       22       14 mm       36       Method       Pipete         10 mm       84       6.3 mm       81       Pre-treated       Hydrogen         COBBLES       0       1.18 mm       76       % loss on       0.00         BOULDERS       0       1.18 mm       66       Pre-treated       % loss on       0.00         BOULDERS       0       150 μm       66       Pre-treated       0.00       Particle       2.65         Method       150 μm       66       Pre-treated       2.65       Pre-treatment       0.00   | SAND                 |                |               | 1                  | 5    |       |        | 37      | 7.5<br>20        | mn       | n<br>n |       |        | 92<br>88   |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     |                      | Fi              | ine            | Partie                 | cle A                 | naly            | /sis  |      |     |
| COBBLES       0       5 mm       80       with       Peroxide         2 mm       78       1.18 mm       76       % loss on       0.00         BOULDERS       0       150 μm       69       9       150 μm       66       Particle       2.65         Density       150 μm       66       150 μm       66       Particle       2.65       Density       Assumed)  | GRAVEL               |                |               | 2                  | 22   |       |        | e       | 10<br>5.3        | mn       | n<br>n |       |        | 84<br>81   |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     | P                    | re-t            | irea           | ted                    | Ну                    | drog            | en    |      |     |
| COBBLES       0       1.18 mm       76         BOULDERS       0       400 μm       73         BOULDERS       0       150 μm       60         150 μm       66       150 μm       66         emarks       Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016       27/01/2  | UNAVEL               |                |               | 2                  |      | -     |        |         | 5<br>2           | mn<br>mn | n<br>n |       |        | 80<br>78   |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     | w<br>%               | ith             | ss             | on                     | Pe                    | roxid           | е     |      |     |
| BOULDERS 0 150 µm 66 Density (Assumed)<br>emarks I Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016   | COBBLES              | 6              |               |                    | 0    | +     |        | 1.<br>6 | 18               | mn<br>μn | n<br>n |       |        | 76<br>73   |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     | P                    | re-t            | irea           | tment                  | 0.0<br>2 6            | 5               |       |      |     |
| emarks R Sieve:-Test performed in accordance with BS FN ISO 17892-4:2016   | BOULDEF              | RS             |               |                    | 0    |       |        | 1       | 50               | μn<br>μn | n      |       |        | 69<br>66   |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     | D                    | ens             | sity           |                        | (As                   | sum             | ned)  |      |     |
| emarks R Sieve:-Test performed in accordance with BS FN ISO 17892-4:2016   |                      |                |               |                    |      |       |        |         |                  |          |        |       |        |            |      |          |        |          |                           |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 |       |      |     |
|  | emarks a             | Siev           | /e:-Te        | est p              | erfo | orme  | d in a | acco    | rda              | ince     | w      | ith   | BS E   | N IS       | 5O 1 | 789      | 92-4   | 1:2      | 016                       |            |        |                  |   |       |          |                          |                     |                      |                 |                |                        |                       |                 | 2     | 7/01 | /20 |

| roject:<br>roject N | АЗ<br><b>Io:</b> РС | 03 AN<br>1977 | ИЕS<br>08        | SBL             | JR   | ΥT    | ) BI   | ERV   | VIC                | K E            | 00     | WN               | I - Pŀ  | IAS            | Ε 7  | A C       | OU   | NT         | ESS   |                  |          |        |      |   |                  | H<br>S<br>S<br>S | lole<br>Sam<br>Sam<br>Sam | e<br>iple<br>iple<br>iple | e D<br>e T<br>e R | ep<br>yp<br>ef | oth<br>e | STF<br>1.00<br>B<br>C30 | 9724<br>)-1.2<br>)553 | 03<br>0m |      |            |
|---------------------|---------------------|---------------|------------------|-----------------|------|-------|--------|-------|--------------------|----------------|--------|------------------|---------|----------------|------|-----------|------|------------|-------|------------------|----------|--------|------|---|------------------|------------------|---------------------------|---------------------------|-------------------|----------------|----------|-------------------------|-----------------------|----------|------|------------|
| Sample<br>PROB      | e Desc<br>ABLE M    | ADE           | <b>ior</b><br>GR | <b>1</b><br>100 | IN   | D: Li | ght    | gre   | y sa               | andy           | y ve   | ery s            | silty g | Irave          | el w | ith a     | me   | ediu       | um c  | obb              | le c     | onte   | ent. |   |                  |                  |                           |                           |                   |                |          |                         |                       |          |      |            |
| 100                 | )                   |               |                  |                 | Π    |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           |                   |                |          | •                       |                       |          |      |            |
| 90                  | <b>)</b>            |               |                  |                 | ╢    |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           |                   | /              |          |                         |                       |          |      |            |
| 80                  | )                   |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           | A                 |                |          |                         |                       |          |      |            |
| 70                  |                     |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           | /                         |                   |                |          |                         |                       |          |      |            |
| 60                  | )                   |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           | 1                         |                   |                |          |                         |                       |          |      |            |
| iii 50              |                     |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           |                   |                |          |                         |                       |          |      |            |
| * *                 |                     |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   | $\ $             | /                |                           |                           |                   |                |          |                         |                       |          |      |            |
| 40                  |                     |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          | 7      | 1    |   |                  |                  |                           |                           |                   |                |          |                         |                       |          |      |            |
| 30                  | )                   |               |                  |                 |      |       |        |       |                    |                |        |                  |         | -              | +    | 1         |      |            |       |                  |          |        |      |   |                  |                  |                           |                           |                   |                |          |                         |                       |          |      |            |
| 20                  | )                   |               |                  |                 | 7    |       | _      |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           |                   |                |          |                         |                       |          |      |            |
| 10                  | )                   |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           |                   |                |          |                         |                       |          |      |            |
| 0<br>0              | ) [<br>).001        |               |                  |                 |      | 0.01  |        |       |                    |                |        | 0.               | .1      |                |      |           |      |            | 1     |                  |          |        |      |   | 10               |                  |                           |                           |                   |                | 100      | )                       |                       |          |      | 100<br>100 |
| Classification      | n<br>Q AY           | Fi            | ine              |                 |      | Mediu | um     |       | Coa                | rse            |        |                  | Fine    |                | Mex  | e<br>dium |      | Caes<br>Ca | oarse | nm)              | )        | Fine   |      |   | Med              | ium              |                           | Coars                     | se                |                | Cobb     | des                     |                       | Bouk     | ders |            |
|                     |                     |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                | 54   |           |      | _          |       |                  |          |        |      |   | Ga               | ivei             | _                         |                           |                   |                |          |                         |                       |          |      |            |
| Classific           | ation               | %             | of e             | eac             | h    |       | ╞      |       | <b>Si</b> :<br>125 | <b>ze</b><br>m | m      | +                | %       | Fin<br>100     | er   | _         |      | -          |       | <b>Siz</b><br>63 | e<br>μm  | 1      |      | % | <b>Fir</b><br>23 |                  | _                         |                           |                   | Uni            | iforr    | nity                    | Coel                  | ffici    | ent  |            |
| CLAY                |                     |               |                  | 6               |      |       |        |       | 100<br>75          | m<br>m         | m<br>m |                  |         | 100<br>100     | )    |           |      |            |       | 20<br>6          | μπ<br>μπ | ו<br>ו |      |   | 22<br>17         | 2                |                           |                           |                   |                | Sie      | vina                    | Met                   | hod      |      |            |
| SILT                |                     |               |                  | 17              |      |       |        |       | 63<br>50           | m<br>m         | m<br>m |                  |         | 94<br>88       |      |           |      |            |       | 2                | μm       | l      |      |   | 6                |                  |                           |                           |                   |                |          | Wet                     | t siev                | /e       | -    |            |
| SAND                |                     |               |                  | 11              |      |       |        | 3     | 20                 | m<br>m         | m<br>m |                  |         | 74<br>54       |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           |                   | Fin            | ne P     | artic                   | le Ar                 | naly     | sis  |            |
|                     |                     |               |                  | 60              |      |       |        |       | 10<br>6.3          | m              | m<br>m |                  |         | 49<br>45<br>40 |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           | Pre               | e-tre          | eate     | d                       | Hyd                   | roge     | en   |            |
| GRAVE               | L                   |               |                  | 00              |      |       |        |       | 5<br>2             | m<br>m         | m<br>m |                  |         | 39<br>34       |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           | wit               | h<br>loca      | s on     |                         | Perc                  | oxide    | e    |            |
| COBBLE              | ES                  |               |                  | 6               |      |       |        | 1     | .18<br>600         | m<br>µ         | m<br>m |                  |         | 31<br>29       |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           | Pre               | e-tre          | eatm     | nent                    | 0.00                  | ,<br>    |      |            |
| BOULD               | ERS                 |               |                  | 0               |      |       |        |       | 150                | μ<br>μ         | m      |                  |         | 26<br>24       |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           | De                | ensi           | ty       |                         | (Ass                  | sum      | ed)  |            |
|                     |                     |               |                  |                 |      |       |        |       |                    |                |        |                  |         |                |      |           |      |            |       |                  |          |        |      |   |                  |                  |                           |                           |                   |                |          |                         |                       |          |      |            |
| emarke              |                     | Ve·-T         | Pet              | ner             | for  | mer   | l in · | ac.c/ | arde               | anci           | e 14/  | ith <sup>I</sup> | RS F    | NIS            | SO 1 | 1789      | 92-1 | 1.20       | 016   |                  |          |        |      |   |                  |                  |                           |                           |                   |                |          |                         |                       |          | 27   | //01/20    |
| -                   | Pip                 | ette:-        | Tes              | st pe           | erfo | orme  | ed ir  | 1 ac  | cord               | dan            | ce     | with             | 1 BS    | EN             | ISC  | 178       | 392  | -4:        | 2016  |                  |          |        |      |   |                  |                  |                           | 6                         | 2                 | Y              | <b>N</b> | R                       | ~                     | -        | JI   |            |

| roject:<br>roject No | A30<br><b>o:</b> PC <sup>-</sup> | 3 AME<br>197708          | SBU         | IRY  | / ТО В         | ERWI             | ICK                | DO        | WN   | N - PH | IAS        | E 7/ | A C        | OU    | NT   | ESS           |                   |        |   |             |                  | 5 5 5 5      | iole<br>Sam<br>Sam<br>Sam | ple<br>ple<br>ple | De<br>Ty<br>Re | ept<br>/pe<br>ef | <b>h</b> 0.8<br><b>b</b> 0.8<br><b>b</b> B<br>C( | 30-1.2<br>30544 | 104<br>20m |       |    |
|----------------------|----------------------------------|--------------------------|-------------|------|----------------|------------------|--------------------|-----------|------|--------|------------|------|------------|-------|------|---------------|-------------------|--------|---|-------------|------------------|--------------|---------------------------|-------------------|----------------|------------------|--|-----------------|------------|-------|----|
| Sample<br>MADE (     | <b>Desci</b><br>GROUN            | <b>riptio</b><br>D: Ligh | n<br>nt gre | eyis | h brow         | n sano           | dy s               | ilty      | grav | vel.   |            |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   |                |                  |  |                 |            |       |    |
| 100                  |                                  |                          |             | Π    |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   |                | TT               |  |                 |            |       | ТП |
| 90                   |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   | $\square$      |                  |  | _               |            |       |    |
| 80                   |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   | 4              |                  |  |                 |            |       |    |
| 70                   |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              |                           | /                 |                |                  |  |                 |            |       |    |
| 70                   |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              |                           | $\left  \right $  |                |                  |  |                 |            |       |    |
| 60<br>≍              |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              | $\uparrow$                |                   |                |                  |  |                 |            |       |    |
| 변 50<br>%            |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              | f                         |                   |                |                  |  |                 |            |       |    |
| 40                   |                                  |                          |             |      |                | $\left  \right $ |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  | /            |                           |                   |                |                  |  |                 |            |       |    |
| 30                   |                                  |                          |             |      |                |                  | _                  |           |      |        |            | +    |            | +     |      |               | -                 |        |   | $\parallel$ | 1                |              |                           |                   |                |                  |  |                 |            |       | ++ |
| 20                   |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   | 1      |   |             |                  |              |                           |                   |                |                  |  |                 |            |       |    |
| 10                   |                                  |                          |             |      |                |                  | +                  |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   |                |                  |  |                 |            |       |    |
| 0                    |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   |                |                  |  |                 |            |       |    |
| 0.0                  | 001                              |                          |             | 0    | .01            |                  |                    |           | 0    | ).1    |            |      | F          | artic | de S | 1<br>Size (m  | m)                |        |   |             | 10               | )            |                           |                   |                | -                | 100  |                 |            |       | 10 |
| lassification        | 0.AY                             | Fine                     |             | Ν    | /edium<br>SILT | 00               | arse               | •         |      | Fine   |            | Mec  | ilum<br>ND |       | α    | oarse         |                   | Fin    | е |             | Mex              | dium<br>avel | (                         | Doarse            | e              | (                | )obbles  |                 | Boul       | lders |    |
|                      |                                  | 1                        |             |      |                |                  |                    |           |      |        |            |      | _          |       | Г    |               |                   |        |   |             |                  |              | _                         | г                 |                |                  |  |                 |            |       |    |
| Classifica           | ation                            | % of                     | eacl        | h    |                | 12               | <b>Size</b><br>5 r | nm        | _    | %      | <b>Fin</b> | er   | -          |       | -    | <b>S</b><br>6 | <b>ize</b><br>3 μ | m      | + | %           | 6 <b>Fi</b><br>1 | ner<br>5     | -                         | +                 | ι              | Jnif             | ormity<br>2                                      | <b>/ Coe</b>    | effici     | ient  |    |
| CLAY                 |                                  |                          | 3           |      |                | 10<br>7          | 10 r<br>75 r       | nm<br>nm  |      |        | 100<br>100 | )    |            |       |      | 2             | 0μ<br>6μ          | m<br>m |   |             | 1<br>ç           | 1<br>Э       |                           | +                 |                |                  | Sievin   | a Me            | tho        | d     |    |
| SILT                 |                                  |                          | 12          |      |                | 6<br>5           | i3 r<br>i0 r       | nm<br>nm  |      |        | 100<br>88  | )    |            |       |      | :             | 2μ                | m      |   |             | 3                | 3            |                           | ļ                 |                |                  | W  | et sie          | ve         |       |    |
| SAND                 |                                  |                          | 8           |      |                | 37.<br>2         | .5 r<br>20 r       | nm<br>nm  |      |        | 75<br>46   |      |            |       |      |               |                   |        |   |             |                  |              |                           | -                 |                | Fine             | e Parti  | cle A           | naly       | /sis  |    |
|                      |                                  |                          |             |      |                | 1                | 4 r<br>0 r         | nm<br>nm  |      |        | 42<br>37   |      |            |       |      |               |                   |        |   |             |                  |              |                           | +                 | Met            | tro              |  | Рір<br>Нус      | drog       | en    |    |
| GRAVEL               |                                  |                          | 77          | _    |                | 0.               | .5 r<br>5 r<br>2 r | nm        |      |        | 29<br>23   |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   | with           | ופי              | aleu   | Per             | oxid       | е     |    |
| COBBLE               | S                                |                          | 0           |      |                | 1.1<br>60        | 8 r<br>0 µ         | nm<br>1 m |      |        | 21<br>19   |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   | % le<br>Pre    | oss<br>-trea     | on<br>atmen                                      | 0.0             | 0          |       |    |
| BOULDE               | RS                               |                          | 0           |      |                | 30<br>15         | 10 k               | ιm<br>ιm  |      |        | 17<br>16   |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   | Par<br>Der     | ticle<br>nsity   | e<br>1   | 2.6<br>(As      | 5<br>sum   | ned)  |    |
|                      |                                  | •                        |             |      |                |                  |                    |           |      |        |            |      | 1          |       |      |               |                   |        | _ |             |                  |              |                           | L                 |                |                  |  | -               |            |       |    |
|                      |                                  |                          |             |      |                |                  |                    |           |      |        |            |      |            |       |      |               |                   |        |   |             |                  |              |                           |                   |                |                  |  |                 |            |       |    |

| roject:<br>roject No | АЗС<br><b>D:</b> РС  | 03 AMESB<br>197708            | BURY TO    | BERWIC     | K DOV    | VN - PH    | ASE 7            | 7A CC        | DUN.   | TESS          |              |    |     | H<br>Si<br>Si   | ole<br>amp<br>amp<br>amp | le D<br>le T<br>le R | ept<br>ype<br>ef | ST<br>th 0.5<br>e B<br>C3 | P72501<br>0-1.20n<br>0521 | ı            |                          |
|----------------------|----------------------|-------------------------------|------------|------------|----------|------------|------------------|--------------|--------|---------------|--------------|----|-----|-----------------|--------------------------|----------------------|------------------|---------------------------|---------------------------|--------------|--------------------------|
| Sample<br>MADE (     | <b>Desc</b><br>GROUN | <b>ription</b><br>ID: Light g | reyish bro | own slight | ly sand  | y slightly | grave            | elly silt    | i.     |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |
| 100                  |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          |                      | TTT              |                           |                           |              |                          |
| 90                   |                      |                               |            |            |          |            | $\left  \right $ |              |        |               |              |    |     |                 |                          | +                    | $\left  \right $ |                           |                           |              |                          |
| 80                   |                      |                               |            |            |          |            |                  |              |        |               |              |    | 1   |                 |                          |                      |                  |                           |                           |              |                          |
| 70                   |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |
| ബ                    |                      |                               |            |            |          |            |                  | $\square$    |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |
| ži<br>U              |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |
| ײַ <b>50</b><br>%    |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |
| 40                   |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |
| 30                   |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          | +                    |                  |                           |                           |              |                          |
| 20                   |                      | $\mathbb{A}$                  |            |            |          |            | $\left  \right $ |              |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |
| 10                   |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              | $\left  \right  \right $ |
| 0                    |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |
| 0.0                  | 001                  |                               | 0.01       |            |          | 0.1        |                  | Pa           | rticle | 1<br>Size (mr | n)           |    | 1   | 10              |                          |                      |                  | 100                       |                           |              | 10                       |
| Jassification        | (LAY                 | Hne                           | SILT       | n Coa      | rse      | Hne        | S/               | adium<br>AND | (      | Coarse        | HI           | ne | M   | edium<br>Fravel | CDa                      | irse                 |                  | Lobbles                   | Bo                        | ulders       |                          |
| Classifica           | ation                | % of ea                       | ch         | Si         | ze       | %          | Finer            |              | [      | Si            | ize          |    | % F | iner            |                          |                      | Unif             | ormitv                    | Coeffi                    | cient        |                          |
| CLAY                 |                      | 16                            | 3          | 125        | mm       | 1          | 100              |              |        | 63            | 3 μm<br>) μm |    |     | 52<br>45        |                          |                      |                  | Not A                     | Available                 | Э            |                          |
|                      |                      |                               |            | 75         | mm<br>mm |            | 100<br>100       |              |        | 6             | 3 μm<br>2 μm |    |     | 35<br>16        |                          |                      | :                | Sieving                   | g Metho                   | bd           |                          |
| SILT                 |                      | 36                            | 5          | 50<br>37.5 | mm<br>mm | 1          | 100<br>99        |              |        |               |              |    |     |                 |                          | -                    | Ein              | We<br>Dertic              | et sieve                  | lveie        |                          |
| SAND                 |                      | 23                            | 3          | 20         | mm<br>mm |            | 95<br>91         |              |        |               |              |    |     |                 |                          | Me                   | ethoo            |                           | Pipette                   | <b>y 515</b> |                          |
| GRAVEL               |                      | 25                            | 5          | 10<br>6.3  | mm<br>mm |            | 89<br>85<br>82   |              |        |               |              |    |     |                 |                          | Pr                   | e-tre<br>h       | ated                      | Hydro<br>Peroxi           | gen<br>de    |                          |
|                      | s                    | (                             | 5          | 2<br>1.18  | mm       |            | 75<br>72         |              |        |               |              |    |     |                 |                          | %                    | loss             | on                        | 0.31                      |              |                          |
| BOILDE               | BS                   |                               |            | 600<br>300 | μm<br>μm |            | 68<br>63         |              |        |               |              |    |     |                 |                          | Pr                   | e-tre            | atment                    | 2.65                      | merl         |                          |
|                      |                      | ļ                             | ·          | 150        | μm       | <u> </u>   | 5/               |              |        |               |              |    |     |                 |                          | De                   | ensity           | /                         | ASSU                      | neu)         |                          |
|                      |                      |                               |            |            |          |            |                  |              |        |               |              |    |     |                 |                          |                      |                  |                           |                           |              |                          |

| roject:<br>roject No | A30<br>D: PC   | 93 AME          | ESBU<br>8          | RY      | TO BE     | RWI             | CKD                  | 001         | ΝN     | - PH  | ASE            | 7A    | CO       | UN    | TES           | S        |           |              |       |          | Hole<br>Sam<br>Sam<br>Sam | ple<br>ple<br>ple | e Do<br>e Ty<br>e Ro   | epi<br>ype<br>ef       | S1<br>th 0.7<br>e B<br>C3 | 70-1.:<br>30523 | 502<br>20m<br>3 |       |        |
|----------------------|----------------|-----------------|--------------------|---------|-----------|-----------------|----------------------|-------------|--------|-------|----------------|-------|----------|-------|---------------|----------|-----------|--------------|-------|----------|---------------------------|-------------------|------------------------|------------------------|---------------------------|-----------------|-----------------|-------|--------|
| Sample<br>PROBA      | Desc<br>BLE MA | riptic<br>ADE G | <b>on</b><br>iroui | ND:     | : Light ( | greyis          | h brc                | own         | ı sli  | ghtly | sand           | ly gr | avel     | ly s  | ilt.          |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| 100                  |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           | M                 |                        | T                      |                           |                 |                 |       |        |
| 90                   |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          | +     |               | _        |           | _            |       |          | 4                         | $\left  \right $  |                        | +                      |                           |                 |                 |       |        |
| 80                   |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           | _            |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| 70                   |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           | $\downarrow$ | 1     |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| 60                   |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| ё<br>іщ 50           |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| * *                  |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| 40                   |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| 30                   |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| 20                   |                | $\square$       |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| 10                   |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
| 0<br>0.0             | )01            |                 |                    | <br>0.0 | 01        |                 |                      |             | <br>0. | 1     |                |       |          |       | 1             |          |           |              | <br>1 | 0        |                           |                   |                        |                        | <br>100                   |                 |                 |       | <br>10 |
| Oassification        |                | Fine            | e                  | Me      | edium     | Coa             | arse                 | T           | F      | īne   |                | Vediu | Par<br>m | ticle | Size<br>Coars | (mm<br>e | I)        | Fine         | М     | edium    |                           | Coars             | е                      |                        | Cobbles                   |                 | Bou             | Iders |        |
|                      |                |                 |                    | 5       | SILT      |                 |                      |             |        |       |                | SAN   | 2        |       |               |          |           |              | 0     | ravel    |                           |                   |                        |                        |                           |                 |                 |       |        |
| Classifica           | tion           | % <b>o</b> 1    | f each             | ı       | F         | <b>S</b>        | ize                  | m           |        | %     | Fine           | r     |          |       |               | Siz      | ze<br>u m |              | % F   | iner     |                           |                   | I                      | Jnif                   | iormity                   | y Coe           | effic           | ient  |        |
| CLAY                 |                |                 | 13                 |         |           | 10              | 0 mr<br>5 mr         | m<br>m      |        |       | 100            |       |          |       |               | 20<br>6  | μn<br>μn  | י<br>ו<br>ו  |       | 49<br>37 |                           |                   |                        |                        | Not                       | Avail           | able            |       |        |
| SILT                 |                |                 | 39                 |         |           | 63<br>50        | 3 mr<br>0 mr         | m<br>m      |        |       | 100<br>100     |       |          |       |               | 2        | μn        | ſ            |       | 13       |                           | Į                 |                        |                        | W                         | et sie          | eve             | u     |        |
| SAND                 |                |                 | 12                 |         |           | 37.9<br>20      | 5 mr<br>0 mr         | m<br>m      |        |       | 100<br>94      |       |          |       |               |          |           |              |       |          |                           |                   |                        | Fin                    | e Parti                   | cle A           | nal             | ysis  |        |
|                      |                |                 |                    |         |           | 14<br>1(<br>6.1 | 4 mr<br>0 mr<br>3 mr | m<br>m<br>m |        |       | 88<br>82<br>75 |       |          |       |               |          |           |              |       |          |                           | ŀ                 | Me <sup>-</sup><br>Pre | thoo                   | d<br>ated                 | Рір<br>Ну       | drog            | en    |        |
| GRAVEL               |                |                 | 36                 | -       |           |                 | 5 mr<br>2 mr         | m<br>m      |        |       | 73<br>64       |       |          |       |               |          |           |              |       |          |                           | ŀ                 | with                   | 1<br>005               | 00                        | Pe              | roxic           | le    |        |
| COBBLE               | S              |                 | 0                  |         |           | 1.18<br>600     | Bmr<br>Dμr           | m<br>m      |        |       | 61<br>58       |       |          |       |               |          |           |              |       |          |                           |                   | /o I<br>Pre            | -tre                   | atment                    | t 0.0           | 0               |       |        |
| BOULDE               | RS             |                 | 0                  |         |           | 30)<br>15)      | μr<br>Cμr            | m<br>m      |        |       | 56<br>55       |       |          |       |               |          |           |              |       |          |                           |                   | Par<br>Dei             | ticle<br>nsit <u>y</u> | e<br>/                    | 2.6<br>(As      | o<br>ssun       | ned)  |        |
|                      |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |
|                      |                |                 |                    |         |           |                 |                      |             |        |       |                |       |          |       |               |          |           |              |       |          |                           |                   |                        |                        |                           |                 |                 |       |        |

| Project:<br>Project No | A30<br><b>5:</b> PC | 3 AMESE<br>197708  | BURY     | / TO BE        | RWIC        | K DC     | IWC  | N - PH  | ASE               | 7A C   | COU              | JNT       | ESS                       |              |        |   |     | +<br>\$<br>\$  | lole<br>Samp<br>Samp<br>Samp | ole C<br>ole T<br>ole F | )ep<br>jype<br>lef | W<br>th 1.2<br>e B<br>C3 | S7240<br>20-2.00<br>50807 | )2<br>0m        |     |          |
|------------------------|---------------------|--------------------|----------|----------------|-------------|----------|------|---------|-------------------|--------|------------------|-----------|---------------------------|--------------|--------|---|-----|----------------|------------------------------|-------------------------|--------------------|--------------------------|---------------------------|-----------------|-----|----------|
| Sample<br>PROBA        | Desc<br>BLE MA      | ription<br>ADE GRO | UND      | ): Light (     | greyish     | ı brov   | vn s | lightly | sandy             | / slig | htly             | gra       | avelly s                  | ilt.         |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| 100                    |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                | H                            |                         |                    |                          |                           |                 |     | Π        |
| 90                     |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                | /<br>                        |                         |                    |                          |                           |                 |     |          |
| 80                     |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| 70                     |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| 60                     |                     |                    |          |                |             |          | •    |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| Ĕ 50                   |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| ~ 50                   |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| 40                     |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| 30                     |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| 20                     |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     | Ħ        |
| 10                     |                     |                    |          |                |             |          |      |         |                   |        | $\left  \right $ |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 |     |          |
| 0                      | 001                 |                    | <br>0    | ).01           |             |          |      | ).1     |                   |        |                  |           | 1                         |              |        |   |     | 10             |                              |                         |                    | <br>100                  |                           |                 |     | <br>1000 |
| Classification         |                     | Fine               |          | <b>/</b> edium | Coa         | rse      |      | Fine    | M                 | ledium | Parti            | de S<br>C | <b>Size (m</b> i<br>barse | n)           | Fine   |   | M   | edium          | 0                            | arse                    |                    | Cobbles                  |                           | Boulde          | rs  |          |
|                        | CLAY                |                    | <u> </u> | SILT           |             |          |      |         | S                 | and    |                  |           |                           |              |        |   | C   | Favel          | -                            |                         |                    |                          |                           |                 |     |          |
| Classifica             | ition               | % of ea            | ch       |                | Si          | ze       |      | %       | Finer             |        | ]                |           | S                         | ize          |        |   | % F | iner           |                              |                         | Uni                | formity                  | Coef                      | ficie           | nt  |          |
| CLAY                   |                     | 1                  | 5        |                | 125<br>100  | mm<br>mm |      |         | 100<br>100        |        |                  |           | 63<br>20                  | 8 μr<br>) μr | n<br>n |   |     | 66<br>62<br>40 |                              |                         |                    | Not                      | Availa                    | ble             |     |          |
| SILT                   |                     | 5.                 | 1        |                | 63<br>50    | mm       |      |         | 100<br>100<br>100 |        |                  |           | 2                         | 2 μr         | n      |   |     | 49<br>15       |                              |                         |                    | Sievin<br>W              | <b>g Met</b><br>et siev   | <b>hod</b><br>e |     |          |
|                        |                     | 1                  | ,        |                | 37.5<br>20  | mm<br>mm |      |         | 100<br>98         |        |                  |           |                           |              |        |   |     |                |                              |                         | Fin                | e Parti                  | cle Ar                    | nalys           | is  |          |
| SAND                   |                     |                    |          |                | 14<br>10    | mm<br>mm | 1    |         | 88<br>86          |        |                  |           |                           |              |        |   |     |                |                              | M                       | etho               | , , ,                    | Pipe                      | rogen           |     |          |
| GRAVEL                 |                     | 22                 | 2        |                | 6.3<br>5    | mm<br>mm |      |         | 83<br>82<br>79    |        |                  |           |                           |              |        |   |     |                |                              | Pr<br>wi                | e-tre<br>th        | ated                     | Perc                      | oxide           |     |          |
| COBBLE                 | S                   | (                  | D        |                | 1.18<br>600 | mm<br>µm |      |         | 75<br>72          |        |                  |           |                           |              |        |   |     |                |                              | %<br>Pr                 | loss<br>e-tre      | on<br>atment             | 0.00                      |                 |     |          |
| BOULDE                 | RS                  | (                  | 0        |                | 300<br>150  | μm<br>μm |      |         | 70<br>69          |        |                  |           |                           |              |        |   |     |                |                              | Pa<br>De                | articl<br>ensit    | e<br>y                   | 2.65<br>(Ass              | ume             | d)  |          |
|                        |                     | -                  |          |                |             |          |      |         |                   |        | -                |           |                           |              |        | - |     |                |                              |                         |                    |                          | -                         |                 |     |          |
|                        |                     |                    |          |                |             |          |      |         |                   |        |                  |           |                           |              |        |   |     |                |                              |                         |                    |                          |                           |                 | 07/ |          |

| oject No:           | PC1   | 9770                 | 8                |     |               |      |           | U.V.              |                |      |         |                | JC 7        |      |       |          |                         |               |                |               |   |                | Sam<br>Sam<br>Sam | ple<br>ple<br>ple | D<br>T<br>R | ept<br>ype<br>ef        | th 2.0<br>B B<br>C3 | 00-2.8<br>30806 | 30m           |      |        |
|---------------------|-------|----------------------|------------------|-----|---------------|------|-----------|-------------------|----------------|------|---------|----------------|-------------|------|-------|----------|-------------------------|---------------|----------------|---------------|---|----------------|-------------------|-------------------|-------------|-------------------------|---------------------|-----------------|---------------|------|--------|
| Sample D<br>PROBABI | Descr | <b>iptic</b><br>DE G | <b>on</b><br>Rol | JNE | ): Ligi       | ht g | reyis     | sh b              | orow           | /n s | lightly | y sa           | ndy         | slig | htly  | gra      | avelly                  | silt          |                |               |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| 100                 |       |                      |                  |     |               |      |           |                   |                |      |         |                |             | Τ    |       |          |                         | Τ             |                |               | Π |                | -                 | ΤT                | T           | ŀŢŀŢ                    |                     |                 |               |      |        |
| 90 -                |       | _                    |                  |     |               | _    |           |                   |                |      |         | _              |             | -    |       |          |                         |               | _              | $\rightarrow$ |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| 80 -                |       | _                    |                  |     |               |      |           |                   |                |      |         |                |             | +    |       | -        |                         |               |                |               |   |                |                   | $\left  \right $  |             |                         |                     |                 |               |      |        |
| 70 –                |       |                      |                  |     |               |      |           |                   | -              |      |         |                |             | _    |       |          |                         |               |                |               |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| 60 -                |       |                      |                  |     |               |      |           |                   |                |      |         |                |             |      |       |          |                         |               |                |               |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| ŭ FO                |       |                      |                  | 1   |               |      |           |                   |                |      |         |                |             |      |       |          |                         |               |                |               |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| ~ 50 -              |       |                      | Π                |     |               |      |           |                   |                |      |         |                |             |      |       |          |                         |               |                |               |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| 40 -                |       | $\top$               |                  |     |               |      |           |                   |                |      |         |                |             |      |       |          |                         |               |                |               |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| 30 -                |       |                      |                  |     |               |      |           |                   |                |      |         |                |             |      |       |          |                         |               |                |               |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| 20 -                |       |                      |                  |     |               |      |           |                   |                |      |         | -              |             | +    |       |          |                         |               |                |               |   |                |                   |                   |             |                         |                     |                 |               | +    |        |
| 10 -                |       |                      |                  | +   |               | _    |           |                   | +              |      |         | +              |             | +    |       |          |                         |               |                | _             |   |                |                   | $\left  \right $  |             |                         |                     |                 |               | +    |        |
| 0 L                 | 1     |                      |                  |     | 0.01          |      |           |                   |                |      | ).1     |                |             |      |       |          | 1                       |               |                |               |   | 10             |                   |                   |             |                         | <br>100             |                 |               |      | 100    |
| Oassification       |       | Fine                 | 9                | Ν   | <b>/edium</b> | 1    | Co        | arse              | ,              |      | Fine    |                | Me          | dium | Parti | cle<br>( | <b>Size (</b><br>Coarse | mm)           | )              | Fine          | Ν | <b>/edium</b>  | (                 | Coarse            | e           | (                       | Cobbles             |                 | Bould         | lers |        |
|                     |       |                      |                  |     | SILT          |      |           |                   |                |      |         |                | Sł          | AND  |       |          |                         |               |                |               |   | Gravel         |                   |                   |             |                         |                     |                 |               |      |        |
| Classificati        | on    | % <b>o</b> `         | f eac            | h   |               |      | S         | Size              | •              |      | %       | 6 Fir          | ner         |      |       | F        |                         | Siz           | e              |               | % | Finer          |                   | F                 |             | Unif                    | formity             | / Coe           | efficie       | ent  |        |
| CLAY                |       |                      | 23               |     |               |      | 12        | 5 r<br>0 r<br>5 r | nm<br>nm<br>nm |      |         | 10<br>10<br>10 | 0           |      |       |          |                         | 63<br>20<br>6 | μn<br>μn<br>μn | n<br>n<br>n   |   | 72<br>69<br>55 |                   | -                 |             |                         | Not                 | Availa          | able          |      |        |
| SILT                |       |                      | 49               |     |               |      | 6<br>5    | 3 r<br>0 r        | nm<br>nm       |      |         | 10<br>10       | 0           |      |       |          |                         | 2             | μn             | n             |   | 23             |                   | F                 |             |                         | Sievin<br>W         | g Me<br>et sie  | thod<br>ve    |      |        |
| SAND                |       |                      | 14               |     |               |      | 37.<br>2  | 5 r<br>0 r        | nm<br>nm       |      |         | 10<br>99       | 0<br>9      |      |       |          |                         |               |                |               |   |                |                   |                   |             | Fin                     | e Parti             | cle A           | naly          | sis  |        |
|                     |       |                      |                  |     |               |      | 1         | 4 r<br>0 r        | nm<br>nm       |      |         | 98<br>95       | 3           |      |       |          |                         |               |                |               |   |                |                   | +                 | Me          | tho                     | d<br>atod           | Pip<br>Hyc      | ette<br>droae | en   |        |
| GRAVEL              |       |                      | 14               |     |               |      | 6.        | 3r<br>5r<br>2r    | nm<br>nm<br>nm |      |         | 92<br>91<br>84 | ∠<br>1<br>5 |      |       |          |                         |               |                |               |   |                |                   |                   | r-re<br>wit | ויפ<br>h                | aie0                | Per             | oxide         | 9    |        |
| COBBLES             |       |                      | 0                |     |               |      | 1.1<br>60 | – '<br>8 r<br>0 µ | nm<br>1 m      |      |         | 84<br>81       | -<br>1<br>1 |      |       |          |                         |               |                |               |   |                |                   |                   | %<br>Pre    | oss<br>e-tre            | on<br>atmen         | 0.0             | 0             |      |        |
| BOULDER             | S     |                      | 0                |     |               |      | 30<br>15  | 0  <br>0          | um<br>um       |      |         | 79<br>76       | 9<br>6      |      |       |          |                         |               |                |               |   |                |                   |                   | Pa<br>De    | rticle<br>nsit <u>y</u> | e<br>y              | 2.6<br>(As      | 5<br>sume     | ed)  |        |
|                     |       |                      |                  |     |               |      |           |                   |                |      |         |                |             |      |       |          |                         |               |                |               |   |                |                   |                   |             |                         |                     |                 |               |      |        |
| emarks              | Siev  | e:-Tes               | st per           | for | ned i         | n ac | cord      | dan               | cev            | with | BS E    | EN I           | SO          | 178  | 92-   | 4:2      | 016                     |               |                |               |   |                |                   |                   |             |                         |                     |                 |               | 27   | /01/20 |

| roject: A                 | 303 AMESBUR<br>2C197708        | RY TO BEI   | RWICK DOV        | VN - PHASE 7A  | COUN  | TESS                      |            |   |          | Hole<br>Samp<br>Samp<br>Samp | ole C<br>ole T<br>ole F | ept<br>ype<br>lef | WS<br>h 4.6<br>B<br>C30 | 672402<br>0-6.00m<br>0792 | ו         |            |
|---------------------------|--------------------------------|-------------|------------------|----------------|-------|---------------------------|------------|---|----------|------------------------------|-------------------------|-------------------|-------------------------|---------------------------|-----------|------------|
| Sample Des<br>CHALK, recc | scription<br>vered as slightly | v sandy gra | avelly silt.     |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 100                       |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 90                        |                                |             |                  |                | +++++ |                           |            |   |          | $\mathbb{A}$                 |                         |                   |                         |                           |           |            |
| 80                        |                                |             |                  |                |       |                           |            |   |          | /                            |                         |                   |                         |                           |           |            |
| 70                        |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 70                        |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 60 —                      |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| <sup>ui</sup> 50          |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 40                        |                                |             |                  |                | +++++ |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 30                        |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 20                        |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 20                        |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 10                        |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |
| 0<br>0.001                |                                | 0.01        |                  | 0.1            |       | 1                         |            |   | <br>10   |                              |                         |                   | 100                     |                           |           | <br>  <br> |
| assification              | Fine                           | Medium      | Coarse           | Fine Mediu     | m (   | <b>Size (mr</b><br>Coarse | i)<br>Fine | 9 | Nediun   | ı Q                          | oarse                   | (                 | bbbles                  | Bo                        | ulders    |            |
| U.A                       | r                              | SILT        |                  | SAN            | )     |                           |            |   | Grave    |                              |                         |                   |                         |                           |           |            |
| lassification             | % of each                      |             | Size             | % Finer        | ] [   | Si                        | ze         | q | % Fine   | r                            |                         | Unif              | ormity                  | Coeffic                   | cient     |            |
| CLAY                      | 15                             |             | 125 mm<br>100 mm | 100            |       | 63<br>20                  | μm<br>μm   |   | 45<br>48 |                              |                         |                   | Not A                   | Available                 | 9         |            |
| SII T                     | 30                             |             | 75 mm<br>63 mm   | 100            |       | 6                         | μm<br>μm   |   | 39<br>15 |                              | -                       | :                 | Sieving<br>We           | <b>Metho</b><br>t sieve   | d         |            |
|                           |                                | -           | 37.5 mm          | 100            |       |                           |            |   |          |                              |                         | Fine              | e Partic                | le Anal                   | ysis      |            |
| SAND                      | 17                             | +           | 14 mm            | 85             |       |                           |            |   |          |                              | М                       | ethoo             |                         | Pipette                   | 9         |            |
| GRAVEL                    | 38                             |             | 6.3 mm           | 70<br>72<br>69 |       |                           |            |   |          |                              | Pr<br>wi                | e-tre<br>th       | ated                    | Hydrog<br>Peroxid         | gen<br>de |            |
| COBBLES                   | 0                              |             | 2 mm<br>1.18 mm  | 62<br>58       |       |                           |            |   |          |                              | %                       | loss              | on                      | 0.00                      |           |            |
| BOULDERS                  | 0                              |             | 600 μm<br>300 μm | 54<br>51       |       |                           |            |   |          |                              | Pa                      | article           |                         | 2.65                      | mod       |            |
|                           |                                |             | 150 μm           | 40             |       |                           |            | 1 |          |                              |                         | SI SIL)           |                         | 1,1000                    |           |            |
|                           |                                |             |                  |                |       |                           |            |   |          |                              |                         |                   |                         |                           |           |            |

| roject:<br>roject N | A30              | 3 AME                   | SBU                 | RY  | ТОВ    | ERW             | ICK                  | DC               | 1WC  | N - PH     | IASE             | E 7A | CO   | JN.   | TESS         |            |          |    |   |     | + 5 5 5  | lole<br>Sam<br>Sam<br>Sam | ple<br>ple<br>ple | De<br>Ty<br>Re | ept<br>/pe<br>ef | W<br>h 1.<br>B<br>C | /S72<br>.00-1<br>3015  | 403<br>.20m<br>7 | I     |        |
|---------------------|------------------|-------------------------|---------------------|-----|--------|-----------------|----------------------|------------------|------|------------|------------------|------|------|-------|--------------|------------|----------|----|---|-----|----------|---------------------------|-------------------|----------------|------------------|---------------------|------------------------|------------------|-------|--------|
| Sample<br>MADE      | e Desci<br>GROUN | <b>riptio</b><br>D: Cre | o <b>n</b><br>am ai | nd  | brown  | very s          | sanc                 | dy ve            | erys | silty g    | ravel            |      |      |       |              |            |          |    |   |     |          |                           |                   |                |                  |                     |                        |                  |       |        |
| 100                 |                  |                         |                     |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            |          |    |   |     |          |                           |                   | И              | <b>.</b>         |                     |                        |                  |       |        |
| 90                  | ,                |                         |                     |     |        |                 |                      |                  |      |            | _                |      |      |       |              |            |          |    |   |     |          |                           |                   |                |                  |                     | _                      |                  |       |        |
| 80                  |                  |                         |                     |     |        |                 | _                    |                  |      |            |                  |      |      |       |              |            | _        |    |   |     |          | $\downarrow$              |                   |                |                  |                     |                        |                  |       |        |
| 70                  | ,                |                         |                     |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            |          |    |   |     | /        |                           |                   |                |                  |                     |                        |                  |       |        |
| 60                  |                  |                         |                     |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            |          |    | 4 | 1   |          |                           |                   |                |                  |                     |                        |                  |       |        |
| Eine<br>20 %        | ,                |                         |                     |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            | 1        |    |   |     |          |                           |                   |                |                  |                     |                        |                  |       |        |
| 40                  | ,                |                         |                     |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            |          |    |   |     |          |                           |                   |                |                  |                     |                        |                  |       |        |
| 30                  |                  |                         |                     |     |        |                 | _                    | _                |      |            |                  |      |      |       |              |            |          |    |   |     |          |                           |                   |                |                  |                     |                        |                  |       |        |
| 20                  | ,                |                         |                     |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            |          |    |   |     |          |                           |                   |                |                  |                     |                        |                  |       |        |
| 10                  |                  |                         | 1                   |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            |          |    |   |     |          |                           |                   |                |                  |                     |                        |                  |       |        |
| 0                   |                  |                         |                     |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            |          |    |   |     |          |                           |                   |                |                  |                     |                        |                  |       |        |
| 0                   | .001             | Fine                    |                     | 0.  | .01    |                 | Darec                | <u> </u>         | 0    | <b>).1</b> | _                | Madi | Par  | ticle | 1<br>Size (r | nm)        | 6        | 20 |   | 1   | 0        |                           | Darec             |                |                  | 100<br>obbles       |                        | Ba               | Idare | 10     |
|                     | CLAY             | 1110                    |                     |     | SILT   |                 |                      | ,                |      |            |                  | SAN  | D    |       |              |            |          |    |   | G   | ravel    |                           |                   |                |                  |                     |                        |                  |       |        |
| Classific           | ation            | % of                    | each                | 1   | [      | ę               | Size                 | ,                |      | %          | Fine             | er   |      | [     | :            | Size       | •        |    | 9 | % F | iner     |                           |                   | ι              | Jnif             | ormit               | y Co                   | effic            | ient  |        |
| CLAY                |                  |                         | 8                   |     |        | 12<br>10<br>7   | 25 r<br>)0 r<br>75 r | nm<br>nm         |      |            | 100<br>100       |      |      |       | 2            | 53  <br>20 | μm<br>μm |    |   | 2   | 32<br>28 |                           |                   |                |                  | 1                   | 922.                   | 19               |       |        |
| SILT                |                  |                         | 24                  |     |        | ,<br>6<br>5     | 53 r<br>50 r         | nm<br>nm         |      |            | 100<br>100<br>97 |      |      |       |              | 2          | μm       |    |   | I   | 8        |                           | +                 |                |                  | Sievir<br>W         | n <b>g M</b><br>/et si | etho<br>eve      | d     |        |
| SAND                |                  |                         | 21                  |     |        | 37.<br>2        | .5 r<br><u>2</u> 0 r | nm<br>nm         |      |            | 91<br>80         |      |      |       |              |            |          |    |   |     |          |                           |                   | F              | Fine             | e Part              | icle                   | Anal             | ysis  |        |
|                     |                  |                         | 47                  |     |        | 1<br>1<br>6     | 4 r<br> 0 r<br> 3 r  | nm<br>nm<br>nm   |      |            | 75<br>68<br>63   |      |      |       |              |            |          |    |   |     |          |                           |                   | Met<br>Pre     | hod              | ated                | Pi<br>Hy               | pette<br>/drog   | jen   |        |
| GRAVE               | L                |                         | 4/                  |     |        | 0.              | 5 r<br>2 r           | nm<br>nm         |      |            | 60<br>53         |      |      |       |              |            |          |    |   |     |          |                           | v<br>k            | with           |                  | on                  | Pe                     |                  | de    |        |
| COBBLE              | ES               |                         | 0                   |     |        | 1.1<br>60<br>30 | 18 r<br>00 µ<br>00 r | nm<br>1 m<br>1 m |      |            | 49<br>45<br>41   |      |      |       |              |            |          |    |   |     |          |                           |                   | Pre<br>Par     | -trea            | atmer               | 1t 2.                  | 65               |       |        |
| BOULDI              | ERS              |                         | 0                   |     |        | 15              | 50 µ                 | ιm               |      |            | 37               |      |      |       |              |            |          |    |   |     |          |                           | L                 | Der            | nsity            |                     | (A                     | ssun             | ned)  |        |
|                     |                  |                         |                     |     |        |                 |                      |                  |      |            |                  |      |      |       |              |            |          |    |   |     |          |                           |                   |                |                  |                     |                        |                  |       |        |
| marke               | Siev             | re·-Tes                 | t nerf              | orn | ned in | accor           | dan                  | cev              | with | BS E       | N IS             | 0.17 | 7892 | 4.2   | 2016         |            |          |    |   |     |          |                           |                   |                |                  |                     |                        |                  | 2     | 7/01/; |

| roject:<br>roject No: | A303<br>PC19             | AME:<br>97708          | SBU               | IRY  | Ϋ́ΤΟ Ε | ERW         | VIC        | ΚD             | OV      | ۷N   | - PH | IAS            | SE 7        | 'A ( | COI          | JN.  | ITE | SS       |            |        |                  |              |           |      | Hol<br>San<br>San<br>San | e<br>npl<br>npl | le I<br>le 1<br>le F | De<br>Fy <sub>l</sub><br>Re | ptl<br>pe<br>f | W<br>h 3. <sup>-</sup><br>B<br>C: | S72<br>70-4<br>3080 | 403<br>.60r<br>)9 | n      |      |      |
|-----------------------|--------------------------|------------------------|-------------------|------|--------|-------------|------------|----------------|---------|------|------|----------------|-------------|------|--------------|------|-----|----------|------------|--------|------------------|--------------|-----------|------|--------------------------|-----------------|----------------------|-----------------------------|----------------|-----------------------------------|---------------------|-------------------|--------|------|------|
| Sample De             | <b>escri</b><br>hish gre | <b>ptio</b><br>ey very | <b>n</b><br>y sar | ndy  | very c | layey       | / Gl       | RAV            | /EL     |      |      |                |             |      |              |      |     |          |            |        |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
|                       |                          |                        |                   |      |        |             |            |                |         |      |      |                |             |      |              |      |     |          |            |        |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
| 100                   |                          |                        |                   |      |        |             |            |                | Π       | Π    |      | Т              |             |      |              | Π    |     |          | Τ          | Т      | Π                | Π            | $\square$ |      | Τ                        |                 | $\square$            | Ť                           | •              | <b> -</b>                         |                     |                   |        | Π    | Π    |
| 90 —                  |                          |                        | +                 |      |        |             |            |                |         |      |      |                | _           | _    |              |      |     |          |            | -      |                  |              |           |      | $\rightarrow$            | 4               |                      |                             |                |                                   |                     | _                 |        |      |      |
| 80 —                  |                          |                        |                   |      |        |             |            |                |         |      |      |                |             |      |              |      |     |          |            |        |                  |              |           | _/   | 4                        |                 |                      |                             |                |                                   |                     |                   |        |      |      |
| 70                    |                          |                        |                   |      |        |             |            |                |         |      |      |                |             |      |              |      |     |          |            |        |                  |              |           | /    |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
|                       |                          |                        |                   |      |        |             |            |                |         |      |      |                |             |      |              |      |     |          |            |        |                  | $\mathbb{R}$ | $\prod$   |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
| 60 —<br>¥             |                          |                        |                   |      |        |             |            |                |         |      |      |                |             | 1    |              |      |     |          |            | 7      |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      | Ħ    |
| іні 50 —              |                          |                        |                   |      |        |             |            |                |         |      |      |                |             | +    |              |      |     | /        |            |        |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      | ╫    |
| 40                    |                          |                        | +                 |      |        |             |            |                |         |      |      | -              | _           |      | $\downarrow$ | 1    |     |          |            | +      | $\left  \right $ |              |           |      | +                        |                 |                      | _                           |                |                                   |                     |                   |        |      | ╫    |
| 30 -                  |                          |                        |                   |      |        |             |            |                |         |      |      |                | 4           | +    |              |      |     |          |            | -      |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      | +    |
| 20 —                  |                          |                        |                   |      |        |             |            |                | -       |      |      |                |             |      |              |      |     |          |            |        |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
| 10                    | F                        |                        | T                 |      |        |             |            |                |         |      |      |                |             |      |              |      |     |          |            |        |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
|                       |                          |                        |                   |      |        |             |            |                |         |      |      |                |             |      |              |      |     |          |            |        |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
| 0 –<br>0.001          |                          |                        |                   | 0    | .01    |             | 1          |                |         | 0.   | 1    |                | I           |      | Dor          | ido  | 1   | io (mi   |            |        | 1 1              |              | 1         | D    |                          |                 |                      |                             | 1              | 00                                |                     |                   |        |      | 1(   |
| lassification         |                          | Fine                   |                   | N    | ledium | (           | Coar       | se             |         | F    | ine  |                | Me          | aiun | n            | (    | Coa | 'se      | ,          | Fina   | Э                |              | Me        | dium |                          | Coa             | rse                  |                             | Q              | obbles                            |                     | Bo                | oulder | s    |      |
|                       |                          |                        |                   |      | 3L1    |             |            |                |         |      |      |                | 34          |      | _            |      |     |          |            |        |                  |              | G         | avei |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
| Classificatio         | on                       | % of                   | eacl              | h    |        | 1           | Siz        | e<br>m         | <u></u> |      | %    | Fin            | ner         |      |              |      |     | S        | ize        | m      |                  | ò            | % F       | iner |                          |                 |                      | U                           | nifo           | ormity                            | y Co                | oeffi             | cier   | t    |      |
| CLAY                  |                          |                        | 16                |      |        | 1           | 00         | mn             | n<br>n  |      |      | 100            | )<br>)<br>) |      |              |      |     | 20<br>20 | )μ<br>)μ   | m<br>m |                  |              | 2         | 20   |                          |                 | $\left  \right $     |                             |                | Not                               | Ava                 | ilabl             | e      |      |      |
| SILT                  |                          |                        | 5                 |      |        |             | 63<br>50   | mn<br>mn       | n<br>n  |      |      | 100<br>100     | )<br>)<br>) |      |              |      |     | 2        | <u>2</u> μ | m      |                  |              | 1         | 6    |                          |                 |                      |                             | 3              | W                                 | et si               | etno<br>eve       | ba     |      |      |
| 0.0010                |                          |                        | 20                |      |        | 3           | 7.5<br>20  | mn<br>mn       | n<br>n  |      |      | 100<br>87      | )<br>,      |      |              |      |     |          |            |        |                  |              |           |      |                          |                 |                      | F                           | ine            | Parti                             | cle                 | Ana               | lysi   | s    |      |
| SAND                  |                          |                        | 32                | _    |        |             | 14<br>10   | mn<br>mn       | n<br>n  |      |      | 81<br>73       | ;           |      |              |      |     |          |            |        |                  |              |           |      |                          |                 | Μ                    | leth                        | od             |                                   | Pi                  | pett              | e      |      |      |
| GRAVEL                |                          |                        | 47                | _    |        | (           | 6.3<br>5   | mn<br>mn       | n<br>n  |      |      | 66<br>62       | 2           |      |              |      |     |          |            |        |                  |              |           |      |                          |                 | P<br>w               | re-1<br>ith                 | rea            | ated                              | Pe                  | erox              | de     |      |      |
| COBBLES               |                          |                        | 0                 |      |        | 1.          | 2<br>18.   | mn<br>mn       | n<br>n  |      |      | 53<br>48       |             |      |              |      |     |          |            |        |                  |              |           |      |                          |                 | %<br>P               | lo:<br>re-l                 | ss o<br>trea   | on<br>atmen                       | t 0.                | 00                |        |      |      |
| BOULDERS              | ; [                      |                        | 0                 |      |        | 6<br>3<br>1 | 300<br>300 | μn<br>μn<br>μn | n<br>n  |      |      | 42<br>34<br>26 |             |      |              |      |     |          |            |        |                  |              |           |      |                          |                 | P                    | arti<br>ens                 | cle<br>sitv    |                                   | 2.<br>(A            | 65<br>.ssu        | med    | )    |      |
|                       |                          |                        |                   | 1    | L      |             |            |                |         | _    |      |                |             |      | J            | l    | L   |          |            |        |                  |              |           |      |                          | l               |                      |                             | ,              |                                   | ļ                   |                   |        |      |      |
|                       |                          |                        |                   |      |        |             |            |                |         |      |      |                |             |      |              |      |     |          |            |        |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        |      |      |
| emarks AGS            | Sieve                    | -Test                  | t perf            | forr | ned in | acco        | orda       | ince           | wi      | th E | BS E | NI             | SO          | 178  | 892          | -4:2 | 201 | 6        |            |        |                  |              |           |      |                          |                 |                      |                             |                |                                   |                     |                   |        | 27/0 | 01/3 |

| Sample Description           PROBABLE MADE GROUND: Cream and brown slightly sandy slightly gravelly silt and rare roots.           100000000000000000000000000000000000  | roject:<br>roject No | A30<br>: PC    | )3 AM<br>1977( | 1ESE<br>08       | BUF  | RY T  | ГО В       | ER   | WIC               | ΚD             | 0           | WN   | l - Pł | IAS            | E 7.      | A C         | οι    | JN. | TE       | SS     |                |             |       |      |     |                | He<br>Sa<br>Sa<br>Sa | ole<br>am<br>am<br>am | ple<br>ple<br>ple | e D<br>e T<br>e R | ep<br>yp<br>ef | oth<br>e     | W:<br>0.2<br>B<br>C3 | S724<br>20-0.<br>016 | 404<br>.40n<br>8 | ı         |      |      |
|--|----------------------|----------------|----------------|------------------|------|-------|------------|------|-------------------|----------------|-------------|------|--------|----------------|-----------|-------------|-------|-----|----------|--------|----------------|-------------|-------|------|-----|----------------|----------------------|-----------------------|-------------------|-------------------|----------------|--------------|----------------------|----------------------|------------------|-----------|------|------|
| 10          | Sample I<br>PROBAE   | Desc<br>BLE MA | ripti<br>ADE ( | <b>on</b><br>GRC | JUN  | ID: ( | Crea       | ım a | nd b              | orow           | n s         | ligł | ntly s | and            | y sli     | ght         | ily g | rav | velly    | / silt | and            | d ra        | ire i | root | s.  |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | 100                  |                |                |                  |      |       |            |      |                   |                |             |      |        | <b>—</b>       |           | Т           |       | Π   |          |        |                | Т           | Т     |      |     |                |                      |                       |                   | 1                 |                |              |                      | <b>—</b>             |                  |           |      | Π    |
| No         SAND         10   | 90 -                 |                | _              | +                |      |       |            |      |                   |                |             |      |        | _              | _         |             |       |     |          |        |                |             |       |      |     |                | _                    |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| Image: stratup         Size         % Fine         Note         Size         % Fine           CLAY         16         10         10         10         10         000  | 80 -                 |                | _              |                  |      |       |            |      |                   |                |             |      |        |                |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| model         model <t< td=""><td>70 -</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td>_</td><td></td><td></td><td></td><td></td><td>_</td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td></t<>  | 70 -                 |                |                |                  |      |       |            |      |                   |                |             |      |        | _              | _         |             |       |     |          | _      |                | 1           |       |      |     |                |                      |                       |                   | _                 |                |              |                      | -                    |                  |           |      |      |
| $ \frac{1}{9} \underbrace{9}{9} \underbrace{1}{9} 1$ | 60                   |                |                |                  |      |       |            |      |                   |                |             |      |        |                | -         |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| δ         0  | Eine                 |                |                |                  |      |       |            |      |                   |                |             |      |        |                |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | ×<br>40 -            |                |                |                  |      |       |            |      |                   |                |             |      |        |                |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | 30                   |                |                |                  |      |       |            |      |                   |                |             |      |        |                |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $  | 20                   |                |                |                  |      |       |            |      |                   |                |             |      |        |                |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| $\begin{array}{c c c c c c c c } \hline \begin{tabular}{ c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$  | 20                   |                |                |                  |      |       |            |      |                   |                |             |      |        |                |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| 011111101000.0010.010.1Particle Size (mm)10100100Classification% of eachSLTSANDGravelObdiesBouldersCLAY16Size% Finer125 mm10010075 mm100100SILT38Size% FinerSize% FinerSize% Finer100100Not AvailableSILT38Size% Finer10010075 mm10063 $\mu$ m5416Sieving MethodSILT3850 mm10075 mm10063 $\mu$ m5416Sieving MethodSAND191963 mm10037.5 mm982 $\mu$ m16Sieving MethodGRAVEL275063 mm79731.18 mm69600 $\mu$ m659.009.00BOULDERS0118 mm69600 $\mu$ m5816150 $\mu$ m5816100BOULDERS00150 $\mu$ m585858585816265BOULDERS0150 $\mu$ m58585858581616COBBLES0150 $\mu$ m58585858585858COBBLES05858585858585858BOULDERS058585858585858 </td <td>10 -</td> <td></td>   | 10 -                 |                |                |                  |      |       |            |      |                   |                |             |      |        |                |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  |           |      |      |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $  | 0.00                 | 01             | 1              |                  |      | 0.0   | 1          |      |                   | 1 1            |             | 0.   | .1     |                |           |             | Parti | ide | 1<br>Siz | e (m   | n)             |             |       |      |     | 10             |                      | I                     |                   |                   |                | 10           | 0                    |                      | 1                |           |      | 100  |
| Classification% of eachSize% FinerCLAY16100 mm100 $SILT$ 38100SILT3863 mmSAND1914 mmGRAVEL2727COBBLES0118 mmBOULDERS0118 mmBOULDERS0150 $\mu$ mSame0150 $\mu$ mSame0150 $\mu$ mCOBBLES0150 $\mu$ mBOULDERS0150 $\mu$ mSame0150 $\mu$ mSame150 $\mu$ m150 $\mu$ mSa   | Classification       | 0.AY           | Fin            | ne               |      | Med   | dium<br>LT |      | Coar              | se             |             | F    | ine    |                | Mec<br>SA | dium<br>IND | ۱     | (   | Coar     | se     | Í              | Fi          | ne    |      | N   | ediun<br>Frave | ו<br>I               | C                     | bars              | e                 | -              | Cob          | bles                 |                      | Во               | ulders    | ;    |      |
| Classification         % of each         Size         % Finer         Size         % Finer         Uniformity Coefficient           CLAY         16         125 mm         100         63 $\mu$ m         54         Not Available           SILT         38         50 mm         100         64 $\mu$ m         38         Sieving Method           SILT         38         50 mm         100         64 $\mu$ m         38         Sieving Method           SAND         19         20 mm         95         14 mm         90         16         Method         Pipette           GRAVEL         27         5 mm         73 m         80         118 mm         69         118 mm         69         118 mm         69         118 mm         69         118 mm         65         0         0.00         Pre-treated with         % loss on Pre-treatment  |                      |                | 1              |                  |      | 7     | Г          |      |                   |                |             | +    |        |                |           |             | 1     | [   |          |        |                |             |       |      |     |                |                      | 7                     | Г                 |                   |                |              |                      |                      |                  |           |      |      |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | Classificat          | ion            | %0             | of ea            | ach  |       | F          |      | Siz<br>125        | ze<br>mr       | n           | ╈    | %      | Fin<br>100     | )         |             |       |     |          | 63     | ize<br>βμ      | m           |       |      | % I | -ine<br>54     | r                    |                       | -                 |                   | Uni            | ifor         | Mot .                | <b>, Co</b><br>Avai  | effi<br>lable    | eien<br>e | t    |      |
| SILT         38         50 mm         100         Wet sieve           37.5 mm         98         20 mm         95 $Method$ Pipette           SAND         19         14 mm         90 $Method$ Pipette           GRAVEL         27         6.3 mm         80 $Pre-treated$ Hydrogen           2 mm         73         5 mm         79 $Pre-treated$ $Pre-treated$ $Pre-treated$ COBBLES         0         1.18 mm         69 $0.00$ $Pre-treated$ $0.00$ BOULDERS         0         150 $\mu$ m         58 $Pre-treated$ $Particle$ 2.65   | CLAY                 |                |                | 1                | 6    | -     |            |      | 100<br>75<br>63   | mr<br>mr<br>mr | n<br>n<br>n |      |        | 100            | )<br>)    |             |       |     |          | 20     | )μ<br>3μ<br>2μ | m<br>m<br>m |       |      |     | 50<br>38<br>16 |                      |                       | ļ                 |                   |                | Si           | evin                 | g Me                 | ethc             | d         |      |      |
| SAND1920 mm95MethodPipette10 mm8610 mm86Pre-treated<br>withPre-treated<br>PeroxideHydrogen<br>PeroxideCOBBLES01.18 mm69 $0.00$ $0.00$ BOULDERS0150 $\mu$ m58 $0.00$ Particle2.65<br>Density $0.00$   | SILT                 |                |                | 3                | 88   | +     |            | 3    | 50<br>37.5        | mr<br>mr       | n<br>n      |      |        | 100<br>98      | )         |             |       |     |          | _      | •              |             |       |      |     |                |                      |                       | -                 |                   | <b></b>        |              | We                   | et sie               | eve              | wai       |      |      |
| GRAVEL2710 mm86Pre-treated<br>withHydrogen<br>PeroxideGRAVEL276.3 mm7973 $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^{\circ}$ loss on<br>Pre-treatment $^$   | SAND                 |                |                | 1                | 9    |       |            |      | 20<br>14          | mr<br>mr       | n<br>n      |      |        | 95<br>90       |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   | Me                | etho           | d d          | arti                 | Pip                  | oette            | )<br>)    | •    |      |
| COBBLES         0         2 mm         73           1.18 mm         69         600 μm         65           300 μm         61         150 μm         58   | GRAVEL               |                |                | 2                | 27   |       |            |      | 6.3<br>5          | mr             | n<br>n<br>n |      |        | 80<br>80<br>79 |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   | Pre<br>wit        | ə-tre<br>h     | eate         | ed                   | Hy<br>Pe             | dro<br>vdro      | gen<br>de |      |      |
| BOULDERS         0         600 μm         65         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         10         9         10   | COBBLES              | ;              |                |                  | 0    |       |            | 1    | 2<br>.18          | mr<br>mr       | n<br>n      |      |        | 73<br>69       |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       | ł                 | %<br>Pre          | loss<br>ə-tre  | s or<br>eatr | ו<br>ment            | 0.0                  | 00               |           |      |      |
|  | BOULDER              | s              |                |                  | 0    | 1     |            |      | 600<br>300<br>150 | μr<br>μr<br>⊔r | n<br>n<br>n |      |        | 65<br>61<br>58 |           |             |       |     |          |        |                |             |       |      |     |                |                      |                       |                   | Pa                | rticl          | le<br>tv     |                      | 2.6<br>(A            | 65<br>ssui       | ned       |      |      |
|  | <u> </u>             |                | <u> </u>       |                  |      | _1    | L          |      |                   |                |             |      |        |                |           |             | I     | Ĺ   | <u> </u> |        |                |             |       |      |     |                |                      |                       | Ĺ                 |                   |                | -            |                      | 1,                   |                  | ,         |      |      |
| Remarks Research Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016   | Remarks              | s Siev         | ve:-Te         | est p            | erfo | orme  | ed in      | acc  | orda              | Ince           | e wi        | th F | BS F   | N IS           | SO -      | 178         | 892-  | 4:2 | 201      | 6      |                |             |       |      |     |                |                      |                       |                   |                   |                |              |                      |                      |                  | 2         | 27/0 | 1/20 |

|                       | PC197            | 7708                   |         |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              | Sam<br>Sam<br>Sam | ple<br>ple<br>ple | De<br>Ty<br>Re | epti<br>vpe<br>ef | h 1.2<br>B<br>C3 | 0-2.0<br>0801    | 0m                 |     |        |
|-----------------------|------------------|------------------------|---------|---------|------------------|-------------------|----------|---------|---------|------------------|-------|------------|-------|-------|----------|----------|--------|---|---|--------------|-------------------|-------------------|----------------|-------------------|------------------|------------------|--------------------|-----|--------|
| Sample De<br>PROBABLE | escrip<br>E MADI | <b>otion</b><br>E GROL | JND     | : Light | greyis           | h br              | owr      | n sli   | ghtly s | sandy            | y sli | ghtly      | y gr  | avell | y silt   |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| 100                   |                  |                        |         |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   | ΥΓ                | Π              | ΪΠ                | <u> </u>         |                  |                    |     |        |
| 90                    |                  |                        |         |         | $\left  \right $ |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              | 4                 |                   |                |                   |                  |                  |                    |     |        |
| 80 —                  |                  |                        |         |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| 70 -                  |                  |                        |         |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| en                    |                  |                        |         |         |                  |                   |          |         |         |                  |       | 1          |       |       |          |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
|                       |                  |                        |         |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| ≝ 50 —<br>%           |                  |                        |         |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| 40                    |                  |                        | $\Pi$   |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| 30                    |                  |                        |         |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| 20                    | +/               |                        | +++     |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        | + |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| 10                    |                  |                        |         |         |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    |     |        |
| 0                     |                  |                        |         | ~       |                  |                   |          |         |         |                  |       |            |       |       |          |          |        |   |   |              |                   |                   |                |                   | <u> </u>         |                  |                    |     |        |
| Classification        |                  | Fine                   | U.<br>M | edium   | 0                | arse              |          | U.<br>F | ine.    |                  | /ediu | <b>Par</b> | ticle | Size  | (mm      | )        | Fine   |   | N | lu<br>Iedium |                   | barse             |                |                   | bbles            | 1                | Bould              | ers |        |
| a                     | AY               |                        | ę       | SILT    |                  |                   |          |         |         | 5                | SAND  | )          |       |       |          |          |        |   | ( | Gravel       |                   |                   |                |                   |                  |                  |                    |     |        |
| Classificatio         | n 9              | % of eac               | h       |         | s                | ize               |          |         | % F     | iner             | r     | ]          | [     |       | Siz      | e        |        |   | % | Finer        |                   |                   | U              | Inifo             | ormity           | Coe              | fficie             | ent |        |
| CLAY                  |                  | 12                     |         |         | 12<br>10         | 5 m<br>0 m        | nm<br>nm |         | 1<br>1  | 100<br>100       |       |            |       |       | 63<br>20 | μn<br>μn | n<br>n |   |   | 62<br>50     |                   |                   |                |                   | Not /            | Availa           | ble                |     |        |
| SILT                  |                  | 50                     |         |         | 7:<br>6:         | 5 m<br>3 m<br>0 m | nm<br>nm |         | 1       | 100              |       |            |       |       | 6<br>2   | μn<br>μn | n<br>n |   |   | 39<br>12     |                   | _                 |                | S                 | Sieving<br>We    | g Met<br>et siev | t <b>hod</b><br>/e |     |        |
|                       |                  |                        |         |         | 37.<br>2         | 5 m<br>0 m        | im<br>im |         | 1       | 100<br>100<br>93 |       |            |       |       |          |          |        |   |   |              |                   |                   | F              | ine               | Partic           | le A             | nalys              | sis |        |
| SAND                  |                  | 12                     |         |         | 1-<br>1-         | 4 m<br>0 m        | im<br>im |         |         | 87<br>83         |       |            |       |       |          |          |        |   |   |              |                   | Ν                 | /let           | hod               |                  | Pipe             | ette               |     |        |
| GRAVEL                |                  | 26                     |         |         | 6.               | 3 m<br>5 m        | nm<br>nm |         |         | 80<br>79         |       |            |       |       |          |          |        |   |   |              |                   | F                 | Pre-<br>vith   | trea              | ated             | Hyd<br>Pero      | roge<br>oxide      | n   |        |
| COBBLES               |                  | 0                      |         |         | 1.1              | 2 m<br>8 m        | nm<br>nm |         |         | 74<br>71         |       |            |       |       |          |          |        |   |   |              |                   | ۶<br>F            | % lo<br>Pre∙   | oss (<br>trea     | on<br>atment     | 0.00             | )                  |     |        |
| BOULDERS              |                  | 0                      |         |         | 30<br>30         | 0μ<br>0μ<br>0μ    | m<br>m   |         |         | 66<br>64         |       |            |       |       |          |          |        |   |   |              |                   | F                 | Parl           | ticle<br>sity     |                  | 2.65<br>(As:     | 5<br>sume          | ed) |        |
|                       | Į                |                        | ]       | L       |                  |                   |          |         |         |                  |       | _          | Ĺ     |       |          |          |        | ļ |   |              |                   | Ĺ                 |                | -                 |                  | 1                |                    |     |        |
| emarks AGS            | Sieve:-          | Test pe                | rform   | ned in  | accord           | lanc              | ew       | ith I   | BS EN   | I ISC            | ) 17  | 892        | -4:2  | 2016  | <u> </u> |          |        |   |   |              |                   |                   |                |                   |                  |                  |                    | 27/ | /01/20 |

| oject:<br>oject No:     | A303 A  | MESBL<br>708             | JRY TO I       | BERWICK DC       | WN - PHASI    | E 7A C         | OUN     | TESS            |                 |   | +<br>9<br>9<br>9 | lole<br>Samp<br>Samp<br>Samp | le D<br>le T<br>le R | ept<br>ype<br>ef | WS<br>h 3.6<br>B<br>C30 | 372404<br>0-4.50m<br>0788 | 1        |     |
|-------------------------|---------|--------------------------|----------------|------------------|---------------|----------------|---------|-----------------|-----------------|---|------------------|------------------------------|----------------------|------------------|-------------------------|---------------------------|----------|-----|
| Sample D<br>Light greer | escript | t <b>ion</b><br>clayey v | very sand      | ly GRAVEL.       |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |
| 100                     |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      | I, I, I I        | · ·                     |                           |          |     |
| 90 —                    |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              | 4                    |                  |                         |                           |          |     |
| 90                      |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |
| au –                    |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |
| 70 -                    |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |
| 60 -                    |         |                          |                |                  |               |                |         |                 |                 |   | $\parallel$      |                              |                      |                  |                         |                           |          | ╈   |
| Eine                    |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          | +++ |
| ° 40 –                  |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |
|                         |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |
| 30 —                    |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |
| 20 —                    |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          | +++ |
| 10 —                    |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          | ₩   |
| 0                       |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |
| 0.001                   | l       |                          | 0.01           |                  | 0.1           | P              | article | 1<br>Size (mn   | ו)              |   | 10               |                              |                      | 1                | 00                      |                           |          | 10  |
| lassification           |         | Fine                     | Medium<br>SILT | Coarse           | Fine          | Medium<br>SAND |         | Coarse          | Fin             | e | Medium<br>Gravel | Coa                          | arse                 |                  | obbles                  | Bou                       | ulders   |     |
|                         |         |                          |                |                  |               |                | I       |                 |                 |   |                  |                              |                      |                  |                         | 4                         |          |     |
| Classificatio           | on %    | of eac                   | h              | Size<br>125 mm   | % Fine<br>100 | ər             |         | <b>Si</b><br>63 | <b>ze</b><br>μm |   | % Finer<br>18    |                              | -                    | Unif             | ormity                  | Coeffic                   | ient     |     |
| CLAY                    |         | 3                        | _              | 100 mm<br>75 mm  | 100<br>100    |                |         | 20<br>6         | μm<br>μm        |   | 13<br>10         |                              |                      |                  | Sievinc                 | Metho                     | d        |     |
| SILT                    |         | 15                       |                | 63 mm<br>50 mm   | 100<br>100    |                |         | 2               | μm              |   | 3                |                              |                      |                  | We                      | t sieve                   | <u> </u> |     |
|                         |         | 22                       |                | 37.5 mm<br>20 mm | 92<br>81      |                |         |                 |                 |   |                  |                              |                      | Fine             | Partic                  | le Anal                   | ysis     |     |
| SAND                    |         | 33                       | -              | 14 mm<br>10 mm   | 71<br>63      |                |         |                 |                 |   |                  |                              | Me                   | ethod            |                         | Pipette                   | )<br>    |     |
| GRAVEL                  |         | 49                       |                | 6.3 mm<br>5 mm   | 57<br>56      |                |         |                 |                 |   |                  |                              | Pr<br>wit            | e-trea<br>h      | ated                    | Peroxic                   | de       |     |
| COBBLES                 |         | 0                        |                | 2 mm<br>1.18 mm  | 51<br>48      |                |         |                 |                 |   |                  |                              | %<br>Pr              | loss<br>e-trea   | on<br>atment            | 0.00                      |          |     |
| BOULDERS                | 5       | 0                        |                | 600 μm<br>300 μm | 44 37         |                |         |                 |                 |   |                  |                              | Pa                   | rticle           |                         | 2.65                      | ned)     |     |
|                         |         |                          |                | μπ               | 20            |                | l       |                 |                 | _ |                  |                              |                      | - ISILY          |                         | 1,10001                   |          |     |
|                         |         |                          |                |                  |               |                |         |                 |                 |   |                  |                              |                      |                  |                         |                           |          |     |

### LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test BH72402 A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS **Project:** Hole Sample Depth 17.50-17.95m UT Sample Type Project No: PC197708 C30812 Sample Ref The following samples were combined to perform this test: Sample Description See Detailed Sample Description BS1377 Part 8 1990 : Clause 9.0 1200 1000 800 Deviator Stress kN/m<sup>2</sup> 600 400 200

|   | 1   | 0  |   |
|---|-----|----|---|
| s | tra | in | % |

6

8

12

14

16

18

2 0

|   | Stage 1      | Stage 2      | Stage 3      | Strain<br>% | Corrected<br>Deviator<br>Stress kN/m <sup>2</sup> | Strain<br>%  | Corrected<br>Deviator<br>Stress kN/m <sup>2</sup> |
|---|--------------|--------------|--------------|-------------|---|--------------|---|
| Sample Condition                                  |              | Undisturbed  |              | 0.2         | 11.4  | 10.0         | 572.4   |
| Orientation of sample                             |              | Vertical     |              | 0.5         | 28.1  | 10.5         | 573.3   |
| Initial Diameter (mm)                             | 102.89       | 102.89       | 102.89       | 0.7         | 74.3<br>106.3                                     | 10.9         | 574.0<br>574.5                                    |
| Initial Length (mm)                               | 210.48       | 210.48       | 210.48       | 1.4         | 162.1   | 11.4         | 575.6   |
| Initial Water Content (%)                         | 26.7         | 26.7         | 26.7         | 1.9         | 211.5   | 12.4         | 577.1   |
| Initial Bulk Density (Mg/m <sup>3</sup> )         | 1.99         | 1.99         | 1.99         | 2.4         | 256.3   | 12.8         | 577.3   |
| Initial Dry Density (Mg/m <sup>3</sup> )          | 1.57         | 1.57         | 1.57         | 2.9         | 300.3   | 13.3         | 577.3   |
| Particle Density (Mg/m <sup>3</sup> )             |              |              |              | 3.3         | 340.1   | 13.8         | 575.8   |
| Cell Pressure (kPa)                               | 170          | 340          | 680          | 3.8         | 3/1.3   | 14.3         | 575.0   |
| 'Specimen Height' at start (mm) of Shearing Stage |              |              |              | 4.3         | 408.8   | 14.7         | 574.0<br>775.4                                    |
| Membrane<br>Thickness/Correction (mm/kPa)         | 0.30 / 0.78  | 0.30 / 0.94  | 0.30 / 0.94  | 5.2<br>5.7  | 471.2<br>494.9                                    | 15.7<br>16.2 | 822.4<br>817.3                                    |
| Rate of Strain (%/min)                            | 1.95         | 1.95         | 1.95         | 6.2         | 512.2   | 16.6         | 1010.7  |
| Corrected Deviator Stress (kPa)                   | 577          | 822          | 1101         | 6.7         | 528.2   | 17.1         | 1100.8  |
| Undrained Shear Strength (kPa)                    | 289          | 411          | 550          | 7.1         | 537.6   | 17.6         | 1045.8  |
| Strain at Failure (%)                             | 12.8         | 15.7         | 17.1         | 7.6         | 547.4   |              |   |
| Failure Zone Water Content (%)                    |              |              |              | 86          | 558 6   |              |   |
| Water Content (after test) (%)                    |              |              |              | 9.0         | 563.0   |              |   |
| Mode of Failure                                   | Intermediate | Intermediate | Intermediate | 9.5         | 567.2   |              |   |

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# LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test Project: A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS Hole BH72402 Project No: PC197708 Sample Depth Sample Ref 19.50-19.95m C30811



|   | _           |             |             | Strain | Corrected | Strain | Corrected |
|---|-------------|-------------|-------------|--------|-----------|--------|-----------|
|   | Stage 1     | Stage 2     | Stage 3     | %      | Deviator  | %      | Deviator  |
| Sample Condition                          |             | Undisturbed |             | 0.5    | 3.9       | 20.5   | 57.5      |
|   |             | Vortical    |             | 1.0    | 6.2       | 21.5   | 59.0      |
|   |             | Ventical    |             | 1.5    | 7.5       | 22.5   | 60.1      |
| Initial Diameter (mm)                     | 209.63      | 209.63      | 209.63      | 2.0    | 9.2       | 23.5   | 61.2      |
| Initial Length (mm)                       | 102.34      | 102.34      | 102.34      | 2.9    | 12.0      | 24.4   | 61.8      |
| Initial Water Content (%)                 | 24.4        | 24.4        | 24.4        | 3.9    | 14.9      | 25.4   | 62.5      |
| Initial Bulk Density (Mg/m <sup>3</sup> ) | 0.98        | 0.98        | 0.98        | 4.9    | 17.9      | 26.4   | 63.1      |
| Initial Dry Density (Mg/m <sup>3</sup> )  | 0.79        | 0.79        | 0.79        | 5.9    | 20.3      | 27.4   | 63.6      |
| Particle Density (Mg/m <sup>3</sup> )     |             |             |             | 6.8    | 23.6      | 28.3   | 63.8      |
| Cell Pressure (kPa)                       | 190         | 380         | 760         | 7.8    | 26.3      | 29.3   | 64.1      |
| Specimen Height' at start                 | 100         | 000         | /00         | 8.8    | 29.6      | 30.3   | 64.1      |
| of Shearing Stage (mm)                    |             |             |             | 9.8    | 32.1      | 31.3   | 64.1      |
| Membrane (mm/kPa)                         | 0.31 / 0.79 | 0.31 / 0.84 | 0.31 / 0.93 | 10.7   | 35.2      | 32.2   | 74.3      |
| Thickness/Correction                      |             |             |             | 11.7   | 37.7      | 33.2   | /3./      |
| Rate of Strain (%/min)                    | 1.95        | 1.95        | 1.95        | 12.7   | 40.4      | 34.2   | 72.7      |
| Corrected Deviator Stress (kPa)           | 64          | 74          | 82          | 13.7   | 43.1      | 35.2   | 72.0      |
| Undrained Shear Strength (kPa)            | 32          | 37          | 41          | 14./   | 45.9      | 36.2   | 82.0      |
| Strain at Failure (%)                     | 30.3        | 32.3        | 36.2        | 15.6   | 48.0      | 37.1   | 80.0      |
| Failure Zone Water Content (%)            |             | 1           |             | 16.6   | 50.1      |        |           |
| Water Content (after test) (%)            |             |             |             | 17.6   | 52.5      |        |           |
| Made of Failure                           | Disstic     | Disstic     | Disatis     | 18.6   | 54.4      |        |           |
| Mode of Failure                           | Plastic     | Plastic     | Plastic     | 19.5   | 56.2      |        |           |

Remarks AGS

Geotechnics

### LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS BH72404 **Project:** Hole Sample Depth 15.55-16.00m UT Sample Type Project No: PC197708 C30566 Sample Ref The following samples were combined to perform this test: Sample Description CHALK. BS1377 Part 8 1990 : Clause 9.0 900 800 700 600 Deviator Stress kN/m<sup>2</sup> 500 400 300 200 100 0 12 14 2 4 6 10 16 8 Strain %

|   |              |              |              | Strain     | Corrected                            | Strain | Corrected                            |
|---|--------------|--------------|--------------|------------|--------------------------------------|--------|--------------------------------------|
|   | Stage 1      | Stage 2      | Stage 3      | %          | Deviator<br>Stress kN/m <sup>2</sup> | %      | Deviator<br>Stress kN/m <sup>2</sup> |
| Sample Condition                          |              | Undisturbed  |              | 0.3        | 13.4                                 | 10.9   | 366.3                                |
| Orientation of sample                     |              | Vertical     |              | 0.5        | 63.2                                 | 11.4   | 370.5                                |
| Initial Diameter (mm)                     | 103.83       | 103.83       | 103.83       | 0.8        | 112.7                                | 12.0   | 373.2                                |
| Initial Length (mm)                       | 192.16       | 192.16       | 192.16       | 1.0        | 146.4                                | 12.5   | 530 1                                |
| Initial Water Content (%)                 | 29.7         | 29.7         | 29.7         | 2.1        | 208.4                                | 13.5   | 588.0                                |
| Initial Bulk Density (Mg/m <sup>3</sup> ) | 1.84         | 1.84         | 1.84         | 2.6        | 226.0                                | 14.1   | 581.2                                |
| Initial Dry Density (Mg/m <sup>3</sup> )  | 1.42         | 1.42         | 1.42         | 3.1        | 239.6                                | 14.6   | 823.7                                |
| Particle Density (Mg/m <sup>3</sup> )     |              |              |              | 3.6        | 257.4                                | 15.1   | 767.0                                |
| Cell Pressure (kPa)                       | 150          | 300          | 600          | 4.2        | 273.8                                |        |                                      |
| 'Specimen Height' at start (mm)           |              |              |              | 4.7<br>5.2 | 284.2<br>299.0                       |        |                                      |
| Membrane<br>Thickness/Correction (mm/kPa) | 0.32 / 0.76  | 0.32 / 0.88  | 0.32 / 0.94  | 5.7<br>6.2 | 310.5<br>321.0                       |        |                                      |
| Rate of Strain (%/min)                    | 1.95         | 1.95         | 1.95         | 6.8        | 328.7                                |        |                                      |
| Corrected Deviator Stress (kPa)           | 373          | 588          | 824          | 7.3        | 334.1                                |        |                                      |
| Undrained Shear Strength (kPa)            | 187          | 294          | 412          | 7.8        | 340.4                                |        |                                      |
| Strain at Failure (%)                     | 12.0         | 13.5         | 14.6         | 8.3        | 345.7                                |        |                                      |
| Failure Zone Water Content (%)            |              |              |              | 9.0        | 356.2                                |        |                                      |
| Water Content (after test) (%)            |              |              |              | 9.9        | 360.8                                |        |                                      |
| Mode of Failure                           | Intermediate | Intermediate | Intermediate | 10.4       | 365.4                                |        |                                      |

Remarks AGS



### LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS BH72404 **Project:** Hole Sample Depth 18.80-19.25m UT Sample Type Project No: PC197708 C30815 Sample Ref The following samples were combined to perform this test: Sample Description CHALK. BS1377 Part 8 1990 : Clause 9.0 400 350 300 Deviator Stress kN/m<sup>2</sup> 0 0 5 7 0 0 0 2 0 0 0 2 0 100 50 0 6 10 12 2 8 14 Strain %

|  | Stage 1     | Stage 2     | Stage 3     | Strain     | Corrected<br>Deviator    | Strain | Corrected<br>Deviator    |
|--|-------------|-------------|-------------|------------|--------------------------|--------|--------------------------|
|  |             | ge _        |             | %          | Stress kN/m <sup>2</sup> | %      | Stress kN/m <sup>2</sup> |
| Sample Condition                                     |             | Undisturbed |             | 0.2        | 19.4                     | 10.0   | 319.4                    |
| Orientation of sample                                |             | Vertical    |             | 0.5        | 38.7                     | 10.5   | 310.4                    |
| Initial Diameter (mm)                                | 102.79      | 102.79      | 102.79      | 1.0        | 60.4<br>82.5             | 10.9   | 327.3<br>319.5           |
| Initial Length (mm)                                  | 210.40      | 210.40      | 210.40      | 1.4        | 119.1                    | 11.9   | 340.6                    |
| Initial Water Content (%)                            | 26.8        | 26.8        | 26.8        | 1.9        | 144.5                    | 12.4   | 327.1                    |
| Initial Bulk Density (Mg/m <sup>3</sup> )            | 2.01        | 2.01        | 2.01        | 2.4        | 167.1                    |        |                          |
| Initial Dry Density (Mg/m <sup>3</sup> )             | 1.58        | 1.58        | 1.58        | 2.9        | 187.0                    |        |                          |
| Particle Density (Mg/m <sup>3</sup> )                |             |             |             | 3.3        | 207.9                    |        |                          |
| Cell Pressure (kPa)                                  | 190         | 380         | 760         | 3.8        | 223.5                    |        |                          |
| 'Specimen Height' at start<br>of Shearing Stage (mm) |             |             |             | 4.3        | 241.5<br>255.4           |        |                          |
| Membrane<br>Thickness/Correction (mm/kPa)            | 0.33 / 0.73 | 0.33 / 0.79 | 0.33 / 0.79 | 5.2<br>5.7 | 264.0<br>269.8           |        |                          |
| Rate of Strain (%/min)                               | 1.95        | 1.95        | 1.95        | 6.2        | 275.8                    |        |                          |
| Corrected Deviator Stress (kPa)                      | 319         | 327         | 341         | 6.7        | 283.2                    |        |                          |
| Undrained Shear Strength (kPa)                       | 160         | 164         | 170         | 7.1        | 286.6                    |        |                          |
| Strain at Failure (%)                                | 10.0        | 10.9        | 11.9        | 7.0        | 292.5                    |        |                          |
| Failure Zone Water Content (%)                       |             |             |             | 86         | 290.9<br>301 3           |        |                          |
| Water Content (after test) (%)                       |             |             |             | 9.0        | 307.5                    |        |                          |
| Mode of Failure                                      | Brittle     | Brittle     | Brittle     | 9.5        | 315.1                    |        |                          |

Remarks AGS



### LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS BH72404 **Project:** Hole Sample Depth 20.40-20.85m UT Sample Type Project No: PC197708 C30814 Sample Ref The following samples were combined to perform this test: Sample Description CHALK. BS1377 Part 8 1990 : Clause 9.0 1000 900 800 700 Deviator Stress kN/m<sup>2</sup> 600 500 400 300 200 100 0 10 12 14 6 16 2 4 8 Strain %

|   | Stage 1      | Stage 2      | Stage 3      | Strain<br>% | Corrected<br>Deviator<br>Stress kN/m <sup>2</sup> | Strain<br>% | Corrected<br>Deviator<br>Stress kN/m <sup>2</sup> |
|---|--------------|--------------|--------------|-------------|---|-------------|---|
| Sample Condition                          |              | Undisturbed  |              | 0.2         | 13.8  | 10.0        | 700.5   |
| Orientation of sample                     |              | Vertical     |              | 0.5         | 34.7  | 10.4        | 702.2   |
| Initial Diameter (mm)                     | 102.84       | 102.84       | 102.84       | 0.7         | /5.6<br>119.8                                     | 10.9        | 705.5   |
| Initial Length (mm)                       | 210.83       | 210.83       | 210.83       | 1.4         | 187.4   | 11.9        | 707.0   |
| Initial Water Content (%)                 | 26.9         | 26.9         | 26.9         | 1.9         | 238.6   | 12.3        | 853.4   |
| Initial Bulk Density (Mg/m <sup>3</sup> ) | 2.03         | 2.03         | 2.03         | 2.4         | 296.7   | 12.8        | 826.4   |
| Initial Dry Density (Mg/m <sup>3</sup> )  | 1.60         | 1.60         | 1.60         | 2.8         | 355.8   | 13.3        | 941.5   |
| Particle Density (Mg/m <sup>3</sup> )     |              |              |              | 3.3         | 413.9   | 13.8        | 909.7   |
| Cell Pressure (kPa)                       | 200          | 400          | 800          | 3.8         | 465.7   |             |   |
| 'Specimen Height' at start (mm)           |              |              |              | 4.3         | 509.6<br>546.2                                    |             |   |
| Membrane<br>Thickness/Correction (mm/kPa) | 0.34 / 0.82  | 0.34 / 0.88  | 0.34 / 0.94  | 5.2<br>5.7  | 571.1<br>593.9                                    |             |   |
| Rate of Strain (%/min)                    | 1.95         | 1.95         | 1.95         | 6.2         | 607.0   |             |   |
| Corrected Deviator Stress (kPa)           | 707          | 853          | 941          | 6.6         | 622.2   |             |   |
| Undrained Shear Strength (kPa)            | 354          | 427          | 471          | 7.1         | 634.8   |             |   |
| Strain at Failure (%)                     | 11.4         | 12.3         | 13.3         | 7.6         | 647.7   |             |   |
| Failure Zone Water Content (%)            |              |              |              | 85          | 676.6   |             |   |
| Water Content (after test) (%)            |              |              |              | 9,0         | 682.0   |             |   |
| Mode of Failure                           | Intermediate | Intermediate | Intermediate | 9.5         | 693.0   |             |   |

Remarks AGS



### LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS BH72406 Hole **Project:** Sample Depth 19.50-19.95m UT Sample Type Project No: PC197708 C30564 Sample Ref The following samples were combined to perform this test: Sample Description CHALK. BS1377 Part 8 1990 : Clause 8.0 300 250

) 12 Strain %

10

14

16

18

2 0

2 2

|   | Stage 1     | Stage 2     | Stage 3 | Strain<br>% | Corrected<br>Deviator<br>Stress kN/m <sup>2</sup> | Strain<br>%  | Corrected<br>Deviator<br>Stress kN/m <sup>2</sup> |
|---|-------------|-------------|---------|-------------|---|--------------|---|
| Sample Condition                          |             | Undisturbed |         | 0.2         | 16.8  | 10.0         | 140.5   |
| Orientation of sample                     |             | Vertical    |         | 0.5         | 24.8  | 10.5         | 146.2   |
| Initial Diameter (mm)                     | 100.41      | 100.41      | 100.41  | 0.7         | 30.3<br>34.4                                      | 11.0         | 151.2   |
| Initial Length (mm)                       | 209.60      | 209.60      | 209.60  | 1.0         | 43.1  | 11.9         | 160.2   |
| Initial Water Content (%)                 | 30.3        | 30.3        | 30.3    | 1.9         | 51.5  | 12.4         | 166.3   |
| Initial Bulk Density (Mg/m <sup>3</sup> ) | 1.95        |             |         | 2.4         | 59.1  | 12.9         | 171.5   |
| Initial Dry Density (Mg/m <sup>3</sup> )  | 1.50        |             |         | 2.9         | 65.6  | 13.4         | 177.9   |
| Particle Density (Mg/m <sup>3</sup> )     |             |             |         | 3.3         | 71.2  | 13.8         | 182.6   |
| Cell Pressure (kPa)                       | 190         |             |         | 3.8         | 77.0  | 14.3         | 188.8   |
| 'Specimen Height' at start (mm)           |             |             |         | 4.3<br>4.8  | 82.4<br>88.2                                      | 14.8<br>15.3 | 196.0<br>201.4                                    |
| Membrane<br>Thickness/Correction (mm/kPa) | 0.31 / 1.11 | 0.31 /      | 0.31 /  | 5.2<br>5.7  | 91.4<br>97.8                                      | 15.7<br>16.2 | 204.9<br>213.1                                    |
| Rate of Strain (%/min)                    | 1.95        | 1.95        | 1.95    | 6.2         | 102.6   | 16.7         | 221.1   |
| Corrected Deviator Stress (kPa)           | 250         |             |         | 6.7         | 106.0   | 17.2         | 227.0   |
| Undrained Shear Strength (kPa)            | 125         |             |         | 7.2         | 111.6   | 17.7         | 232.8   |
| Strain at Failure (%)                     | 19 (excess) |             |         | 7.6         | 117.6   | 18.1         | 240.4   |
| Failure Zone Water Content (%)            | . ,         |             |         | 8.1         | 122.5   | 18.6         | 245.3   |
| Water Content (after test) (%)            |             |             |         | 0.0         | 120.1   | 19.1         | 249.6   |
| Mode of Failure                           | Plastic     | Plastic     | Plastic | 9.5         | 135.1   |              |   |

Remarks AGS

200

100

50

0

2

4

6

8



# LABORATORY RESULTS - Consolidation e/logp Plot

Project

Client

A303 Amesbury to Berwick Down - Phase 7A Countess

Project No PC197708 Borehole BH72402 Sample Depth 18.50 - 18.95 m





### Project **Project No** PC197708 A303 Amesbury to Berwick Down - Phase 7A Countess Borehole BH72404 Sample Depth 14.05 - 14.50 m Client Sample Type UT Symbols: Voids Ratio $\bullet$ ,c<sub>v50</sub> $\blacktriangle$ ,c<sub>v90</sub> $\triangle$ 0.775 0.765 0.755 50 Voids<sub>G</sub>Ratio (*e*) 745 40 30 0.735 c<sub>v</sub> (m<sup>2</sup>/year) 20 0.725 10 0.715 Δ 7 0 0.705 10000 10 100 1000 Applied Effective Pressure p (kN/m<sup>2</sup>) kN/m<sup>2</sup> 200-400 400-800 800-1600 1600-100 100-200 200-400 Applied Pressure 0-100 100-200 m<sup>2</sup>/MN 0.04 0.04 0.03 0.02 .00 0.01 .00 0.14 m<sub>v</sub> c<sub>v50</sub> Log Time m²/yr -8.85 5.35 0.60 2.16 --\_ 34.38 22.71 2.42 9.03 c<sub>v90</sub> Root Time m²/yr --0.706 0.710 0.709 0.709 Voids Ratio 0.776 0.769 0.755 0.735 Description Specimen Diameter 74.800 Initial Water Content 30.36 % mm % C30567 CHALK Initial Height Final Water Content 28.34 18.840 mm % Particle Density 2.65 Assumed Initial Saturation 100 Mg/m<sup>3</sup> Initial Voids Ratio 0.801 Initial Bulk Density 1.92 Mg/m<sup>3</sup> 1.47 Initial Dry Density Laboratory temperature 20°C ± 3°C Remarks Specimen cut vertically from base of sample فعوالعوسيع Test performed in accordance with BS EN ISO 17892-5:2017

### **Project No** PC197708 Project A303 Amesbury to Berwick Down - Phase 7A Countess **Borehole** BH72405 Sample Depth 14.50 - 14.95 m Client Sample Type UT Symbols: Voids Ratio $\bullet$ , $c_{v50}$ $\blacktriangle$ , $c_{v90}$ $\bigtriangleup$ 0.66 0.65 0.64 2.0 Voids Ratio (*C*) <sup>290</sup> 1.6 1.2 0.62 c<sub>v</sub> (m<sup>2</sup>/year) 0.61 0.8 0.4 0.60 0.59 0 10 100 1000 10000 Applied Effective Pressure p (kN/m<sup>2</sup>) kN/m² 100-200 200-400 400-800 800-1600 1600-100 100-200 200-400 0-100 **Applied Pressure** m<sup>2</sup>/MN 0.38 0.06 0.04 0.02 0.02 .00 -.00 .00 m<sub>v</sub> c<sub>v50</sub> Log Time m²/yr -0.25 0.15 0.05 0.05 \_ -0.30 m<sup>2</sup>/yr 0.59 0.19 0.19 -1.23 $c_{v90}$ Root Time -1.05 -0.664 0.654 0.641 0.628 0.603 0.606 0.606 0.606 Voids Ratio Specimen Diameter 74.550 Initial Water Content % Description 29.05 mm % Final Water Content C30565 CHALK Initial Height 18.930 mm 23.67 % Particle Density 2.65 Assumed Initial Saturation 100 Mg/m<sup>3</sup> Initial Bulk Density 1.98 Initial Voids Ratio 0.730 Mg/m<sup>3</sup> 1.53 Initial Dry Density Laboratory temperature 20°C ± 3°C Remarks Specimen cut vertically from base of sample eeleetnies Test performed in accordance with BS EN ISO 17892-5:2017

# Project **Project No** PC197708 A303 Amesbury to Berwick Down - Phase 7A Countess Borehole BH72406 A Sample Depth 18.50 - 18.95 m Client Sample Type UT Symbols: Voids Ratio $\ {\mbox{\circ}}\ , {\mbox{c}}_{\rm v50}\ {\mbox{\land}}\ , {\mbox{c}}_{\rm v90}\ {\mbox{\bigtriangleup}}$ 0.70 0.69 0.68 10 Voids Ratio (*C*) <sup>290</sup> 8 0.66 6





# LABORATORY RESULTS - Point Load Strength Determination

Project A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

Project No: PC197708

| Sample  | )                                    |                          |                                    |   |         |                   |                 |                      |                      |                          |                       |                         |                         |                         |
|---------|--------------------------------------|--------------------------|------------------------------------|---|---------|-------------------|-----------------|----------------------|----------------------|--------------------------|-----------------------|-------------------------|-------------------------|-------------------------|
| Hole    | Depth<br>(Specimen                   | Туре                     | Sample<br>Ref                      | Description   | w<br>o/ | W                 | D               | Load                 | Test<br>Type/        | De                       | De <sup>2</sup>       | ls<br>MN/m <sup>2</sup> | F                       | $ls_{50}$               |
|         | Depth)<br>M                          |                          |                                    |   | 70      |                   |                 | KIN                  | Direction            |                          | 11111                 | IVIIN/ITI               |                         | IVIIN/TTI               |
| BH72403 | 18.42-<br>18.49<br>(18.42-<br>18.49) | С                        | C30461                             | CHALK.  | 26.0    | 100               | 68              | 0.64                 | A/PD                 | 93.05                    | 8658                  | 0.073                   | 1.323                   | 0.097                   |
| BH72501 | 23.60-<br>23.77<br>(23.60-<br>23.77) | С                        | C30776                             | CHALK.  | 26.9    | 95<br>95<br>95    | 95<br>92<br>74  | 0.24<br>0.67<br>0.30 | D/PL<br>A/PD<br>A/PD | 95.00<br>105.49<br>94.61 | 9025<br>11128<br>8951 | 0.027<br>0.060<br>0.033 | 1.335<br>1.399<br>1.332 | 0.035<br>0.085<br>0.044 |
| BH72501 | 26.97-<br>27.15<br>(26.97-<br>27.15) | С                        | C30777                             | CHALK.  | 27.2    | 100<br>100<br>100 | 100<br>76<br>59 | 0.54<br>0.33<br>0.82 | D/PL<br>A/PD<br>A/PD | 100.00<br>98.37<br>86.67 | 10000<br>9677<br>7512 | 0.054<br>0.035<br>0.109 | 1.366<br>1.356<br>1.281 | 0.073<br>0.047<br>0.140 |
| BH72502 | 17.67-<br>17.75<br>(17.67-<br>17.75) | С                        | C30780                             | CHALK.  | 25.7    | 100<br>99<br>99   | 99<br>64<br>59  | 0.73<br>0.57<br>0.48 | D/PL<br>A/PD<br>A/PD | 99.00<br>89.82<br>86.24  | 9801<br>8067<br>7437  | 0.074<br>0.071<br>0.064 | 1.360<br>1.302<br>1.278 | 0.101<br>0.092<br>0.082 |
| BH72502 | 19.35-<br>20.50<br>(19.35-<br>20.50) | С                        | C30783                             | CHALK.  | 26.5    | 100<br>100<br>100 | 100<br>64<br>39 | 0.73<br>0.64<br>0.68 | D/PL<br>A/PD<br>A/PD | 100.00<br>90.27<br>70.47 | 10000<br>8149<br>4966 | 0.073<br>0.078<br>0.136 | 1.366<br>1.305<br>1.167 | 0.100<br>0.102<br>0.159 |
| BH72504 | 21.79-<br>21.96<br>(21.79-<br>21.96) | С                        | C30464                             | CHALK.  | 27.2    | 100<br>100<br>100 | 100<br>78<br>75 | 0.63<br>0.54<br>0.62 | D/PL<br>A/PD<br>A/PD | 100.00<br>99.66<br>97.72 | 10000<br>9931<br>9549 | 0.063<br>0.055<br>0.065 | 1.366<br>1.364<br>1.352 | 0.087<br>0.075<br>0.088 |
| Remar   | ks 👪                                 | Test                     | Туре                               | D - Diametral, A - Axial, I - Lump or Ir  | regular | Test              |                 |                      |                      |                          |                       |                         |                         |                         |
|         |                                      | Direc<br>Fail L<br>For S | tion P<br>P<br>.oad l<br>Standards | L - parallel to planes of weakness, R<br>D - perpendicular to planes of weakn<br>JF - unacceptable failure<br>followed see Laboratory Test Certific | - Rande | om or un          | known o         | rientati             | on,                  | Geote                    | Chnical and           | d geoenviro             | HN<br>onmental s        | CS<br>pecialists        |



19-Dec-19

Certificate Number 19-25385

Client Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP

- Our Reference 19-25385
- Client Reference PC197708
  - Order No AUTH-OL23840
  - Contract Title A303 Amesbury to Berwick Down
  - Description 4 Soil samples, 7 Water samples.
  - Date Received 11-Dec-19
  - Date Started 11-Dec-19
- Date Completed 19-Dec-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



Adam Fenwick Contracts Manager



Derwentside Environmental Testing Services Limited Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY Tel: 01207 582333 • email: info@dets.co.uk



# Summary of Chemical Analysis Soil Samples

*Our Ref* 19-25385 *Client Ref* PC197708 *Contract Title* A303 Amesbury to Berwick Down

|                                 |             |      | Lab No    | 1611840   | 1611841   | 1611842  | 1611843   |
|---------------------------------|-------------|------|-----------|-----------|-----------|----------|-----------|
|                                 |             | S    | ample ID  | STP72401  | STP72402  | STP72403 | STP72404  |
|                                 |             |      | Depth     | 0.50-0.60 | 0.50-0.60 | 0.50     | 0.50-0.60 |
|                                 |             |      | Other ID  |           |           |          |           |
|                                 |             | Sam  | ple Type  | D         | D         | D        | D         |
|                                 |             | Samp | ling Date | 25/11/19  | 25/11/19  | 25/11/19 | 26/11/19  |
|                                 |             | Samp | ling Time | n/s       | n/s       | n/s      | n/s       |
| Test                            | Method      | LOD  | Units     |           |           |          |           |
| Inorganics                      |             |      |           |           |           |          |           |
| рН                              | DETSC 2008# |      | pН        | 8.4       | 8.2       | 8.2      | 8.4       |
| Sulphate Aqueous Extract as SO4 | DETSC 2076# | 10   | mg/l      | 26        | < 10      | 20       | 13        |
# *i* DETS

# **Summary of Chemical Analysis**

# Water Samples

Our Ref 19-25385 Client Ref PC197708 Contract Title A303 Amesbury to Berwick Down

|                 | Lab No      |               | 1611833  | 1611834  | 1611835  | 1611836  | 1611837  | 1611838  |          |
|-----------------|-------------|---------------|----------|----------|----------|----------|----------|----------|----------|
|                 | Sample ID B |               | BH72402  | BH72403  | BH72405  | BH72406  | BH72501  | BH72501  |          |
|                 |             | Depth         |          | 2.20     | 2.54     | 3.30     | 3.70     | 1.34     | 4.75     |
|                 | Other ID    |               |          |          |          |          |          |          |          |
|                 |             | Sample Type   |          | W        | W        | W        | W        | W        | W        |
|                 |             | Sampling Date |          | 21/11/19 | 19/11/19 | 27/11/19 | 25/11/19 | 26/11/19 | 26/11/19 |
|                 |             | Sampl         | ing Time | n/s      | n/s      | n/s      | n/s      | n/s      | n/s      |
| Test            | Method      | LOD           | Units    |          |          |          |          |          |          |
| Inorganics      |             |               |          |          |          |          |          |          |          |
| рН              | DETSC 2008  |               | рН       | 7.2      | 7.2      | 7.3      | 7.3      | 7.6      | 7.3      |
| Sulphate as SO4 | DETSC 2055  | 0.1           | mg/l     | 11000    | 16000    | 16000    | 14000    | 13000    | 14000    |



# **Summary of Chemical Analysis**

# Water Samples

Our Ref 19-25385 Client Ref PC197708

Contract Title A303 Amesbury to Berwick Down

|                 | <br>       | -     |           |          |
|-----------------|------------|-------|-----------|----------|
|                 |            |       | Lab No    | 1611839  |
|                 |            | S     | ample ID  | BH72504  |
|                 |            |       | Depth     | 2.25     |
|                 |            |       | Other ID  |          |
|                 |            | Sam   | ple Type  | W        |
|                 |            | Samp  | ling Date | 18/11/19 |
|                 |            | Sampl | ing Time  | n/s      |
| Test            | Method     | LOD   | Units     |          |
| Inorganics      |            |       |           |          |
| рН              | DETSC 2008 |       | рН        | 7.4      |
| Sulphate as SO4 | DETSC 2055 | 0.1   | mg/l      | 14000    |



# Information in Support of the Analytical Results

*Our Ref* 19-25385 *Client Ref* PC197708 *Contract* A303 Amesbury to Berwick Down

## **Containers Received & Deviating Samples**

|              |                               | Date     |                            |                                 | Inappropriate<br>container for |
|--------------|-------------------------------|----------|----------------------------|---------------------------------|--------------------------------|
| Lab No       | Sample ID                     | Sampled  | <b>Containers Received</b> | Holding time exceeded for tests | tests                          |
| 1611833      | BH72402 2.20 WATER            | 21/11/19 | GB 1L                      | pH/Cond/TDS (1 days)            |                                |
| 1611834      | BH72403 2.54 WATER            | 19/11/19 | GB 1L                      | pH/Cond/TDS (1 days)            |                                |
| 1611835      | BH72405 3.30 WATER            | 27/11/19 | PT 1L                      | pH/Cond/TDS (1 days)            |                                |
| 1611836      | BH72406 3.70 WATER            | 25/11/19 | GB 1L                      | pH/Cond/TDS (1 days)            |                                |
| 1611837      | BH72501 1.34 WATER            | 26/11/19 | GB 1L                      | pH/Cond/TDS (1 days)            |                                |
| 1611838      | BH72501 4.75 WATER            | 26/11/19 | PT 1L                      | pH/Cond/TDS (1 days)            |                                |
| 1611839      | BH72504 2.25 WATER            | 18/11/19 | GB 1L                      | pH/Cond/TDS (1 days)            |                                |
| 1611840      | STP72401 0.50-0.60 SOIL       | 25/11/19 | PT 1L                      | pH + Conductivity (7 days)      |                                |
| 1611841      | STP72402 0.50-0.60 SOIL       | 25/11/19 | PT 1L                      | pH + Conductivity (7 days)      |                                |
| 1611842      | STP72403 0.50 SOIL            | 25/11/19 | PT 1L                      | pH + Conductivity (7 days)      |                                |
| 1611843      | STP72404 0.50-0.60 SOIL       | 26/11/19 | PT 1L                      | pH + Conductivity (7 days)      |                                |
| Koun C. Clas | o D. Dottlo D. Diostio T. Tub |          |                            |                                 |                                |

Key: G-Glass B-Bottle 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



19-Dec-19

## Certificate Number 19-25387

Client Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP

- Our Reference 19-25387
- Client Reference PC197708
  - Order No AUTH-OL23841
  - Contract Title A303 Amesbury to Berwick Down
  - Description One Soil sample.
  - Date Received 11-Dec-19
  - Date Started 11-Dec-19
- Date Completed 19-Dec-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



Adam Fenwick Contracts Manager





Our Ref 19-25387 Client Ref PC197708 Contract Title A303 Amesbury to Berwick Down

|                              |                | Lab No    | 1611845   |
|------------------------------|----------------|-----------|-----------|
|                              | S              | ample ID  | BH72405   |
|                              |                | Depth     | 3.50-3.60 |
|                              |                | Other ID  |           |
|                              | Sam            | ple Type  | D         |
|                              | Samp           | ling Date | n/s       |
|                              | Samp           | ling Time | n/s       |
| Test M                       | lethod LOD     | Units     |           |
| Inorganics                   |                |           |           |
| Loss on Ignition at 440oC DE | TSC 2003# 0.01 | %         | 4.1       |



# Information in Support of the Analytical Results

*Our Ref* 19-25387 *Client Ref* PC197708 *Contract* A303 Amesbury to Berwick Down

## **Containers Received & Deviating Samples**

|   |   | Date   |   |   | Inappropriate container for   |
|---|---|--|---|---|---|
| Lab No  | Sample ID   | Sampled  | <b>Containers Received</b>  | Holding time exceeded for tests   | tests   |
| 1611845   | BH72405 3.50-3.60 SOIL  |  | PT 1L   | Sample date not supplied, Loss on Ignition (730 days)   |   |
| Key: P-Plasti<br>DETS cannot<br>be deviating<br>Deviating Sa<br>etc are devia<br>no sampled | c T-Tub<br>t be held responsible for the<br>g. Deviating Sample criteria ar<br>imples'. All samples received<br>ating due to the reasons state<br>date (soils) or date+time (wa | integrity of sar<br>re based on Bri<br>are listed abov<br>ed. This means<br>ters) has been | nples received whereby the labo<br>itish and International standards<br>ve. However, those samples that<br>that the analysis is accredited w<br>supplied then samples are devia | pratory did not undertake the sampling. In this instance sa<br>and laboratory trials in conjunction with the UKAS note '<br>have additional comments in relation to hold time, inap<br>here applicable, but results may be compromised due to<br>ating. However, if you are able to supply a sampled date ( | imples received may<br>Guidance on<br>propriate containers<br>sample deviations. If<br>and time for waters) |

#### **Soil Analysis Notes**

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

#### Disposal

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



## Certificate Number 19-25622

Client Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP

- Our Reference 19-25622
- Client Reference PC197708
  - Order No OC23614
  - Contract Title A303 Amesbury tp Berwick Down Phase 7a
  - Description One Soil sample.
  - Date Received 13-Dec-19
  - Date Started 13-Dec-19
- Date Completed 16-Dec-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



Adam Fenwick Contracts Manager



16-Dec-19



Our Ref 19-25622 Client Ref PC197708

Contract Title A303 Amesbury tp Berwick Down Phase 7a

| contract intic  | / Sos / incsbury tp i |            | nuse /u | _       |          |
|-----------------|-----------------------|------------|---------|---------|----------|
|                 |                       |            |         | Lab No  | 1613342  |
|                 |                       |            | Sar     | mple ID | STP72502 |
|                 |                       |            |         | Depth   | 1.00     |
|                 |                       |            | 0       | ther ID |          |
|                 |                       |            | Samp    | le Type | ES       |
|                 |                       |            | Sampliı | ng Date | 28/11/19 |
|                 |                       |            | Samplir | ng Time | n/s      |
| Test            |                       | Method     | LOD     | Units   |          |
| Preparation     |                       |            |         |         |          |
| Moisture Conter | nt                    | DETSC 1004 | 0.1     | %       | 21       |
|                 |                       |            |         |         |          |



# Information in Support of the Analytical Results

*Our Ref* 19-25622 *Client Ref* PC197708 *Contract* A303 Amesbury tp Berwick Down Phase 7a

## **Containers Received & Deviating Samples**

|         |                    |          |                             | Holding time | Inappropriate |
|---------|--------------------|----------|-----------------------------|--------------|---------------|
|         |                    | Date     |                             | exceeded for | container for |
| Lab No  | Sample ID          | Sampled  | Containers Received         | tests        | tests         |
| 1613342 | STP72502 1.00 SOIL | 28/11/19 | GJ 250ml, GJ 60ml x3, 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**

lnorganic soil analysis was carried out on a dried sample, crushed to pass a 425μm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

#### Disposal

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



## Certificate Number 19-25728

Client Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP

- Our Reference 19-25728
- Client Reference PC197708
  - Order No AUTH-OL23900
  - Contract Title A303 Amesbury to Berwick Down
  - Description 3 Soil samples, 2 Water samples.
  - Date Received 16-Dec-19
- Date Started 16-Dec-19
- Date Completed 02-Jan-20
- 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



Adam Fenwick Contracts Manager



02-Jan-20



Our Ref 19-25728 Client Ref PC197708 Contract Title A303 Amesbury to Berwick Down

|                                 |             |      | Lab No    | 1613925  | 1613926   | 1613927   |
|---------------------------------|-------------|------|-----------|----------|-----------|-----------|
|                                 |             | S    | ample ID  | WS72402  | WS72403   | WS72404   |
|                                 |             |      | Depth     | 1.50     | 2.00-3.70 | 2.00-3.60 |
|                                 |             |      | Other ID  |          |           |           |
|                                 |             | Sam  | ple Type  | D        | В         | В         |
|                                 |             | Samp | ling Date | 13/12/19 | 13/12/19  | 13/12/19  |
|                                 |             | Samp | ling Time | n/s      | n/s       | n/s       |
| Test                            | Method      | LOD  | Units     |          |           |           |
| Inorganics                      |             |      |           |          |           |           |
| рН                              | DETSC 2008# |      | pН        | 8.6      | 8.1       | 8.6       |
| Sulphate Aqueous Extract as SO4 | DETSC 2076# | 10   | mg/l      | < 10     | 12        | 12        |



# Summary of Chemical Analysis Water Samples

Our Ref 19-25728 Client Ref PC197708 Contract Title A303 Amesbury to Berwick Down

|                 |            |       | Lab No   | 1613928  | 1613929  |
|-----------------|------------|-------|----------|----------|----------|
|                 |            | Sa    | ample ID | BH72404  | BH72502  |
|                 |            |       | Depth    | 3.20     | 3.60     |
|                 |            |       | Other ID |          |          |
|                 |            | Sam   | ple Type | w        | W        |
|                 |            | Samp  | ing Date | 13/12/19 | 13/12/19 |
|                 |            | Sampl | ing Time | n/s      | n/s      |
| Test            | Method     | LOD   | Units    |          |          |
| Inorganics      |            |       |          |          |          |
| рН              | DETSC 2008 |       | pН       | 7.8      | 7.2      |
| Sulphate as SO4 | DETSC 2055 | 0.1   | mg/l     | 25       | 28       |



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# Information in Support of the Analytical Results

*Our Ref* 19-25728 *Client Ref* PC197708 *Contract* A303 Amesbury to Berwick Down

## **Containers Received & Deviating Samples**

|         |                        | Date     |                            |                                 | container for |
|---------|------------------------|----------|----------------------------|---------------------------------|---------------|
| Lab No  | Sample ID              | Sampled  | <b>Containers Received</b> | Holding time exceeded for tests | tests         |
| 1613925 | WS72402 1.50 SOIL      | 13/12/19 | PT 1L                      |                                 |               |
| 1613926 | WS72403 2.00-3.70 SOIL | 13/12/19 | PT 1L                      |                                 |               |
| 1613927 | WS72404 2.00-3.60 SOIL | 13/12/19 | PT 1L                      |                                 |               |
| 1613928 | BH72404 3.20 WATER     | 13/12/19 | PT 1L                      | pH/Cond/TDS (1 days)            |               |
| 1613929 | BH72502 3.60 WATER     | 13/12/19 | GB 1L                      | pH/Cond/TDS (1 days)            |               |

Key: P-Plastic T-Tub G-Glass B-Bottle

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

## UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

|                  |                   | Sample deta                | ils  |            | Density Uniaxial Compression Test (LF0879C (1000 |                     |                | (1000kN)                    | compression                 | n frame used) |                            |  |                   |                  |                 |
|------------------|-------------------|----------------------------|--|------------|--|---------------------|----------------|-----------------------------|-----------------------------|---------------|----------------------------|--|-------------------|------------------|-----------------|
| Borehole<br>Ref. | Sample Ref.       | Depth (m)                  | Description                                      | MC<br>(%)  | Degree of<br>Saturation<br>(%)                   | Bulk<br>(Mg/m³)     | Dry<br>(Mg/m³) | Mean af<br>Diameter<br>(mm) | ter prep.<br>Height<br>(mm) | H/D<br>Ratio  | Load at<br>Failure<br>(kN) | UCS<br>(MPa)<br><sup>3 sig. fig.</sup> | Failure<br>Sketch |                  | Remarks         |
| BH72504          |                   | 23.30-<br>23.52            | White CHALK                                      | 26         | 96.9   | 1.97                | 1.57           | 99.60                       | 200.20                      | 2.0           | 20.5                       | 2.63                                   | 07/01/20          |                  |                 |
| BH72504          |                   | 28.48-<br>28.70            | White CHALK                                      | 18         | 79.2   | 1.99                | 1.69           | 101.40                      | 222.10                      | 2.2           | 26.3                       | 3.26                                   | 07/01/20          |                  |                 |
| BH72504          |                   | 29.58-<br>30.08            | White CHALK                                      | 24         | 92.2   | 1.96                | 1.58           | 100.60                      | 259.50                      | 2.6           | 18.9                       | 2.38                                   | 07/01/20          |                  |                 |
|                  |                   |                            |  |            |  |                     |                |                             |                             |               |                            |  |                   |                  |                 |
|                  |                   |                            |  |            |  |                     |                |                             |                             |               |                            |  |                   |                  |                 |
|                  |                   |                            |  |            |  |                     |                |                             |                             |               |                            |  |                   |                  |                 |
|                  |                   |                            |  |            |  |                     |                |                             |                             |               |                            |  |                   |                  |                 |
|                  |                   |                            |  |            |  |                     |                |                             |                             |               |                            |  |                   |                  |                 |
|                  |                   |                            |  |            |  |                     |                |                             |                             |               |                            |  |                   |                  |                 |
|                  |                   |                            |  |            |  |                     |                |                             |                             |               |                            |  |                   |                  |                 |
| Note: The dime   | nsional requireme | nts of flatness (<0.02 mm) | , perpendicularity (<0.05 / 50 mm) and straightn | ess (0.3 m | m deviation)                                     | are not me          | et. Specific ( | Gravity used                | for Degree                  | of Satura     | ation is assu              | imed unle                              | ess specifie      | d by the client. |                 |
| Checked and      | Approved by       | Project Number:            |  |            |  |                     |                |                             |                             |               |                            |  |                   |                  | GEOLABS         |
| C Clergeaud (    | Snr. Geologist)   | Project Name:              | A303 Am  | esbur      | GEC<br>y to Be                                   | ) / 3039<br>rwick I | 95<br>Down -   | Phase                       | 7A GI                       |               |                            |  |                   |                  |                 |
| Date:            | 09/01/2020        |                            |  |            | PC   | 19//08              | 5              |                             |                             |               |                            |  |                   |                  | TESTING<br>1982 |



## UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.: Sample Ref.: Depth (m):

BH72504 23.30-23.52 Description: White CHALK

| Diameter                     |                  | 99.60 mm                        |
|------------------------------|------------------|---------------------------------|
| Height                       |                  | 200.20 mm                       |
| Bulk Density                 |                  | 1.97 Mg/m <sup>3</sup>          |
| Dry Density                  |                  | 1.57 Mg/m <sup>3</sup>          |
| Water Content                |                  | 26 %                            |
| Degree of Saturation: 96.9 % | Specific Gravity | 2.7 Mg/m <sup>3</sup> (Assumed) |

Specific Gravity: 2.7 Mg/m<sup>3</sup> (Assumed)

## **Test results**

**Poisson's Ratio** (secant at 10% failure load)

1

Date:

| Unconfined Compressive Strength  | 2.63 MPa |
|----------------------------------|----------|
| Young's Modulus                  | n/a      |
| (tangential at 50% failure load) | 11/d     |
| Poisson's Ratio                  | nla      |
| (tangential at 50% failure load) | 11/d     |
| Young's Modulus                  | n/a      |
| (secant at 10% failure load)     | 11/d     |
| Poisson's Ratio                  | n/a      |
| (secant at 10% failure load)     | 11/a     |





Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX Client : Geotechnics Limited, The Geotechnical Centre, 203 Torrington Ave, Tile Hill, Coventry, CV4 9UT



## **UNCONFINED COMPRESSIVE STRENGTH**

Borehole Ref.: Sample Ref.: Depth (m): BH72504 -28.48-28.70 Description: White CHALK

| Diameter                     |                  | 101.40 mm                         |
|------------------------------|------------------|-----------------------------------|
| Height                       |                  | 222.10 mm                         |
| Bulk Density                 |                  | 1.99 Mg/m <sup>3</sup>            |
| Dry Density                  |                  | 1.69 Mg/m <sup>3</sup>            |
| Water Content                |                  | 18 %                              |
| Degree of Saturation: 79.2 % | Specific Gravity | : 2.7 Mg/m <sup>3</sup> (Assumed) |

## **Test results**

Young's Modulus

**Poisson's Ratio** 

Young's Modulus

**Poisson's Ratio** 

(secant at 10% failure load)

(tangential at 50% failure load)

(tangential at 50% failure load)

**Unconfined Compressive Strength** 







Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX Client : Geotechnics Limited, The Geotechnical Centre, 203 Torrington Ave, Tile Hill, Coventry, CV4 9UT



## **UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS**



BH72504 29.58-30.08 Description: White CHALK

| Diameter                     |               | 100.60 mm                          |
|------------------------------|---------------|------------------------------------|
| Height                       |               | 259.50 mm                          |
| Bulk Density                 |               | 1.96 Mg/m <sup>3</sup>             |
| Dry Density                  |               | 1.58 Mg/m <sup>3</sup>             |
| Water Content                |               | 24 %                               |
| Degree of Saturation: 92.2 % | Specific Grav | ity: 2.7 Mg/m <sup>3</sup> (Assume |

Specific Gravity: 2.7 Mg/m<sup>3</sup> (Assumed)

## **Test results**

(secant

2.5

| Unconfined Compressive Strength  | 2.38 MPa  |
|----------------------------------|-----------|
| Young's Modulus                  | 1 07 CPa  |
| (tangential at 50% failure load) | 1.07 GFa  |
| Poisson's Ratio                  | 2/2       |
| (tangential at 50% failure load) | 1/2       |
| Young's Modulus                  | 1 69 C Do |
| (secant at 10% failure load)     | 1.00 GFa  |
| Poisson's Ratio                  | n/a       |
| (secant at 10% failure load)     | 11/8      |





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      | Project Number:                             |         |
|------------------------------|---|---------|
| CC                           | GEO / 30395                                 | ®       |
| 00                           | Project Name:                               | GEOLABS |
| C Clergeaud (Snr. Geologist) | A303 Amesbury to Berwick Down - Phase 7A GI |         |
| Date: 09/01/2020             | PC197708                                    |         |

Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX Client : Geotechnics Limited, The Geotechnical Centre, 203 Torrington Ave, Tile Hill, Coventry, CV4 9UT

## UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

|                        |                               | Sa  | mple details  |            |                                | Dei             | nsity          | Un                          | iaxial Corr                 | pressio      | on Test (L                 | F0879C                                 | (1000k            | N) compression      | frame used) |
|------------------------|-------------------------------|---|---|------------|--------------------------------|-----------------|----------------|-----------------------------|-----------------------------|--------------|----------------------------|--|-------------------|---------------------|-------------|
| Borehole<br>Ref.       | Sample Ref.                   | Depth (m)   | Description   | MC<br>(%)  | Degree of<br>Saturation<br>(%) | Bulk<br>(Mg/m³) | Dry<br>(Mg/m³) | Mean at<br>Diameter<br>(mm) | ter prep.<br>Height<br>(mm) | H/D<br>Ratio | Load at<br>Failure<br>(kN) | UCS<br>(MPa)<br><sup>3 sig. fig.</sup> | Failure<br>Sketch | D. Tested           | Remarks     |
| BH72501                |                               | 25.48-<br>25.70   | White CHALK   | 26         | 100                            | 2.08            | 1.65           | 95.40                       | 189.30                      | 2.0          | 20.4                       | 2.85                                   |                   | 07/01/20            |             |
| BH72501                |                               | 29.86-<br>30.26   | White CHALK   | 24         | 100                            | 2.03            | 1.63           | 97.60                       | 243.80                      | 2.5          | 26.3                       | 3.52                                   |                   | 07/01/20            |             |
| BH72502                |                               | 25.70-<br>25.95   | White CHALK   | 27         | 100                            | 2.00            | 1.57           | 99.70                       | 252.70                      | 2.5          | 28.5                       | 3.65                                   |                   | 07/01/20            |             |
| BH72502                |                               | 27.40-<br>27.70   | White CHALK   | 24         | 91.7                           | 1.97            | 1.59           | 96.60                       | 237.50                      | 2.5          | 17.3                       | 2.36                                   | $\square$         | 07/01/20            |             |
| BH72502                |                               | 29.46-<br>29.77   | White CHALK   | 27         | 95.5                           | 1.94            | 1.52           | 100.80                      | 205.80                      | 2.0          | 13.3                       | 1.67                                   |                   | 07/01/20            |             |
|                        |                               |   |   |            |                                |                 |                |                             |                             |              |                            |  |                   |                     |             |
|                        |                               |   |   |            |                                |                 |                |                             |                             |              |                            |  |                   |                     |             |
|                        |                               |   |   |            |                                |                 |                |                             |                             |              |                            |  |                   |                     |             |
|                        |                               |   |   |            |                                |                 |                |                             |                             |              |                            |  |                   |                     |             |
|                        |                               |   |   |            |                                |                 |                |                             |                             |              |                            |  |                   |                     |             |
| Note: The dime         | nsional requireme             | nts of flatness   | (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightne | ess (0.3 m | m deviation)                   | are not me      | t. Specific (  | Gravity used                | for Degree                  | of Satura    | tion is assu               | umed unle                              | ess speci         | fied by the client. |             |
| Checked and            | Approved by                   | Project Nu  | mber:   |            |                                |                 |                |                             |                             |              |                            |  |                   |                     | GEOLABS     |
| С                      | .C                            | GEO / 30396   |   |            |                                |                 |                |                             |                             |              |                            |  |                   |                     |             |
| C Clergeaud (<br>Date: | Snr. Geologist)<br>09/01/2020 | A303 Amesbury to Berwick Down - Phase 7A GI<br>PC197708 |   |            |                                |                 |                |                             |                             |              |                            |  |                   |                     |             |



## UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.: Sample Ref.: Depth (m):

BH72501 25.48-25.70

**Unconfined Compressive Strength** 

Description: White CHALK

| Diameter                    |                  | 95.40 mm                         |
|-----------------------------|------------------|----------------------------------|
| Height                      |                  | 189.30 mm                        |
| Bulk Density                |                  | 2.08 Mg/m <sup>3</sup>           |
| Dry Density                 |                  | 1.65 Mg/m <sup>3</sup>           |
| Water Content               |                  | 26 %                             |
| Degree of Saturation: 100 % | Specific Gravity | : 2.7 Mg/m <sup>3</sup> (Assumed |

## **Test results**

Young's Modulus (tangential at 50% failure load)

**Poisson's Ratio** 

Young's Modulus

**Poisson's Ratio** (secant at 10% failure load)

1

0.9

(secant at 10% failure load)

(tangential at 50% failure load)

| <br>     |
|----------|
| 2.85 MPa |
| n/a      |
| n/a      |
| n/a      |
| n/a      |



0.8 0.7 Axial Stress (MPa) 0.6 0.5 0.4 0.3 0.2 0.1 0 0 0.5 1 1.5 2 2.5 3 3.5 4 Radial and Axial Microstrain (µe) Test Rate: 4.00 kN/s - 0.56 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 Project Number: **GEOLABS** GEO / 30396 Project Name: A303 Amesbury to Berwick Down - Phase 7A GI C Clergeaud (Snr. Geologist) PC197708 Date: 09/01/2020

Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX Client : Geotechnics Limited, The Geotechnical Centre, 203 Torrington Ave, Tile Hill, Coventry, CV4 9UT 4.5

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

## **UNCONFINED COMPRESSIVE STRENGTH**

Borehole Ref .: Sample Ref.: Depth (m):

BH72501 29.86-30.26 Description: White CHALK

| Diameter                    |                | 97.60 mm                           |
|-----------------------------|----------------|------------------------------------|
| Height                      |                | 243.80 mm                          |
| Bulk Density                |                | 2.03 Mg/m <sup>3</sup>             |
| Dry Density                 |                | 1.63 Mg/m <sup>3</sup>             |
| Water Content               |                | 24 %                               |
| Degree of Saturation: 100 % | Specific Gravi | ty: 2.7 Mg/m <sup>3</sup> (Assumed |

## **Test results**

**Poisson's Ratio** (secant at 10% failure load)

1

| Unconfined Compressive Strength  | 3.52 MPa |
|----------------------------------|----------|
| Young's Modulus                  | n/a      |
| (tangential at 50% failure load) | n/a      |
| Poisson's Ratio                  | n/o      |
| (tangential at 50% failure load) | n/a      |
| Young's Modulus                  | n/a      |
| (secant at 10% failure load)     | n/a      |
| Poisson's Ratio                  | n/a      |
| (secant at 10% failure load)     | 11/a     |





| Checked and Approved by      | Project Number:                             | <b>GEOLABS</b> <sup>®</sup> |
|------------------------------|---|-----------------------------|
| CC                           | GEO / 30396<br>Project Name:                |                             |
| C Clergeaud (Snr. Geologist) | A303 Amesbury to Berwick Down - Phase 7A GI |                             |
| Date: 09/01/2020             | PC197708                                    | UKAS<br>TESTING<br>1982     |

Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX Client : Geotechnics Limited, The Geotechnical Centre, 203 Torrington Ave, Tile Hill, Coventry, CV4 9UT ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

## UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.: Sample Ref.: Depth (m):

BH72502 25.70-25.95 Description: White CHALK

| Diameter                    |                  | 99.70 mm                          |
|-----------------------------|------------------|-----------------------------------|
| Height                      |                  | 252.70 mm                         |
| Bulk Density                |                  | 2.00 Mg/m <sup>3</sup>            |
| Dry Density                 |                  | 1.57 Mg/m <sup>3</sup>            |
| Water Content               |                  | 27 %                              |
| Degree of Saturation: 100 % | Specific Gravity | : 2.7 Mg/m <sup>3</sup> (Assumed) |

Specific Gravity: 2.7 Mg/m<sup>3</sup> (Assumed)

MPa

n/a

n/a

n/a

n/a

## **Test results**

1

Date:

09/01/2020

(secant at 10% failure load)

| Unconfined Compressive Strength  | 3.65 |
|----------------------------------|------|
| Young's Modulus                  |      |
| (tangential at 50% failure load) |      |
| Poisson's Ratio                  |      |
| (tangential at 50% failure load) |      |
| Young's Modulus                  |      |
| (secant at 10% failure load)     |      |
| Poisson's Ratio                  |      |
| (secant at 10% failure load)     |      |





PC197708

Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX Client : Geotechnics Limited, The Geotechnical Centre, 203 Torrington Ave, Tile Hill, Coventry, CV4 9UT



Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX Client : Geotechnics Limited. The Geotechnical Centre. 203 Torrington Ave. Tile Hill, Coventry, CV4 9UT



## UNCONFINED COMPRESSIVE STRENGTH

Borehole Ref.: Sample Ref.: Depth (m):

BH72502 29.46-29.77

**Unconfined Compressive Strength** 

Description: White CHALK

| Diameter                     |                  | 100.80 mm                          |
|------------------------------|------------------|------------------------------------|
| Height                       |                  | 205.80 mm                          |
| Bulk Density                 |                  | 1.94 Mg/m <sup>3</sup>             |
| Dry Density                  |                  | 1.52 Mg/m <sup>3</sup>             |
| Water Content                |                  | 27 %                               |
| Degree of Saturation: 95.5 % | Specific Gravity | /: 2.7 Mg/m <sup>3</sup> (Assumed) |

## **Test results**

Young's Modulus (tangential at 50% failure load)

**Poisson's Ratio** 

Young's Modulus

**Poisson's Ratio** 

(secant at 10% failure load)

(tangential at 50% failure load)

| 1.67 MPa |  |
|----------|--|
| n/a      |  |
| n/a      |  |
| n/a      |  |
| n/a      |  |





A303 Amesbury to Berwick Down - Phase 7A GI

PC197708

Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX Client : Geotechnics Limited, The Geotechnical Centre, 203 Torrington Ave, Tile Hill, Coventry, CV4 9UT

C Clergeaud (Snr. Geologist)

09/01/2020

Date:

# **APPENDIX ||**

# Laboratory Test Results - Contamination



## Certificate Number 19-23362

Client Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP

- Our Reference 19-23362
- Client Reference PC197708
  - Order No OC23614
  - Contract Title A303 Amesbury to Berwick Down Phase 7a Countess
  - Description 2 Soil samples.
  - Date Received 18-Nov-19
  - Date Started 18-Nov-19
- Date Completed 22-Nov-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



Adam Fenwick Contracts Manager



22-Nov-19



*Our Ref* 19-23362 *Client Ref* PC197708

*Contract Title* A303 Amesbury to Berwick Down Phase 7a Countess

|                                 |             | 1598934 | 1598935                                |           |           |
|---------------------------------|-------------|---------|--|-----------|-----------|
|                                 |             | Sa      | ample ID                               | WS72403   | WS72403   |
|                                 |             |         | Depth                                  | 0.40-0.60 | 1.00-1.20 |
|                                 |             |         | Other ID                               |           |           |
|                                 |             | Sam     | ple Type                               | SOIL      | SOIL      |
|                                 |             | Sampl   | ing Date                               | 12/11/19  | 12/11/19  |
|                                 |             | Sampl   | ing 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                                  | 4.1       | 4.0       |
| Beryllium                       | DETSC 2301# | 0.2     | mg/kg                                  | < 0.2     | < 0.2     |
| Boron, Water Soluble            | DETSC 2311# | 0.2     | mg/kg                                  | < 0.2     | 0.4       |
| Cadmium                         | DETSC 2301# | 0.1     | mg/kg                                  | 0.9       | 0.5       |
| Chromium III                    | DETSC 2301* | 0.15    | mg/kg                                  | 3.8       | 6.7       |
| Chromium, Hexavalent            | DETSC 2204* | 1       | mg/kg                                  | < 1.0     | < 1.0     |
| Copper                          | DETSC 2301# | 0.2     | mg/kg                                  | 5.2       | 8.5       |
| Iron                            | DETSC 2301  | 25      | mg/kg                                  | 2900      | 6600      |
| Lead                            | DETSC 2301# | 0.3     | mg/kg                                  | 21        | 16        |
| Manganese                       | DETSC 2301# | 20      | mg/kg                                  | 290       | 310       |
| Mercury                         | DETSC 2325# | 0.05    | mg/kg                                  | < 0.05    | < 0.05    |
| Molybdenum                      | DETSC 2301# | 0.4     | mg/kg                                  | < 0.4     | < 0.4     |
| Nickel                          | DFTSC 2301# | 1       | mg/kg                                  | 3.5       | 5.2       |
| Phosphorus                      | DETSC 2301* | 1       | mg/kg                                  | 390       | 430       |
| Selenium                        | DETSC 2301# | 0.5     | mg/kg                                  | 1.1       | < 0.5     |
| Zinc                            | DETSC 2301# | 1       | mg/kg                                  | 47        | 34        |
| Inorganics                      | 211001001   | _       | 0/0                                    |           |           |
| pH                              | DFTSC 2008# |         | рH                                     | 8.5       | 8.3       |
| Cvanide. Total                  | DETSC 2130# | 0.1     | mg/kg                                  | < 0.1     | 0.1       |
| Cvanide, Free                   | DFTSC 2130# | 0.1     | mg/kg                                  | < 0.1     | < 0.1     |
| Total Organic Carbon            | DETSC 2002  | 0.1     | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | 0.4       | 1.6       |
| Ammoniacal Nitrogen as N        | DFTSC 2119# | 0.5     | mg/kg                                  | 3.3       | 4.5       |
| Sulphate Aqueous Extract as SO4 | DETSC 2076# | 10      | mg/l                                   | 43        | 19        |
| Petroleum Hydrocarbons          | 02100 2070  | 10      |  | 10        | 10        |
| Aliphatic C5-C6                 | DFTSC 3321* | 0.01    | mg/kg                                  | < 0.01    | < 0.01    |
| Aliphatic C6-C8                 | DFTSC 3321* | 0.01    | mg/kg                                  | < 0.01    | < 0.01    |
| Aliphatic C8-C10                | DFTSC 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# | 1.3     | 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                 | DFTSC 3321* | 0.01    | mø/ka                                  | < 0.01    | < 0.01    |
| Aromatic C10-C12                | DETSC 3072# | 0.01    | mg/kg                                  | < 0.01    | < 0.01    |
| Aromatic C12-C16                | DETSC 3072# | 0.5     | mg/kg                                  | < 0.5     | < 0.5     |
| Aromatic C16-C21                | DETSC 3072# | 0.5     | mg/kg                                  | < 0.5     | < 0.5     |
| Aromatic C21-C35                | DETSC 3072# | 1 4     | mg/kg                                  | < 0.0     | < 0.0     |
| Aromatic C5-C35                 | DETSC 3072# | 10      | mø/kø                                  | < 10      | < 10      |



*Our Ref* 19-23362 *Client Ref* PC197708

Contract Title A303 Amesbury to Berwick Down Phase 7a Countess

|                         | Lab No      |        |          |           |           |  |
|-------------------------|-------------|--------|----------|-----------|-----------|--|
|                         |             | Sa     | ample ID | WS72403   | WS72403   |  |
|                         |             |        | Depth    | 0.40-0.60 | 1.00-1.20 |  |
|                         |             | (      | Other ID |           |           |  |
|                         |             | Sam    | ple Type | SOIL      | SOIL      |  |
|                         |             | Sampl  | ing Date | 12/11/19  | 12/11/19  |  |
|                         |             | Sampli | ing Time | n/s       | n/s       |  |
| Test                    | Method      | LOD    | Units    |           |           |  |
| TPH Ali/Aro Total       | DETSC 3072* | 10     | mg/kg    | < 10      | < 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    |  |
| МТВЕ                    | DETSC 3321  | 0.01   | mg/kg    | < 0.01    | < 0.01    |  |
| PAHs                    | 1           |        |          |           |           |  |
| 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    | 0.25      | < 0.03    |  |
| Fluorene                | DETSC 3303  | 0.03   | mg/kg    | 0.24      | < 0.03    |  |
| Phenanthrene            | DETSC 3303# | 0.03   | mg/kg    | 2.8       | 0.14      |  |
| Anthracene              | DETSC 3303  | 0.03   | mg/kg    | 2.7       | 0.14      |  |
| Fluoranthene            | DETSC 3303# | 0.03   | mg/kg    | 2.4       | 0.38      |  |
| Pyrene                  | DETSC 3303# | 0.03   | mg/kg    | 1.8       | 0.34      |  |
| Benzo(a)anthracene      | DETSC 3303# | 0.03   | mg/kg    | 0.53      | 0.12      |  |
| Chrysene                | DETSC 3303  | 0.03   | mg/kg    | 0.52      | 0.16      |  |
| Benzo(b)fluoranthene    | DETSC 3303# | 0.03   | mg/kg    | 0.38      | 0.16      |  |
| Benzo(k)fluoranthene    | DETSC 3303# | 0.03   | mg/kg    | 0.18      | 0.06      |  |
| Benzo(a)pyrene          | DETSC 3303# | 0.03   | mg/kg    | 0.32      | 0.12      |  |
| Indeno(1,2,3-c,d)pyrene | DETSC 3303# | 0.03   | mg/kg    | 0.13      | 0.07      |  |
| Dibenzo(a,h)anthracene  | DETSC 3303# | 0.03   | mg/kg    | 0.04      | < 0.03    |  |
| Benzo(g,h,i)perylene    | DETSC 3303# | 0.03   | mg/kg    | 0.12      | 0.07      |  |
| PAH - USEPA 16, Total   | DETSC 3303  | 0.1    | mg/kg    | 12        | 1.8       |  |
| Phenols                 |             |        |          |           |           |  |
| Phenol - Monohydric     | DETSC 2130# | 0.3    | mg/kg    | < 0.3     | < 0.3     |  |

# *I* DETS

# Summary of Asbestos Analysis Soil Samples

Our Ref 19-23362 Client Ref PC197708 Contract Title A303 Amesbury to Berwick Down Phase 7a Countess

| Lab No   | Sample ID         | Material Type | Result | Comment* | Analyst      |  |  |  |
|--|-------------------|---------------|--------|----------|--------------|--|--|--|
| 1598934  | WS72403 0.40-0.60 | SOIL          | NAD    | none     | Luke Donaghy |  |  |  |
| 1598935  | WS72403 1.00-1.20 | 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 19-23362 Client Ref PC197708 Contract A303 Amesbury to Berwick Down Phase 7a Countess

## **Containers Received & Deviating Samples**

|         |                        | Date     |                          | Holding time<br>exceeded for | Inappropriate container for |
|---------|------------------------|----------|--------------------------|------------------------------|-----------------------------|
| Lab No  | Sample ID              | Sampled  | Containers Received      | tests                        | tests                       |
| 1598934 | WS72403 0.40-0.60 SOIL | 12/11/19 | GJ 250ml, GJ 60ml, PT 1L |                              |                             |
| 1598935 | WS72403 1.00-1.20 SOIL | 12/11/19 | GJ 250ml, GJ 60ml, PT 1L |                              |                             |

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

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

## **Soil Analysis Notes**

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

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

### Disposal

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



## Certificate Number 19-24827

Client Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP

- Our Reference 19-24827
- Client Reference PC197708
  - Order No OC23614
  - Contract Title A303 AMESBURY TO BERWICK DOWN PHASE 7A COUNTESS
  - Description 2 Soil samples.
  - Date Received 05-Dec-19
  - Date Started 05-Dec-19
- Date Completed 11-Dec-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



Adam Fenwick Contracts Manager



11-Dec-19



*Our Ref* 19-24827 *Client Ref* PC197708

Contract Title A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

|                                 | Lab No      |         |          |           |           |  |
|---------------------------------|-------------|---------|----------|-----------|-----------|--|
|                                 |             | BH72404 | BH72502  |           |           |  |
|                                 |             |         | Depth    | 0.10-0.20 | 0.10-0.20 |  |
|                                 |             |         | Other ID |           |           |  |
|                                 |             | Sam     | ple Type | ES        | ES        |  |
|                                 |             | Sampl   | ing Date | 13/11/19  | 14/11/19  |  |
|                                 |             | Sampl   | ing Time | n/s       | n/s       |  |
| Test                            | Method      | LOD     | Units    |           |           |  |
| Metals                          |             |         |          |           |           |  |
| Antimony                        | DETSC 2301* | 1       | mg/kg    | 4.7       | 2.8       |  |
| Arsenic                         | DETSC 2301# | 0.2     | mg/kg    | 3.4       | 1.6       |  |
| Beryllium                       | DETSC 2301# | 0.2     | mg/kg    | < 0.2     | < 0.2     |  |
| Boron, Water Soluble            | DETSC 2311# | 0.2     | mg/kg    | 0.4       | 0.4       |  |
| Cadmium                         | DETSC 2301# | 0.1     | mg/kg    | 0.4       | 0.6       |  |
| Chromium III                    | DETSC 2301* | 0.15    | mg/kg    | 5.6       | 4.1       |  |
| Chromium, Hexavalent            | DETSC 2204* | 1       | mg/kg    | < 1.0     | < 1.0     |  |
| Copper                          | DETSC 2301# | 0.2     | mg/kg    | 8.2       | 5.4       |  |
| Iron                            | DETSC 2301  | 25      | mg/kg    | 4800      | 2200      |  |
| Lead                            | DETSC 2301# | 0.3     | mg/kg    | 33        | 27        |  |
| Manganese                       | DETSC 2301# | 20      | mg/kg    | 280       | 140       |  |
| 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    | 5.9       | 2.8       |  |
| Phosphorus                      | DETSC 2301* | 1       | mg/kg    | 450       | 160       |  |
| Selenium                        | DETSC 2301# | 0.5     | mg/kg    | < 0.5     | < 0.5     |  |
| Zinc                            | DETSC 2301# | 1       | mg/kg    | 110       | 39        |  |
| Inorganics                      |             |         |          |           |           |  |
| pH                              | DETSC 2008# |         | pН       | 8.0       | 8.0       |  |
| Cyanide, Total                  | DETSC 2130# | 0.1     | mg/kg    | 0.1       | < 0.1     |  |
| Cyanide, Free                   | DETSC 2130# | 0.1     | mg/kg    | < 0.1     | < 0.1     |  |
| Total Organic Carbon            | DETSC 2002  | 0.1     | %        | 1.3       | 0.7       |  |
| Ammoniacal Nitrogen as N        | DETSC 2119# | 0.5     | mg/kg    | 2.9       | 4.4       |  |
| Sulphate Aqueous Extract as SO4 | DETSC 2076# | 10      | mg/l     | 78        | 14        |  |
| 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    | 2.4       | 1.4       |  |
| 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      |  |



*Our Ref* 19-24827 *Client Ref* PC197708

Contract Title A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

|                         |             | 1607980 | 1607981  |           |           |
|-------------------------|-------------|---------|----------|-----------|-----------|
|                         |             | Sa      | mple ID  | BH72404   | BH72502   |
|                         |             |         | Depth    | 0.10-0.20 | 0.10-0.20 |
|                         |             | (       | Other ID |           |           |
|                         |             | Sam     | ple Type | ES        | ES        |
|                         |             | Sampl   | ing Date | 13/11/19  | 14/11/19  |
|                         |             | Sampli  | ing Time | n/s       | n/s       |
| Test                    | Method      | LOD     | Units    |           |           |
| TPH Ali/Aro Total       | DETSC 3072* | 10      | mg/kg    | < 10      | < 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    | 0.41      | 0.08      |
| МТВЕ                    | 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    | 0.05      | 0.04      |
| Anthracene              | DETSC 3303  | 0.03    | mg/kg    | < 0.03    | < 0.03    |
| Fluoranthene            | DETSC 3303# | 0.03    | mg/kg    | 0.12      | 0.09      |
| Pyrene                  | DETSC 3303# | 0.03    | mg/kg    | 0.11      | 0.09      |
| Benzo(a)anthracene      | DETSC 3303# | 0.03    | mg/kg    | 0.05      | 0.04      |
| Chrysene                | DETSC 3303  | 0.03    | mg/kg    | 0.07      | 0.05      |
| Benzo(b)fluoranthene    | DETSC 3303# | 0.03    | mg/kg    | 0.11      | 0.06      |
| Benzo(k)fluoranthene    | DETSC 3303# | 0.03    | mg/kg    | 0.05      | < 0.03    |
| Benzo(a)pyrene          | DETSC 3303# | 0.03    | mg/kg    | 0.09      | 0.04      |
| Indeno(1,2,3-c,d)pyrene | DETSC 3303# | 0.03    | mg/kg    | 0.07      | 0.04      |
| 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    | 0.06      | 0.03      |
| PAH - USEPA 16, Total   | DETSC 3303  | 0.1     | mg/kg    | 0.79      | 0.50      |
| Phenols                 | T           | -       |          |           |           |
| Phenol - Monohydric     | DETSC 2130# | 0.3     | mg/kg    | < 0.3     | 0.3       |

# *I* DETS

# Summary of Asbestos Analysis Soil Samples

*Our Ref* 19-24827 *Client Ref* PC197708 *Contract Title* A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

| Lab No   | Sample ID         | Material Type | Result | Comment* | Analyst      |  |  |  |
|--|-------------------|---------------|--------|----------|--------------|--|--|--|
| 1607980  | BH72404 0.10-0.20 | SOIL          | NAD    | none     | Keith Wilson |  |  |  |
| 1607981  | BH72502 0.10-0.20 | SOIL          | NAD    | none     | Keith Wilson |  |  |  |
| 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.



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# Information in Support of the Analytical Results

Our Ref 19-24827 Client Ref PC197708 Contract A303 AMESBURY TO BERWICK DOWN - PHASE 7A COUNTESS

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

|         |                        | Date     |                            |  | container for |
|---------|------------------------|----------|----------------------------|--|---------------|
| Lab No  | Sample ID              | Sampled  | <b>Containers Received</b> | Holding time exceeded for tests  | tests         |
| 1607980 | BH72404 0.10-0.20 SOIL | 13/11/19 | GJ 250ml, GJ 60ml, PT 1L   | Aliphatics/Aromatics (14 days), BTEX (14 days),<br>Naphthalene (14 days), PAH MS (14 days), pH +   |               |
|         |                        |          |                            | Conductivity (7 days), Cyanide/Mono pHoh (14 days)   |               |
| 1607981 | BH72502 0.10-0.20 SOIL | 14/11/19 | GJ 250ml, PT 1L            | Aliphatics/Aromatics (14 days), BTEX (14 days),<br>Naphthalene (14 days), PAH MS (14 days), pH +<br>Conductivity (7 days), Cyanide/Mono pHoh (14 days) |               |

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

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

#### **Soil Analysis Notes**

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

#### Disposal

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



## Certificate Number 19-25097

Client Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP

- Our Reference 19-25097
- Client Reference PC197708
  - Order No OC23614
  - Contract Title A303 Amesbury to Berwick Down Phase 7a Countess
  - Description 8 Soil samples.
  - Date Received 05-Dec-19
  - Date Started 05-Dec-19
- Date Completed 16-Dec-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





16-Dec-19



*Our Ref* 19-25097 *Client Ref* PC197708

Contract Title A303 Amesbury to Berwick Down Phase 7a Countess

|                                 |             |        | Lab No   | 1609633  | 1609634  | 1609635  | 1609636  | 1609637  | 1609638  |
|---------------------------------|-------------|--------|----------|----------|----------|----------|----------|----------|----------|
|                                 |             |        |          |          |          |          |          |          |          |
|                                 |             | Sa     | mple ID  | BH72501  | BH72501  | STP72501 | STP72501 | STP72502 | STP72502 |
|                                 |             |        | Depth    | 0.30     | 0.50     | 0.10     | 0.30     | 0.10     | 0.30     |
|                                 |             | (      | Other ID |          |          |          |          |          |          |
|                                 |             | Sam    | ple Type | SOIL     | SOIL     | SOIL     | SOIL     | SOIL     | SOIL     |
|                                 |             | Sampl  | ing Date | 25/11/19 | 25/11/19 | 26/11/19 | 26/11/19 | 26/11/19 | 26/11/19 |
|                                 |             | Sampli | ing Time | n/s      | n/s      | n/s      | n/s      | n/s      | n/s      |
| Test                            | Method      | LOD    | Units    |          |          |          |          |          |          |
| Metals                          |             |        |          |          |          |          |          |          |          |
| Antimony                        | DETSC 2301* | 1      | mg/kg    | 1.6      | < 1.0    | < 1.0    | < 1.0    | 1.1      | < 1.0    |
| Arsenic                         | DETSC 2301# | 0.2    | mg/kg    | 4.5      | 4.1      | 4.2      | 2.7      | 4.4      | 3.1      |
| Beryllium                       | DETSC 2301# | 0.2    | mg/kg    | 0.3      | 0.3      | 0.3      | 0.2      | 0.2      | < 0.2    |
| Boron, Water Soluble            | DETSC 2311# | 0.2    | mg/kg    | 0.5      | 0.5      | 0.6      | 0.3      | 0.8      | 0.4      |
| Cadmium                         | DETSC 2301# | 0.1    | mg/kg    | 0.3      | 0.3      | 0.6      | 0.4      | 0.6      | 0.4      |
| Chromium III                    | DETSC 2301* | 0.15   | mg/kg    | 8.0      | 8.7      | 9.7      | 4.2      | 8.6      | 5.7      |
| Chromium, Hexavalent            | DETSC 2204* | 1      | mg/kg    | < 1.0    | < 1.0    | < 1.0    | < 1.0    | < 1.0    | < 1.0    |
| Copper                          | DETSC 2301# | 0.2    | mg/kg    | 6.7      | 6.7      | 17       | 6.8      | 19       | 7.5      |
| Iron                            | DETSC 2301  | 25     | mg/kg    | 7100     | 7900     | 7500     | 3600     | 7600     | 5700     |
| Lead                            | DETSC 2301# | 0.3    | mg/kg    | 57       | 20       | 45       | 15       | 48       | 20       |
| Manganese                       | DETSC 2301# | 20     | mg/kg    | 240      | 240      | 390      | 210      | 390      | 310      |
| Mercury                         | DETSC 2325# | 0.05   | mg/kg    | < 0.05   | < 0.05   | < 0.05   | < 0.05   | 0.22     | 0.21     |
| Molybdenum                      | DETSC 2301# | 0.4    | mg/kg    | < 0.4    | < 0.4    | 0.5      | < 0.4    | 0.5      | < 0.4    |
| Nickel                          | DETSC 2301# | 1      | mg/kg    | 6.5      | 6.6      | 7.1      | 4.7      | 7.0      | 5.4      |
| Phosphorus                      | DETSC 2301* | 1      | mg/kg    | 1100     | 490      | 880      | 400      | 760      | 620      |
| Selenium                        | DETSC 2301# | 0.5    | mg/kg    | < 0.5    | < 0.5    | < 0.5    | 0.6      | < 0.5    | < 0.5    |
| Zinc                            | DETSC 2301# | 1      | mg/kg    | 33       | 34       | 100      | 42       | 120      | 46       |
| Inorganics                      | - 1         |        |          |          |          | 1        | 1        | 1        | 1        |
| рН                              | DETSC 2008# |        | pН       | 9.5      | 10.4     | 7.9      | 10.5     | 7.8      | 8.9      |
| Cyanide, Total                  | DETSC 2130# | 0.1    | mg/kg    | < 0.1    | < 0.1    | 0.1      | < 0.1    | 0.2      | < 0.1    |
| Cyanide, Free                   | DETSC 2130# | 0.1    | mg/kg    | < 0.1    | < 0.1    | < 0.1    | < 0.1    | < 0.1    | < 0.1    |
| Total Organic Carbon            | DETSC 2002  | 0.1    | %        | 0.7      | 0.6      | 3.5      | 0.6      | 3.4      | 1.1      |
| Ammoniacal Nitrogen as N        | DETSC 2119# | 0.5    | mg/kg    | 2.3      | 2.0      | 6.4      | 4.2      | 5.9      | 2.4      |
| Sulphate Aqueous Extract as SO4 | DETSC 2076# | 10     | mg/l     | 52       | 65       | 28       | 29       | 27       | 21       |
| Petroleum Hydrocarbons          | DETCO 2224* | 0.01   |          | 10.01    | 10.01    | 10.01    | 10.01    | 10.01    | 10.01    |
| Aliphatic CS-C6                 | DETSC 3321* | 0.01   | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| Aliphatic C6-C8                 | DETSC 3321* | 0.01   | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| Aliphatic C8-C10                | DETSC 3321* | 0.01   | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| Aliphatic C10-C12               | DETSC 3072# | 1.5    | mg/kg    | < 1.5    | < 1.5    | < 1.5    | < 1.5    | < 1.5    | < 1.5    |
|                                 | DETSC 3072# | 1.2    | mg/kg    | < 1.2    | < 1.2    | < 1.2    | < 1.2    | < 1.2    | < 1.2    |
|                                 | DETSC 3072# | 1.5    | mg/kg    | < 1.5    | < 1.5    | < 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    | < 3.4    | < 3.4    |
| Aliphatic C5-C35                | DETSC 3072* | 10     | mg/kg    | < 10     | < 10     | < 10     | < 10     | < 10     | < 10     |
| Aromatic C5-C7                  | DETSC 3321* | 0.01   | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| Aromatic C7-C8                  | DETSC 3321* | 0.01   | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| Aromatic C8-C10                 | DETSC 3321* | 0.01   | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| Aromatic C10-C12                | DETSC 3072# | 0.9    | mg/kg    | < 0.9    | < 0.9    | < 0.9    | < 0.9    | < 0.9    | < 0.9    |
| Aromatic C12-C16                | DETSC 3072# | 0.5    | mg/kg    | < 0.5    | < 0.5    | < 0.5    | < 0.5    | < 0.5    | < 0.5    |
| Aromatic C16-C21                | DETSC 3072# | 0.6    | mg/kg    | < 0.6    | < 0.6    | < 0.6    | < 0.6    | < 0.6    | < 0.6    |
| Aromatic C21-C35                | DETSC 3072# | 1.4    | mg/kg    | < 1.4    | < 1.4    | < 1.4    | < 1.4    | < 1.4    | < 1.4    |
|                                 |             | I I    | 5, 6     |          |          |          |          |          |          |
| Aromatic C5-C35                 | DETSC 3072* | 10     | mg/kg    | < 10     | < 10     | < 10     | < 10     | < 10     | < 10     |
# *i* DETS

## Summary of Chemical Analysis Soil Samples

Our Ref 19-25097 Client Ref PC197708

Contract Title A303 Amesbury to Berwick Down Phase 7a Countess

|                         | Lab No      |       |          | 1609633  | 1609634  | 1609635  | 1609636  | 1609637  | 1609638  |
|-------------------------|-------------|-------|----------|----------|----------|----------|----------|----------|----------|
|                         |             |       |          |          |          |          |          |          |          |
|                         |             | Sa    | ample ID | BH72501  | BH72501  | STP72501 | STP72501 | STP72502 | STP72502 |
|                         |             |       | Depth    | 0.30     | 0.50     | 0.10     | 0.30     | 0.10     | 0.30     |
|                         |             | _     | Other ID |          |          |          |          |          |          |
|                         |             | Sam   | ple Type | SOIL     | SOIL     | SOIL     | SOIL     | SOIL     | SOIL     |
|                         |             | Sampl | ing Date | 25/11/19 | 25/11/19 | 26/11/19 | 26/11/19 | 26/11/19 | 26/11/19 |
| Tost                    | Mathad      | Sampi |          | n/s      | n/s      | n/s      | n/s      | n/s      | n/s      |
|                         |             | 10    | mg/kg    | < 10     | < 10     | < 10     | < 10     | < 10     | < 10     |
| Benzene                 | DETSC 2221# | 0.01  | mg/kg    | < 0.01   | < 10     | < 0.01   | < 0.01   | < 0.01   | < 10     |
| Ethylbenzene            | DETSC 3321# | 0.01  | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| Toluene                 | DETSC 3321# | 0.01  | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| Xvlene                  | DETSC 3321# | 0.01  | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| MTBF                    | DETSC 3321  | 0.01  | mg/kg    | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   | < 0.01   |
| PAHs                    | DEIGCODEI   | 0.01  |          | . 0.01   | . 0.01   | .0.01    | . 0.01   | .0.01    | . 0.01   |
| Naphthalene             | DETSC 3303# | 0.03  | mg/kg    | < 0.03   | < 0.03   | < 0.03   | < 0.03   | < 0.03   | < 0.03   |
| Acenaphthylene          | DETSC 3303# | 0.03  | mg/kg    | < 0.03   | < 0.03   | < 0.03   | < 0.03   | < 0.03   | < 0.03   |
| Acenaphthene            | DETSC 3303# | 0.03  | mg/kg    | < 0.03   | < 0.03   | < 0.03   | < 0.03   | 0.04     | < 0.03   |
| Fluorene                | DETSC 3303  | 0.03  | mg/kg    | < 0.03   | < 0.03   | < 0.03   | < 0.03   | < 0.03   | < 0.03   |
| Phenanthrene            | DETSC 3303# | 0.03  | mg/kg    | 0.05     | 0.06     | < 0.03   | < 0.03   | 0.28     | 0.36     |
| Anthracene              | DETSC 3303  | 0.03  | mg/kg    | < 0.03   | < 0.03   | < 0.03   | < 0.03   | 0.07     | 0.06     |
| Fluoranthene            | DETSC 3303# | 0.03  | mg/kg    | 0.12     | 0.19     | 0.07     | 0.05     | 0.41     | 0.77     |
| Pyrene                  | DETSC 3303# | 0.03  | mg/kg    | 0.10     | 0.19     | 0.06     | 0.05     | 0.35     | 0.66     |
| Benzo(a)anthracene      | DETSC 3303# | 0.03  | mg/kg    | 0.05     | 0.11     | < 0.03   | < 0.03   | 0.10     | 0.22     |
| Chrysene                | DETSC 3303  | 0.03  | mg/kg    | 0.06     | 0.16     | < 0.03   | < 0.03   | 0.11     | 0.28     |
| Benzo(b)fluoranthene    | DETSC 3303# | 0.03  | mg/kg    | 0.07     | 0.23     | < 0.03   | 0.03     | 0.10     | 0.24     |
| Benzo(k)fluoranthene    | DETSC 3303# | 0.03  | mg/kg    | < 0.03   | 0.07     | < 0.03   | < 0.03   | < 0.03   | 0.10     |
| Benzo(a)pyrene          | DETSC 3303# | 0.03  | mg/kg    | 0.05     | 0.18     | < 0.03   | < 0.03   | 0.07     | 0.18     |
| Indeno(1,2,3-c,d)pyrene | DETSC 3303# | 0.03  | mg/kg    | 0.03     | 0.09     | < 0.03   | < 0.03   | < 0.03   | 0.11     |
| Dibenzo(a,h)anthracene  | DETSC 3303# | 0.03  | mg/kg    | < 0.03   | 0.04     | < 0.03   | < 0.03   | < 0.03   | < 0.03   |
| Benzo(g,h,i)perylene    | DETSC 3303# | 0.03  | mg/kg    | 0.03     | 0.11     | < 0.03   | < 0.03   | 0.04     | 0.12     |
| PAH - USEPA 16, Total   | DETSC 3303  | 0.1   | mg/kg    | 0.55     | 1.4      | 0.13     | 0.13     | 1.6      | 3.1      |
| Phenols                 |             |       |          |          |          |          |          |          |          |
| Phenol - Monohydric     | DETSC 2130# | 0.3   | mg/kg    | 1.0      | 0.6      | 1.0      | < 0.3    | 0.5      | < 0.3    |



## Summary of Chemical Analysis Soil Samples

Our Ref 19-25097 Client Ref PC197708 Contract Title A303 Amesbury to Berwick Down Phase 7a Countes

|                                 |             |       | Lab No   | 1609639  | 1609640  |
|---------------------------------|-------------|-------|----------|----------|----------|
|                                 |             |       |          |          |          |
|                                 |             | Sa    | ample ID | WS72403  | BH72501  |
|                                 |             |       | Depth    | 1.50     | 2.20     |
|                                 |             |       | Other ID |          |          |
|                                 |             | Sam   | ple Type | SOIL     | SOIL     |
|                                 |             | Sampl | ing Date | 02/12/19 | 26/11/19 |
|                                 |             | Sampl | ing 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    | 1.3      | 4.9      |
| Beryllium                       | DETSC 2301# | 0.2   | mg/kg    | < 0.2    | < 0.2    |
| Boron, Water Soluble            | DETSC 2311# | 0.2   | mg/kg    | 0.2      | < 0.2    |
| Cadmium                         | DETSC 2301# | 0.1   | mg/kg    | 0.4      | 0.5      |
| Chromium III                    | DETSC 2301* | 0.15  | mg/kg    | 2.8      | 10       |
| Chromium, Hexavalent            | DETSC 2204* | 1     | mg/kg    | < 1.0    | < 1.0    |
| Copper                          | DETSC 2301# | 0.2   | mg/kg    | 3.7      | 8.9      |
| Iron                            | DETSC 2301  | 25    | mg/kg    | 2200     | 3100     |
| Lead                            | DETSC 2301# | 0.3   | mg/kg    | 5.7      | 1.3      |
| Manganese                       | DETSC 2301# | 20    | mg/kg    | 400      | 300      |
| Mercury                         | DETSC 2325# | 0.05  | mg/kg    | 0.08     | < 0.05   |
| Molybdenum                      | DETSC 2301# | 0.4   | mg/kg    | < 0.4    | 0.7      |
| Nickel                          | DETSC 2301# | 1     | mg/kg    | 4.3      | 5.2      |
| Phosphorus                      | DETSC 2301* | 1     | mg/kg    | 460      | 690      |
| Selenium                        | DETSC 2301# | 0.5   | mg/kg    | 0.6      | 8.1      |
| Zinc                            | DETSC 2301# | 1     | mg/kg    | 27       | 18       |
| Inorganics                      | ľ           |       |          |          |          |
| рН                              | DETSC 2008# |       | pН       | 8.6      | 8.7      |
| Cyanide, Total                  | DETSC 2130# | 0.1   | mg/kg    | < 0.1    | < 0.1    |
| Cyanide, Free                   | DETSC 2130# | 0.1   | mg/kg    | < 0.1    | < 0.1    |
| Total Organic Carbon            | DETSC 2002  | 0.1   | %        | 0.4      | < 0.1    |
| Ammoniacal Nitrogen as N        | DETSC 2119# | 0.5   | mg/kg    | 2.0      | 1.7      |
| Sulphate Aqueous Extract as SO4 | DETSC 2076# | 10    | mg/l     | 31       | 21       |
| Petroleum Hydrocarbons          | 1           |       |          | I        |          |
| Aliphatic C5-C6                 | DETSC 3321* | 0.01  | mg/kg    | < 0.01   | < 0.01   |
| Aliphatic C6-C8                 | DETSC 3321* | 0.01  | mg/kg    | < 0.01   | < 0.01   |
| Aliphatic C8-C10                | DETSC 3321* | 0.01  | mg/kg    | < 0.01   | < 0.01   |
| Aliphatic C10-C12               | DETSC 3072# | 1.5   | mg/kg    | < 1.5    | < 1.5    |
| Aliphatic C12-C16               | DETSC 3072# | 1.2   | mg/kg    | < 1.2    | < 1.2    |
| Aliphatic C16-C21               | DETSC 3072# | 1.5   | mg/kg    | < 1.5    | < 1.5    |
| Aliphatic C21-C35               | DETSC 3072# | 3.4   | mg/kg    | < 3.4    | < 3.4    |
| Aliphatic C5-C35                | DFTSC 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  | ma/ka    | < 0.01   | < 0.01   |
| Aromatic C9 C10                 | DETSC 3321* | 0.01  | mg/kg    | < 0.01   | < 0.01   |
| Aromatic C10 C12                | DEISC 3321* | 0.01  | mg/Kg    | < U.UI   | < 0.01   |
|                                 | DETSC 30/2# | 0.9   | rng/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     |

# *i* DETS

## **Summary of Chemical Analysis** Soil Samples

Our Ref 19-25097 Client Ref PC197708 Contract Title A303 Amesbury to Berwick Down Phase 7a Countes

|                         | 1609639     | 1609640 |                      |          |          |
|-------------------------|-------------|---------|----------------------|----------|----------|
|                         |             |         |                      |          |          |
|                         |             | Sa      | ample ID             | WS72403  | BH72501  |
|                         |             |         | Depth                | 1.50     | 2.20     |
|                         |             |         | Other ID             |          |          |
|                         |             | Sam     | ple Type             | SOIL     | SOIL     |
|                         |             | Sampi   | ing Date             | 02/12/19 | 26/11/19 |
| Test                    | Method      |         | ling rinne<br>Linite | 1/5      | 11/5     |
| TPH Ali/Aro Total       | DETSC 3072* | 10      | mg/kg                | < 10     | < 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   |
| МТВЕ                    | 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                | 0.09     | < 0.03   |
| Anthracene              | DETSC 3303  | 0.03    | mg/kg                | < 0.03   | < 0.03   |
| Fluoranthene            | DETSC 3303# | 0.03    | mg/kg                | 0.19     | < 0.03   |
| Pyrene                  | DETSC 3303# | 0.03    | mg/kg                | 0.16     | < 0.03   |
| Benzo(a)anthracene      | DETSC 3303# | 0.03    | mg/kg                | 0.05     | < 0.03   |
| Chrysene                | DETSC 3303  | 0.03    | mg/kg                | 0.08     | < 0.03   |
| Benzo(b)fluoranthene    | DETSC 3303# | 0.03    | mg/kg                | 0.05     | < 0.03   |
| Benzo(k)fluoranthene    | DETSC 3303# | 0.03    | mg/kg                | < 0.03   | < 0.03   |
| Benzo(a)pyrene          | DETSC 3303# | 0.03    | mg/kg                | 0.04     | < 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                | 0.65     | < 0.10   |
| Phenols                 |             |         |                      |          |          |
| Phenol - Monohydric     | DETSC 2130# | 0.3     | mg/kg                | < 0.3    | < 0.3    |

# *i* DETS

## Summary of Asbestos Analysis Soil Samples

Our Ref 19-25097 Client Ref PC197708 Contract Title A303 Amesbury to Berwick Down Phase 7a Countess

| Lab No  | Sample ID     | Material Type | Result | Comment* | Analyst      |
|---------|---------------|---------------|--------|----------|--------------|
| 1609633 | BH72501 0.30  | SOIL          | NAD    | none     | Luke Donaghy |
| 1609634 | BH72501 0.50  | SOIL          | NAD    | none     | Luke Donaghy |
| 1609635 | STP72501 0.10 | SOIL          | NAD    | none     | Luke Donaghy |
| 1609636 | STP72501 0.30 | SOIL          | NAD    | none     | Luke Donaghy |
| 1609637 | STP72502 0.10 | SOIL          | NAD    | none     | Luke Donaghy |
| 1609638 | STP72502 0.30 | SOIL          | NAD    | none     | Luke Donaghy |
| 1609639 | WS72403 1.50  | SOIL          | NAD    | none     | Luke Donaghy |
| 1609640 | BH72501 2.20  | 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.



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### Information in Support of the Analytical Results

Our Ref 19-25097 Client Ref PC197708 Contract A303 Amesbury to Berwick Down Phase 7a Countess

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

|         |                    | Date     |                                   |                                 | container for |
|---------|--------------------|----------|-----------------------------------|---------------------------------|---------------|
| Lab No  | Sample ID          | Sampled  | <b>Containers Received</b>        | Holding time exceeded for tests | tests         |
| 1609633 | BH72501 0.30 SOIL  | 25/11/19 | GJ 250ml x2, GJ 60ml x2, PT 1L x2 | pH + Conductivity (7 days)      |               |
| 1609634 | BH72501 0.50 SOIL  | 25/11/19 | GJ 250ml x2, GJ 60ml x2, PT 1L x2 | pH + Conductivity (7 days)      |               |
| 1609635 | STP72501 0.10 SOIL | 26/11/19 | GJ 60ml x2, PT 1L                 | pH + Conductivity (7 days)      |               |
| 1609636 | STP72501 0.30 SOIL | 26/11/19 | GJ 250ml, GJ 60ml x2, PT 1L       | pH + Conductivity (7 days)      |               |
| 1609637 | STP72502 0.10 SOIL | 26/11/19 | GJ 250ml, GJ 60ml x2, PT 1L       | pH + Conductivity (7 days)      |               |
| 1609638 | STP72502 0.30 SOIL | 26/11/19 | GJ 250ml, GJ 60ml x2, PT 1L       | pH + Conductivity (7 days)      |               |
| 1609639 | WS72403 1.50 SOIL  | 02/12/19 | GJ 250ml, GJ 60ml x2, PT 1L       |                                 |               |
| 1609640 | BH72501 2.20 SOIL  | 26/11/19 | GJ 250ml x2, GJ 60ml x2, 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** 12

# Investigation Techniques and General Notes

### 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.

### <u>TRIAL PITS</u>

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 active significant 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 I m 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 dial 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**

- I. 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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- 3. The report and/or opinion is prepared for the specific purpose stated in the document and in relation to the nature and extent of proposals made available to Geotechnics Limited at that time. Re-consideration will be necessary should those details change. The recommendations should not be used for other schemes on or adjacent to the site without further reference to Geotechnics Limited.
- 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.
- Tests requiring the use of another laboratory having UKAS accreditation where possible are identified.
- 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.

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- 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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