

LYNEHAM BANKS LANDSLIP

GROUND INVESTIGATION REPORT (FACTUAL ACCOUNT OF FIELDWORK, MONITORING AND LABORATORY TESTING)

Report No H2060-22

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Issue No 1

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1 INTRODUCTION

SOCOTEC UK Limited (SOCOTEC) was commissioned in September 2022 by Atkins, on behalf of Wiltshire Council to carry out a ground investigation at Lyneham Banks to investigate a large landslip that affected the highway and surrounding area.

The scope of the investigation was specified by Atkins and comprised boreholes, trial pits, field testing, monitoring, laboratory testing and reporting. The fieldwork was carried out between 12 October 2022 and 22 December 2022.

The investigation was performed in accordance with the contract specification (Atkins project reference: 5214576, document revision: 2.0), and the general requirements of BS 5930:2015+A1 (2020), BS EN 1997-2 (2007), BS EN ISO 22475-1 (2021) and other relevant related standards identified.

This report presents a description of the ground investigation work carried out together with the factual records of the fieldwork, monitoring and laboratory testing. It comprises the Factual Account section of a Ground Investigation Report (GIR), as defined in the UK Specification for Ground Investigation draft Third Edition (2022), also identified as the Factual Report section in BS 5930:2015+A1 (2020). The information is also presented in digital data format as defined in AGS 4.0.4 (2017).

2 SITE SETTING

2.1 Location and Description

Lyneham Banks is located approximately 200 m northwest of Lyneham between The Banks and Dauntsey Lock on the B4069, at National Grid reference SU 007 797, see Site Location Plan in Appendix A. The nearest postcode to the site is SN15 4AA.

The site is located in an agricultural surrounding and comprises the land to the north and south of the existing B4069 which runs east to west through the centre of the site. The land comprises agricultural fields to the north of the highway and an area of recent development, including partially built residential properties and landscaping to the south.



The site spans approximately 1.4 km along the B4069. The landslip occupies the central area of the site measuring approximately 200 m by 200 m. The site extends along the B4069 approximately 0.9 km to the west and 0.3 km to the east of the landslip. The site slopes down from the south to a stream in the north with a maximum elevation of approximately 134 m and a minimum elevation of approximately 97 m. The landslip is orientated north to south perpendicular to the highway.

At the time of the investigation the B4069 was closed and a section of the highway had moved several meters to the north and was severely damaged by the landslip. The landslip displaced the highway into the agricultural field's downslope leaving a back scar in the area to the south and hummocked material in the field to the north. The site is surrounded by agricultural fields and small areas of woodland to the north, south and west with residential properties and a car garage bounding the site to the east.

2.2 Published Geology

The published geological map for the area, BGS Sheet 266 (1974), and the BGS GeoIndex Onshore online viewer (2022) show the site located on landslide deposits, which appear to be common in the surrounding area extending to the east and west of the site.

The underlying bedrock is indicated to comprise the Oxford Clay Formation of Jurassic age, characterised by grey mudstone. The Stanford Formation is indicated immediately to the south of the site which comprises shelly and ooidal limestones of Jurassic age.

No superficial deposits are recorded on site though some made ground is likely to be present given the highway construction and the development of the field to the south of the B4069.

Alluvial deposits are indicated north of the site and appear to be associated with the stream beyond the northern site boundary.



3 FIELDWORK

3.1 General

The exploratory hole locations were selected by Atkins and set out to specified coordinates. The positions were surveyed by SOCOTEC to National Grid and Ordnance Datum, and the locations are shown on the Site Plan in Appendix A.

The investigation was undertaken across the landslip and highway and in places access was difficult. Specialist tracked plant, including a tracked slope climbing platform and tracked telehandler, were deployed as part of this project to aid access to the landslip area and the field below the damaged highway. During the initial stages of the investigation heavy rain caused the site to become waterlogged further hindering access.

3.2 Exploratory Holes

The exploratory holes are listed in Table 1 with further details of the individual holes presented in the Exploratory Hole logs in Appendix B.

TABLE 1 SUMMARY OF EXPLORATORY HOLES

TYPE	QUANTITY	DEPTH RANGE (m)	REMARKS
Dynamic sampling extended by rotary core drilling	27	6.00 to 20.45	Designated: ATK_BH02, ATK_BH02B, ATK_BH03, ATK_BH04, ATK_BH05, ATK_BH06, ATK_BH07, ATK_BH08, ATK_BH09, ATK_BH10, ATK_BH11, ATK_BH12, ATK_BH13, ATK_BH14, ATK_BH15, ATK_BH16, ATKRD_BH01, ATKRD_BH02, ATKRD_BH03, ATKRD_BH04, ATKRD_BH05, ATKRD_BH06, ATKRD_BH07, ATKRD_BH08, ATKRD_BH09, ATKRD_BH10 and ATKRD_BH11,
Rotary open hole drilling	4	8.00 to 20.00	Designated: ATK_BH01, ATK_BH02A, ATK_BH12A and ATK_BH17
Inspection pits (hand dug)	2	0.20 to 0.60	Designated: ATKRD_IP01 and ATKRD_IP02 Undertaken to facilitate water sampling



TYPE	QUANTITY	DEPTH RANGE (m)	REMARKS
Trial pits (machine dug)	22	1.00 to 4.00	Designated: ATK_TP01, ATK_TP02, ATK_TP03, ATK_TP04, ATK_TP05, ATK_TP06, ATK_TP07, ATK_TP07A, ATK_TP08A, ATK_TP09, ATK_TP10, ATK_TP11, ATK_TP12, ATK_TP13, ATK_TP14, ATK_TP15, ATK_TP16, ATK_TP17, ATK_TP18, ATK_TP19 and ATKRD_TP01

The exploratory hole logs are presented in Appendix B. These include descriptions of the strata encountered together with details of the equipment and methods used, sampling and field testing carried out, water depths and other field observations. Explanations of the terms and abbreviations used on the logs are given in the Key to Exploratory Hole Records in Appendix B, along with other explanatory information. The geological material descriptions are in accordance with BS 5930:2015+A1 (2020), following BS EN ISO 14688-1 (2018) and BS EN ISO 14689 (2018) for soils and rocks, respectively.

Standard penetration tests (SPT) in the boreholes were carried out in accordance with BS EN ISO 22476-3+A1 (2011). SPT hammer energy ratio certificates are included in Appendix B. The results are presented on the logs without any corrections to the measured blow-counts or derived N values.

Geotechnical samples were transferred from site to the Bridgend office of SOCOTEC for temporary retention. Samples taken for geoenvironmental testing were transferred directly from site to the SOCOTEC environmental chemistry laboratory (see Section 3.6).

Photographs of trial pits, dynamic sampling and rotary drilled cores are presented in Appendix G.

3.3 Field Testing

Five Variable Head Permeability Tests (VHT) were carried out in selected boreholes, as specified by Atkins. Further details are summarised in Table 2 and the results presented in Appendix C.

**TABLE 2 SUMMARY OF FIELD TESTS**

TYPE	QUANTITY	REMARKS
Rising head permeability test	5	ATK_BH05, ATK_BH09, ATK_BH10, ATK_BH14 and ATK_BH17.

3.4 Groundwater Monitoring

Monitoring was carried out by SOCOTEC on four occasions following the main fieldwork period and the records are included in Appendix D. In addition to the monitoring of standpipes, dataloggers and remote access Vibrating Wire Piezometers (VWPs) were installed in selected boreholes. The VWPs are remote accessible through the SOCOTEC Calyx system and the results are available separate to this report. The details of the installations and monitoring carried out are presented in Table 3.

TABLE 3 SUMMARY OF MONITORING

TYPE	REMARKS
Groundwater Monitoring Visit	18 January, 01 February, 16 February and 24 February
Groundwater Datalogger	Installed upon completion of boreholes Monitoring rounds: 18 January and 24 February Locations: ATK_BH05, ATK_BH09, ATK_BH10, ATK_BH14 and ATK_BH17.
Vibrating Wire Piezometer	Installed upon completion of boreholes Locations: ATK_BH01, ATK_BH02, ATK_BH03, ATK_BH12, ATK_BH13, ATKRD_BH04, ATKRD_BH08, and ATKRD_BH10

At the time of issue of this report, remote access monitoring equipment has been installed in ATK_BH locations only. ATKRD_BH locations are not currently being monitored. Remote access monitoring equipment will be moved to ATKRD_BH locations upon instruction at a later date.

3.5 Groundwater Sampling

Sampling of groundwater from installations in boreholes and specified surface water locations was carried out by SOCOTEC following the main fieldwork period on three occasions. One groundwater sample was taken from an inspection pit during the main fieldwork period. Details of the groundwater



sampling are provided in Table 4 and the results of subsequent laboratory testing on the samples are included in Appendix F.

TABLE 4 SUMMARY OF GROUNDWATER SAMPLING

TYPE	QUANTITY	REMARKS
Groundwater Sampling – Installations	15	Visits: 18 January, 01 February, 16 February Locations: ATK_BH05, ATK_BH09, ATK_BH10, ATK_BH14 and ATK_BH17
Groundwater Sampling – Inspection Pit	1	Visit: 30 October Location: ATKRD_IP02
Surface Water Sampling	2	Visit: 02 February Locations: ATK_SW01 and ATK_SW02

3.6 Inclinator Installations

Inclinometers were installed in selected boreholes by SOCOTEC during the main fieldwork period. The inclinometers are remote accessible through the SOCOTEC Calyx system and therefore the results are available separate to this report. The details of the inclinometer installations are summarised in Table 5 with further details presented on the borehole logs in Appendix B and summarised in Appendix D.

TABLE 5 SUMMARY OF INCLINOMETER INSTALLATIONS

TYPE	REMARKS
Electric Inclinometer	Installed upon completion of boreholes Locations: ATK_BH02A, ATK_BH04, ATK_BH07, ATK_BH08, ATK_BH11, ATK_BH12A, ATK_BH15, ATK_BH16, ATKRD_BH01, ATKRD_BH03, ATKRD_BH05, ATKRD_BH07, and ATKRD_BH11.

At the time of issue of this report, remote access monitoring equipment has been installed in ATK_BH locations only. ATKRD_BH locations are not currently being monitored. Remote access monitoring equipment will be moved to ATKRD_BH locations upon instruction at a later date.



4 LABORATORY TESTING

4.1 Geotechnical Testing

Geotechnical laboratory testing of selected samples was scheduled by Atkins. The testing was carried out by GSTL near Llanelli, Geolabs near Watford and Eurofins Chemtest near Newmarket in accordance with test methods as stated within the test reports. The scope of testing is listed in Table 6 and the results are presented in Appendix E.

At the time of issue of this report, seven Ring Shear strength tests are ongoing. The results will be reported as an addendum to this report.

TABLE 6 SUMMARY OF GEOTECHNICAL LABORATORY TESTS

TEST TYPE ¹	QUANTITY	REMARKS
Classification/index tests		
Water content	128	
Atterberg limits	132	
Particle size distribution	132	By sieving and 130 by sedimentation
Strength tests		
Unconsolidated undrained triaxial compression	68	
Consolidated undrained triaxial compression	17	
Ring shear	12	7no. outstanding
Consolidation tests		
One-dimensional (oedometer) consolidation	23	
Geochemical tests		
pH and sulphate contents	43	BRE SD1 Suite D
Organic matter content	10	
Rock tests		
Uniaxial compressive strength - Soil	1	

Note 1 : Test type names based on Thomas Telford (2022) Table 15.4 and Bill K.



4.2 Geoenvironmental Testing

Geoenvironmental laboratory testing was scheduled by Atkins on selected soil, groundwater and surface water samples recovered during the fieldwork and monitoring period. The testing was carried out by SOCOTEC at the environmental chemistry laboratory at Bretby, near Burton-on-Trent, in accordance with test methods as stated within the test reports. The scope of testing is listed in Table 7 and the results are presented in Appendix F.

TABLE 7 SUMMARY OF GEOENVIRONMENTAL LABORATORY TESTS

TYPE	QUANTITY	REMARKS
Suite E – Soil Samples	46	Arsenic, Boron, Cadmium, Chromium (total), Chromium (hexavalent), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Barium, Iron, Manganese, Magnesium, Asbestos (and subsequent quantification if identified), pH, Soil organic matter (SOM), Sulphate, Sulphide, Ammoniacal Nitrogen as N, Nitrate, Nitrite, Chloride, Nitrogen, Calcium, Cyanide (total), Cyanide (free), Speciated polycyclic aromatic hydrocarbons (17 PAHs), Phenols (total monohydric), Speciated TPHCWG aliphatic/aromatic split C5 – C40, BTEX (benzene, toluene, ethylbenzene & xylenes).
Suite F – Soil Samples for Leachate Analysis	35	Leachate Preparation, pH, Ammonia, Ammonium as NH ₄ , Arsenic, Boron (water soluble), Cadmium, Chromium (total), Hexavalent Chromium, Copper, Lead, Mercury, Nickel, Zinc, Cyanide (complex), Cyanide (free), Cyanide (total), Chloride, Nitrate, Nitrite, Sulphate, Sulphide, Phenols (total monohydric), TPH CWG aliphatic/aromatic split C5 – C40, Speciated polycyclic aromatic hydrocarbons (17 PAHs), Total Organic Carbon (TOC)
Suite G – Groundwater Samples	14	Arsenic, Boron, Cadmium, Chromium (total), Chromium (hexavalent), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Vanadium, Barium, Iron, Manganese, Magnesium, Chemical Oxygen Demand, Biological Oxygen Demand, pH, Electrical Conductivity, Water soluble sulphate (as SO ₄), Sulphide, Ammoniacal Nitrogen as N, Nitrate, Nitrite, Chloride, Nitrogen, Calcium, Cyanide (total), Cyanide (free), Cyanide (complex), Speciated polycyclic aromatic hydrocarbons (17 PAHs), Phenols (total monohydric), BTEX and MTBE, TPH CWG speciated aliphatic / aromatic split C5 – C40.



TYPE	QUANTITY	REMARKS
Suite G with additional Chlorine, Cations and Anions. (Groundwater)	1	Taken from hand dug inspection pit.
Suite H – Surface Water	3	Arsenic, Boron, Cadmium, Chromium (total), Chromium (hexavalent), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Barium, Iron, Manganese, Magnesium, Chemical Oxygen Demand, Biological Oxygen Demand, Hardness (CaCO ₃), pH, Electrical Conductivity, Water soluble sulphate (as SO ₄), Sulphide, Ammoniacal Nitrogen as N, Nitrate, Nitrite, Chloride, Nitrogen, Calcium, Cyanide (total), Cyanide (free), Cyanide (complex), Speciated polycyclic aromatic hydrocarbons (17 PAHs), Phenols (total monohydric), BTEX and MTBE, TPH CWG speciated aliphatic / aromatic split C5 – C40.
Suite I – Hazardous Waste Suite	1	As per BS EN 12457-2 (2002)



5 REFERENCES

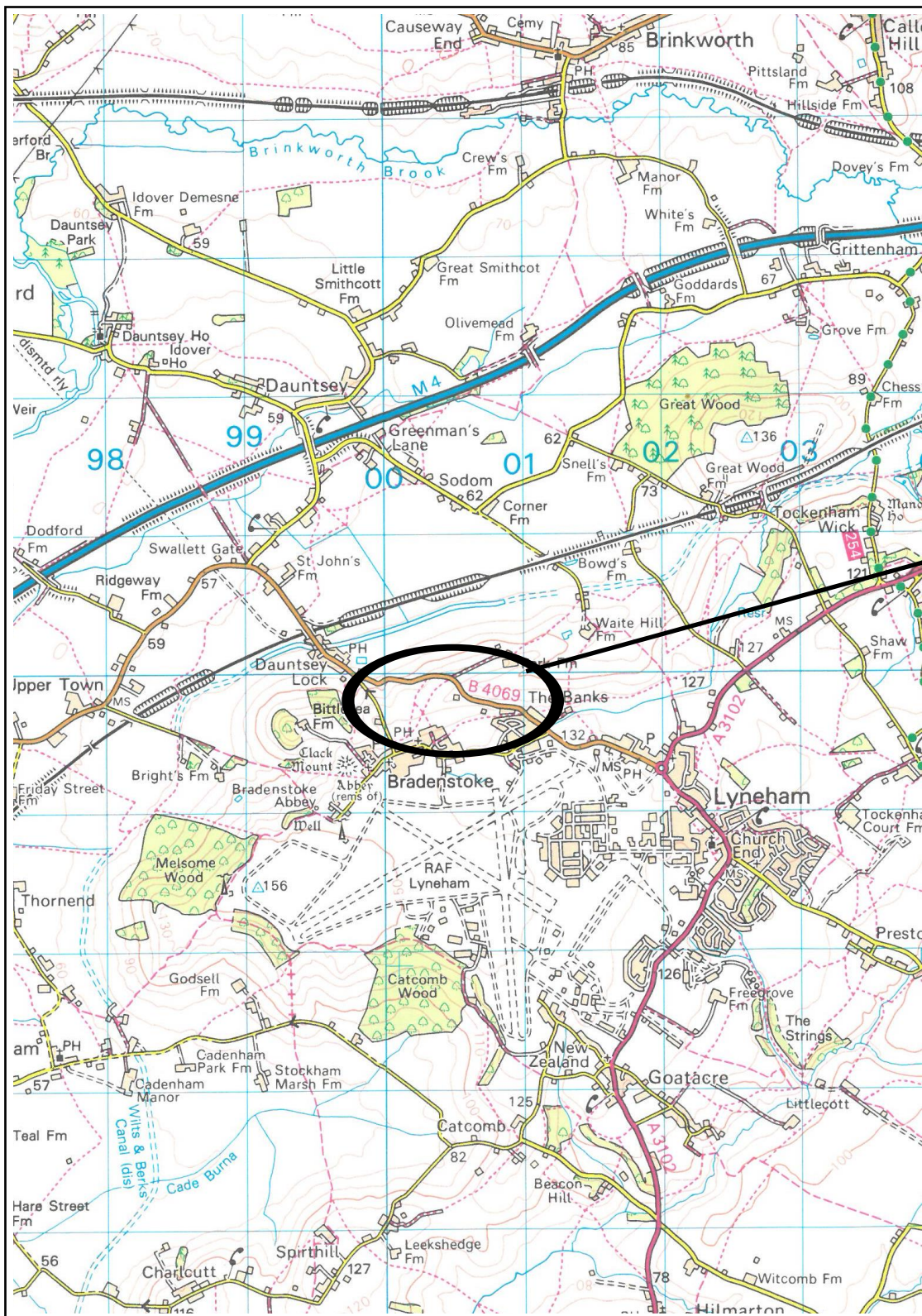
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- BS 10175:2011+A2:2017 : Investigation of potentially contaminated sites – Code of practice
- BS 5930:2015+A1 : 2020 : Code of practice for ground investigations.
- BS EN 1997-2 : 2007 (Incorporating corrigendum June 2010) : Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing.
- BS EN ISO 14688-1:2018 : Geotechnical investigation and testing - Identification and classification of soil - Part 1 Identification and description
- BS EN ISO 14688-2:2018 : Geotechnical investigation and testing - Identification and classification of soil - Part 2 Principles for a classification
- BS EN ISO 14689:2018 : Geotechnical investigation and testing – Identification, description and classification of rock
- BS EN ISO 22282-1:2012 : Geotechnical investigation and testing – Geohydraulic testing – Part 1 General rules
- BS EN ISO 22475-1 : 2006 (reproduced 2007) : Geotechnical investigation and testing – Sampling methods and groundwater measurements - Part 1 Technical principles for execution.
- BS EN ISO 22476-1 : 2012 (Incorporating corrigendum January 2013) : Geotechnical investigation and testing — Field testing - Part 1: Electrical cone and piezocone penetration test.
- BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing - Part 3 Standard penetration test.
- ISRM : 2007 : The Complete ISRM Suggested Methods for Rock Characterisation, Testing and Monitoring (1974-2006). Commission on Testing Methods, International Society for Rock Mechanics (Editors Ulusay R & Hudson JA).
- UK Specification for Ground Investigation. Third edition : 2022 : ICE Publishing. Thomas Telford Ltd



APPENDIX A
FIGURES AND DRAWINGS

Site Location Plan	A1
Site Plan (B4069)	A2.1
Site Plan (Landslide Area Boreholes)	A2.2
Site Plan (Landslide Area Trial Pits)	A2.3
Site Plan (Spring)	A2.4

Site Location Plan



THE SITE

Reproduced from the 2016 Ordnance Survey 1:50 000 scale Landranger Map No 173 by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office, © Crown copyright, SOCOTEC UK Limited. All rights reserved. Licence Number 100006060

<p>Notes: Scale 1:50 000</p>	<p>Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council</p>	<p>Figure A1</p>
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Notes:

Scale:

1:1500

Surveyed By:

SOCOTEC UK Ltd

Surveyed Date:

05/01/2023

Key:

● Rotary Cored Borehole

Site Plan (B4069)



Project ID:

H2060-22

Project Title:

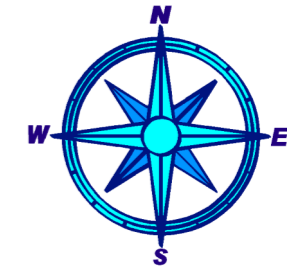
Lyneham Banks


Client:

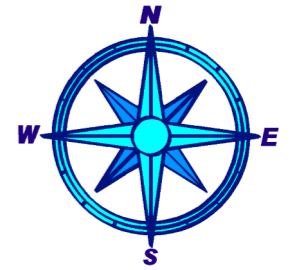
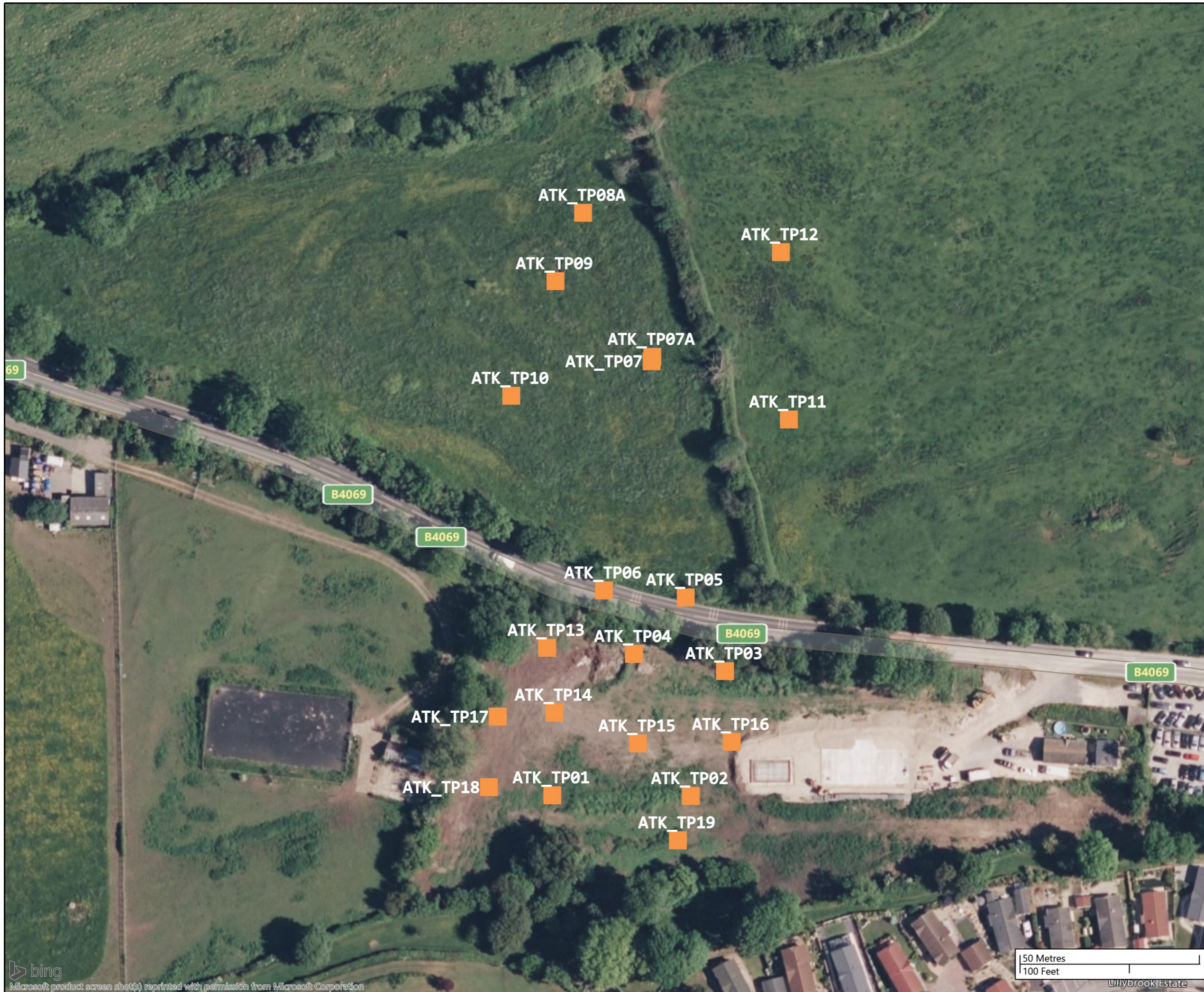
Wiltshire Council

Figure:

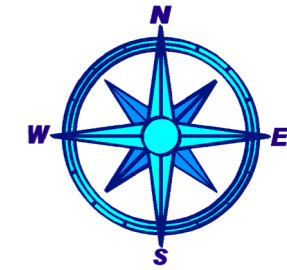
A2.1



Notes:
Scale: 1:1000
Surveyed By: SOCOTEC UK Ltd
Surveyed Date: 05/01/2023
Key: <ul style="list-style-type: none"> ● Rotary Core Boreholes ● Rotary Openhole Boreholes
Site Plan (Landslide Area Boreholes)
 SOCOTEC
Project ID: H2060-22
Project Title: Lyneham Banks
Client: Wiltshire Council
Figure: A2.2



Notes:
Scale: 1:1000
Surveyed By: SOCOTEC UK Ltd
Surveyed Date: 05/01/2023
Key: <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 10px; height: 10px; background-color: orange; margin-right: 5px;"></div> Trial Pits </div>
Site Plan (Landslide Area Trial Pits)
 SOCOTEC
Project ID: H2060-22
Project Title: Lyneham Banks
Client: Wiltshire Council
Figure: A2.3



Notes:

Scale:
1:750

Surveyed By:
SOCOTEC UK Ltd

Surveyed Date:
05/01/2023

Key:

- Rotary Cored Borehole
- Inspection Pit
- Trial Pit

Site Plan (Spring)



Project ID:
H2060-22

Project Title:
Lyneham Banks

Client:
Wiltshire Council

Figure:
A2.4



APPENDIX B
EXPLORATORY HOLE RECORDS

Key to Exploratory Hole Records	Key
Hammer Energy Ratio Reports	Hammer References: TH64, AR3259, AR3787
Borehole Logs	ATK_BH01 to ATK_BH17 and ATKRD_BH01 to ATKRD_BH11
Trial Pit Logs	ATK_TP01 to ATK_TP19 and ATKRD_TP01
Hand Dug Inspection Pit Log	ATKRD_IP01 and ATKRD_IP02



Key to Exploratory Hole Records

SAMPLES

Undisturbed

U	Driven tube sample	} nominally 100 mm diameter and 100% recovery unless otherwise stated
UT	Driven thin wall tube sample	
TW	Pushed thin wall tube sample	
P	Pushed piston sample	
CBR	CBR mould sample	
BLK	Block sample	
C	Core sample (from rotary core) taken for laboratory testing.	

Disturbed

D	Small sample (including samples recovered from SPT)
B	Bulk sample
LB	Large Bulk sample (comprising more than one container as required)

Other

W	Water sample	
G	Gas sample	
ES	Soil sample	} Environmental chemistry samples (in more than one container where appropriate)
EW	Water sample	

Comments to samples

Sequential sample reference numbers are assigned to every sample taken during hole construction.

NR - No Recovery. Used where tube sampling has been attempted but no sample obtained (for whatever reason).

Samples not shown on exploratory hole logs:

- subsamples / specimens taken for on-site testing, eg point load testing
- samples taken from borehole installations (ie water or gas) after hole construction

DYNAMIC SAMPLING

Dynamic sampling includes 'window' and 'windowless' sampling methods, with and without a sample liner respectively

DYS	Dynamic sampling range showing tube / liner recovery (rec.) and diameter. Material retained as separate samples.
L	Retained complete liner sample (with sample reference number)

IN SITU/FIELD TESTS

SPT S or SPT C	Standard Penetration Test, open shoe (S) or solid cone (C). The Standard Penetration Test is defined in BS EN ISO 22476-3:2005+A1:2011 . The open shoe configuration is used without a sample liner unless shown otherwise. Samples recovered by SPT open shoe are shown as type D. The incremental blow counts are given in the Field Records column; each increment is 75 mm unless stated otherwise and any penetration under self-weight in mm (SW) is noted. Where the full 300 mm test drive is achieved the total number of blows for the test drive is presented as N = ** in the Test column. Where the test drive blows reach the limiting value (usually 50) the total blow count beyond the seating drive is given (without the N = prefix). See Note 7 also.
IV	<i>in situ</i> /field vane shear strength, peak (p) and remoulded (r), kPa
HV	Hand vane shear strength, peak (p) and remoulded (r), kPa
PP	Pocket penetrometer test, converted to shear strength, kPa
KFH, KRH, KPI	Permeability tests : KFH = falling head, KRH = rising head, KPI = packer inflow (water pressure test). Results presented on separate report sheets.
PID	VOC concentration using hand-held photo-ionisation detector, ppmv

DRILLING RECORDS

Classification of discontinuity state - as defined in BS 5930:2015+A1:2020

TCR	Total Core Recovery, %
SCR	Solid Core Recovery, %
RQD	Rock Quality Designation, %
If	Fracture spacing, mm - presented as minimum, mode (or 'typical' value) and maximum spacing.
FI	Fracture Index - presented as number of fractures per metre. (Used as alternative to Fracture Spacing)
NI	Non-intact - used to indicate where the core is fragmented (ie non-Solid Core).
NA	Not-applicable - used where a measurement is inappropriate (eg for non-rock materials, zones of no recovery)
NIDD	Non-intact Drilling Induced – used to indicate where rock believed to be non-fractured in the ground has been recovered as Non-intact due to the drilling process. (Used only where specified)
NDP	No Discontinuities Present – used to indicate where core is non-fractured. (Used only where specified as alternative representation to showing a single If value for the depth range of non-fractured core.)
CRF	Core Recovered in the Following run (length in m) – used to indicate length adjustment to TCR (and SCR, RQD and If accordingly) where slipped/dropped core from a core run has been recovered in the subsequent run.
AZCL	Assessed Zone of Core Loss – used to indicate estimated depth range corresponding to core loss (for TCR<100 %). Assumed to be at the start of the core run where no judgement is possible. Not shown for core loss less than 5 %.

Flush returns – presented as estimated percentage in the Records column, with colour where relevant.

Notes:
See report text for full references of standards.
Updated June 2021 v1.3 col



Key to Exploratory Hole Records

GROUNDWATER



Groundwater entry



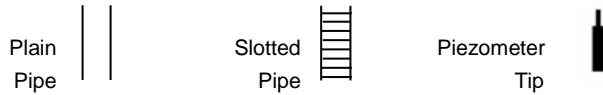
Depth to groundwater after observation period

INSTALLATIONS

Any installations are shown on the Exploratory Hole Record in the rightmost Backfill column with appropriate graphic.

Standpipe/ piezometer

- SP Standpipe
- SPIE Standpipe piezometer
- PPIE Pneumatic piezometer
- EPIE Electronic piezometer



Inclinometer or Slip Indicator

- ICE Biaxial inclinometer
- ICM Inclinometer tubing for use with probe
- SLIP Slip indicator



Pressure Cells

- ESET Electronic settlement cell/gauge
- ETM Magnetic extensometer settlement point

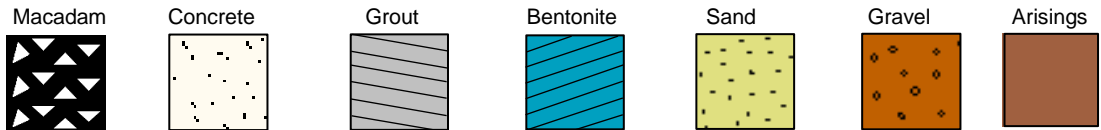


- EPCE Electronic embedment pressure cell
- PPCE Electronic push-in pressure cell



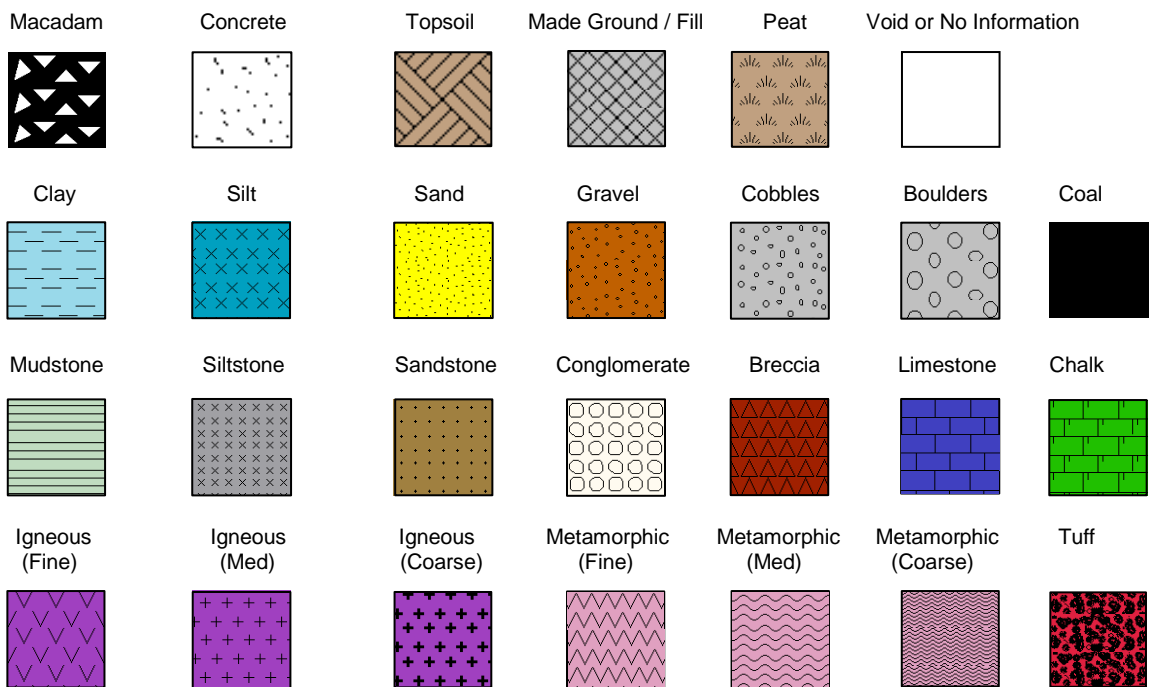
INSTALLATION / BACKFILL LEGENDS

A legend describing the installation is shown in the rightmost column. Legend symbols used to describe the backfill materials are indicated below.



STRATUM LEGENDS

The legend symbols used for graphical representation of soils, rocks and other materials on the borehole logs are shown below. For soils with significant proportions of secondary soil types, a combination of two or more symbols is used. Note that the Made Ground / Fill stratum legend does not differentiate between engineered and non-engineered anthropogenic materials.



Notes:
See report text for full references of standards.
Updated June 2021 v1.3.col



Key to Exploratory Hole Records

NOTES

- 1 **Geological materials** are described in accordance with BS 5930:2015+A1:2020, which is compliant with BS EN ISO 14688-1:2018 and 14689-1:2018 for soils and rocks respectively.
- 2 The **consistency** determined during description for fine soils (clay and silt) is reported for strata where undisturbed samples are available. Where the logger considers that the samples may not be representative of the in situ condition, for whatever reason, the reported consistency may be omitted, or qualified using the terms *Probably* (where the logger is reasonably confident of the assessment, or *Possibly* where there is less certainty.
- 3 The presence of **very coarse particles** (cobbles and boulders) is included in the stratum descriptions on logs using the proportional terminology of BS 5930 where possible. However, due to their relatively large size in relation to the diameter of boreholes, and volumes of samples recovered, these records may not be fully representative of their size and frequency in the ground. Where sample mass precludes a reliable estimate of the proportion of very coarse particles, their presence may be described using undefined qualitative terms, eg occasional, frequent, etc, or by noting the number of cobbles/boulders observed.
- 4 The **declination of bedding and joints** is given with respect to the normal to the core axis, ie perpendicular to the direction of drilling. In a vertical borehole this will therefore correspond to the dip.
- 5 The assessment of **SCR, RQD and Fracture Spacing** excludes all non-natural fractures (ie drilling induced) where these can be positively identified.
- 6 Observations of discernible **groundwater entries** during the advancement of the exploratory hole are given at the foot of the log and in the Legend column. The absence of a recorded groundwater entry should not, however, be interpreted as a groundwater level below the base of the borehole. Under certain conditions groundwater entry may not be observed, for instance, drilling with water flush or overwater, or boring at a rate faster than water can accumulate in the borehole. Similarly, where water entry observations do exist, groundwater may also be present at higher elevations in the ground than where recorded in the borehole. In addition, where appropriate, water levels in the hole at the time of recovering individual samples or carrying out in situ tests and at shift changes are given in the Records column.
- 7 The borehole logs present the results of **Standard Penetration Tests** recorded in the field without correction or interpretation. However, in certain ground conditions (eg high hydraulic head or where very coarse particles are present) some judgement may be necessary in considering whether the results are representative of in situ mass conditions.
- 8

Date	Time
Casing	Water

 Overnight pauses in hole progress are shown by a horizontal line together with records of casing depth and water level at the start and end of shift, together with the corresponding date and time. Casing depths and water levels are also shown at the time of tube sampling and Standard Penetration Tests.

REFERENCES

- 1 BS EN ISO 14688-1:2018 : Geotechnical investigation and testing - Identification and classification of soil. Part 1 Identification and description. British Standards Institution
- 2 BS EN ISO 14689 : 2018 : Geotechnical investigation and testing - Identification and classification of rock. British Standards Institution
- 3 BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing. Part 3 Standard penetration test. British Standards Institution
- 4 BS 5930:2015+A1:2020 : Code of practice for ground investigations. British Standards Institution



Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dynamic Sampling Uk Ltd
Unit 8 Victory Park
Victory Road
Derby
DE24 8ZF

Hammer Ref: TH64
Test Date: 17/03/2022
Report Date: 17/03/2022
File Name: TH64.spt
Test Operator: [REDACTED]

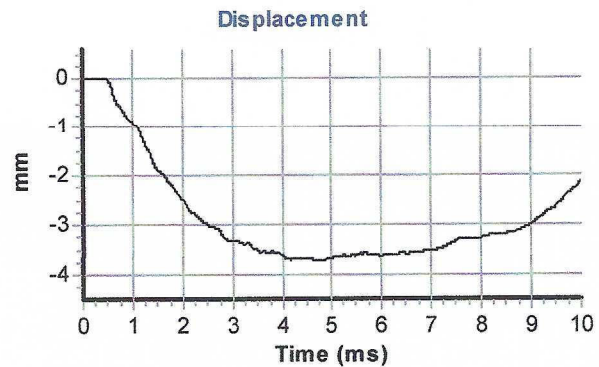
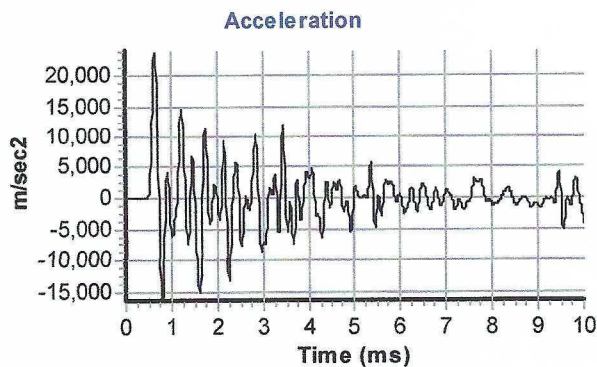
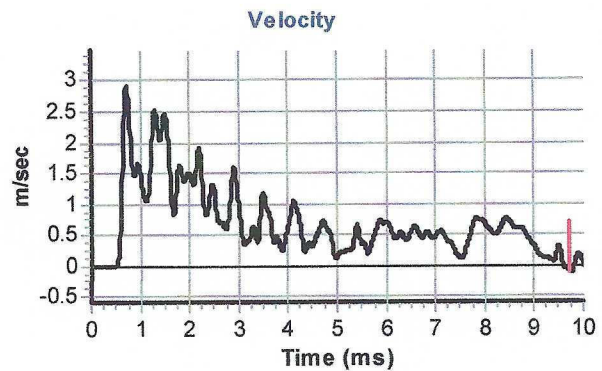
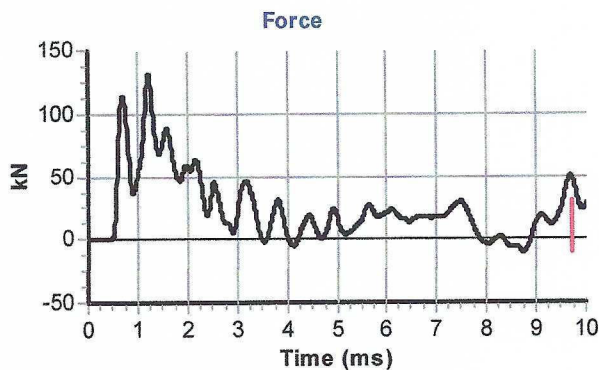
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.5
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 62901
Accelerometer No.2: 62902

Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
String Length L (m): 10.0

Comments / Location



Calculations

Area of Rod A (mm²): 970
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 290

Energy Ratio E_r (%): **61**

Signed: [REDACTED]
Title: Operations Manager

The recommended calibration interval is 12 months



SOCOTEC

**Socotec Central
Progress close
CV2 3TF**

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

SPT Hammer Ref: AR3259
Test Date: 15/09/2022
Report Date: 16/09/2022
File Name: AR3259 Cert.spt
Test Operator: JM.KR

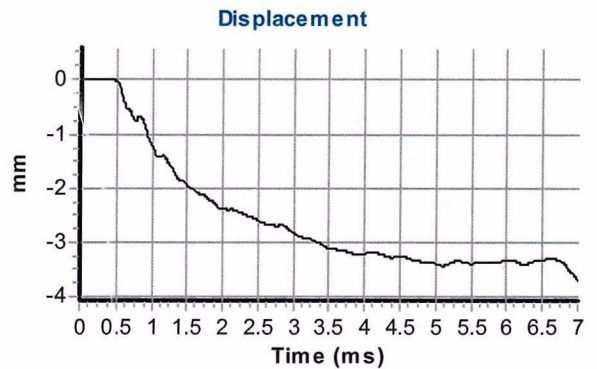
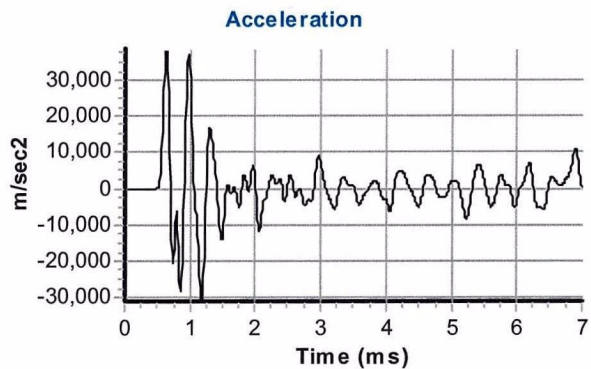
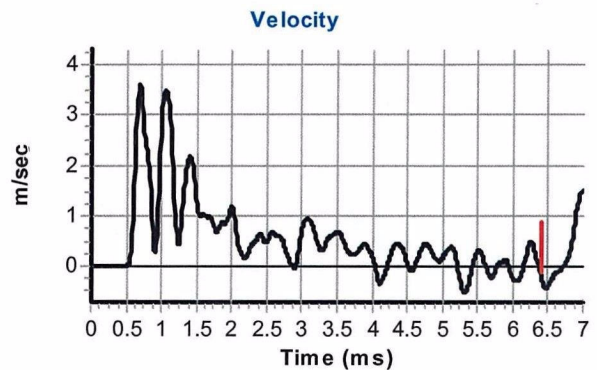
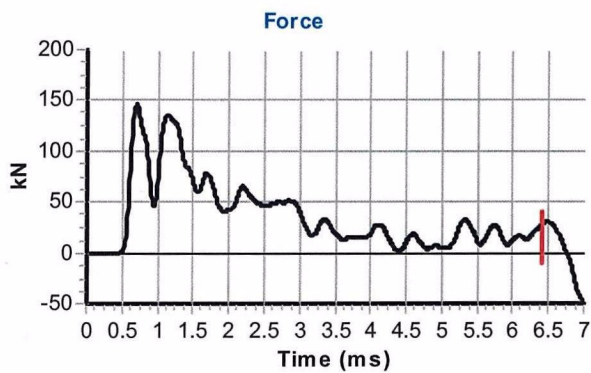
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 72570
Accelerometer No.2: 72571

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 15.0

Comments / Location



Calculations

Area of Rod A (mm²): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 311

Energy Ratio E_r (%): 66

Signed: [REDACTED]
Title: Depot Supervisor



SOCOTEC

**Socotec Central
Progress close
CV2 3TF**

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

SPT Hammer Ref: AR3787
Test Date: 15/09/2022
Report Date: 16/09/2022
File Name: AR3787 Cert.spt
Test Operator: JM.KR

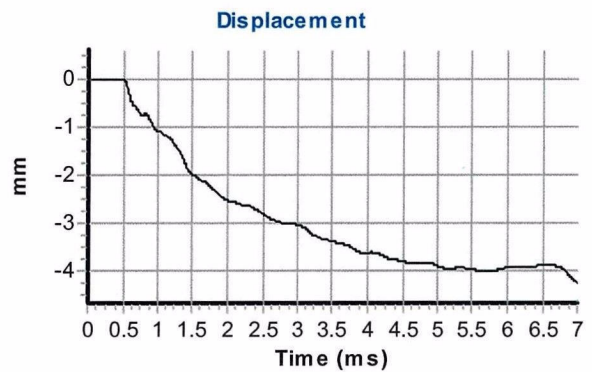
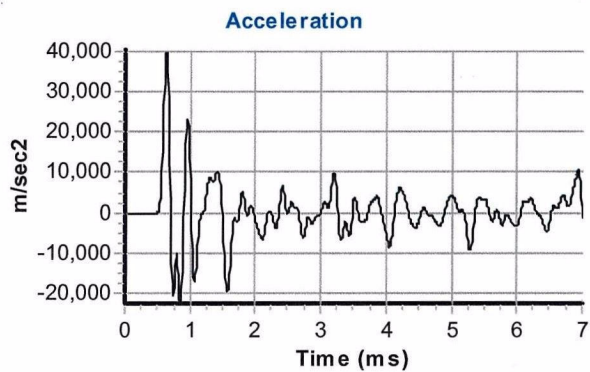
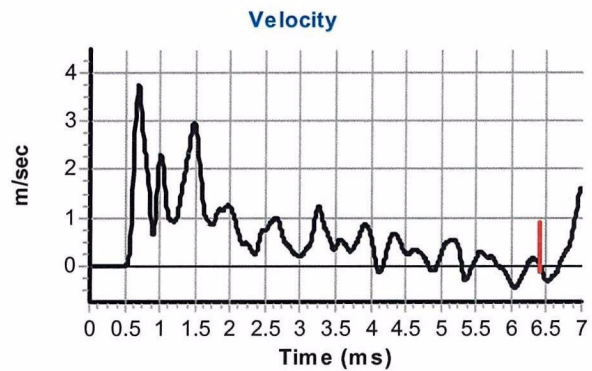
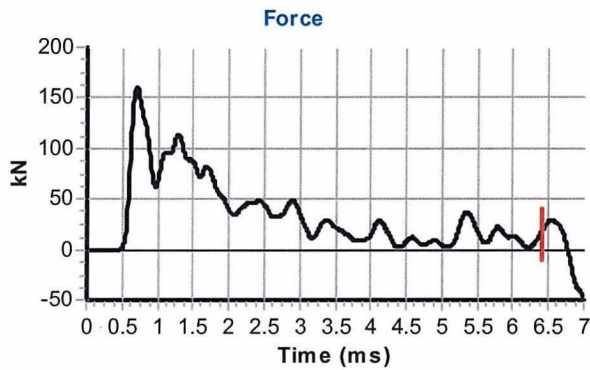
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 72570
Accelerometer No.2: 72571

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 15.0

Comments / Location



Calculations

Area of Rod A (mm²): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 310

Energy Ratio E_r (%): 65

Signed: [REDACTED]
Title: Depot Supervisor

Borehole Log



Checked [Redacted]	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level 131.66 mOD Coordinates E 400769.00 National Grid N 179726.77 System
	0.00 - 15.00	05 Dec 22 - 06 Dec 22	Rotary open holing from 0.00m to 15.00m.	Comacchio 205.	SS	SS	05 Dec 22	Depth 15.00	Dia. (mm) 127	Depth 1.50	Dia. (mm) 127	Depth 0.00 - 15.00	Remarks No groundwater observed.	
Approved [Redacted]														

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
05 Dec 22	0800	0.00 - 0.40	B 3									(0.40)	+131.26	[Pattern]	Soft brown gravelly CLAY. Gravel is angular to subangular fine to coarse of limestone, brick and concrete. Frequent roots and rootlets. (MADE GROUND)				Raised Cover	
	Dry	0.40	D 2									0.40			Soft brown gravelly silty CLAY. Gravel is angular to subangular fine to coarse of limestone, brick and concrete. Occasional rootlets. (MADE GROUND)					
		0.40	ES 1									(0.40)								
		0.50	D 5									0.80	+130.86	[Pattern]	Very soft light brown slightly gravelly CLAY. Gravel is angular to subangular fine to medium of limestone and brick. Frequent white shell fragments (<5mm). (MADE GROUND)				EPIE	
		0.50 - 0.80	B 6									(0.80)								
		0.50	ES 4									1.60	+130.06	[Pattern]	Soft brown CLAY. (Driller's description) (Probable OXFORD CLAY FORMATION)					
		0.80 - 1.20	B 9									(1.30)								
		1.00	D 8									2.90	+128.76	[Pattern]	Firm grey CLAY. (Driller's description) (Probable OXFORD CLAY FORMATION)				EPIE	
		1.00	ES 7									(12.10)							EPIE	
06 Dec 22	0800																			
1.20	9.00																			

General Remarks Termination Reason: Borehole complete.	Hard Boring / Chiselling		Groundwater Entries	
	Depths	Duration (mins)	No.	Depth
				Remarks
				Sealed

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project	Lyneham Banks	Status	Scale	Borehole
	Project No.	H2060-22			
	Carried out for	Wiltshire Council		Printed	11 May 2023 13:09:00
					© Copyright SOCOTEC UK Limited
					AGS
					ATK_BH01
					Sheet 1 of 2

Borehole Log



Checked 	Depth	Dates	Method Rotary open holing from 0.00m to 15.00m.	Equipment Comacchio 205.	Rig Crew SS	Logger SS	Logged 05 Dec 22	Hole		Casing		Depth Related Remarks		Ground Level 131.66 mOD	Coordinates E 400769.00 N 179726.77	System
	0.00 - 15.00	05 Dec 22 - 06 Dec 22						Depth	Dia. (mm)	Depth	Dia. (mm)					
Approved 								15.00	127	1.50	127					

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill																	
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail																					
10																																						
11																																						
12																																						
13																																						
14																																						
15	05 Dec 22 1615 06 Dec 22 1615	1.50 1.50	0.00 0.60										15.00	+116.66			Firm grey CLAY. (Driller's description) (Probable OXFORD CLAY FORMATION)																					
16																																						
17																																						
18																																						
19																																						
20																																						
General Remarks Termination Reason: Borehole complete.																Hard Boring / Chiselling Depths Duration (mins)			Tool		Groundwater Entries No. Depth Remarks			Sealed														

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project	Lyneham Banks	Status FINAL	Scale	1:50	Borehole ATK_BH01
	Project No.	H2060-22		Printed	11 May 2023 13:09:00	
Carried out for	Wiltshire Council			© Copyright SOCOTEC UK Limited		Sheet 2 of 2

Borehole Log



Checked [Signature]	Depth 0.00 - 6.00 6.00 - 20.00	Dates 10 Nov 22 - 10 Nov 22 10 Nov 22 - 15 Nov 22	Method Dynamic windowless sampling from 0.00m to 6.00m Rotary coring from 6.00m to 20.00m.	Equipment Comacchio 205 Comacchio 205	Rig Crew SS/OM SS/OH	Logger HP HP	Logged 15 Nov 22 15 Nov 22	Hole Depth 20.00	Casing Dia. (mm) 3.00 125	Depth Related Remarks Depth 0.00 - 20.00 Remarks No groundwater observed due to drilling method.	Ground Level 125.98 mOD	Coordinates E 400775.53 N 179758.18
	Approved [Signature]											System

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
09 Nov 22	1011	0.00 - 0.10 0.00 - 1.00	ES 101 DYS	100% rec, dia 100mm	0.00	PID	0.0 ppmv						0.17 (0.17)	+125.81	[Pattern]	Soft dark brown organic slightly gravelly slightly sandy silty CLAY. Gravel is angular to subangular fine to coarse of red brick fragments, sandstone and limestone. Frequent wood fragments. (TOPSOIL)				Raised cover
		0.50 0.50 - 0.70	D 1 ES 102		0.50	PID	0.0 ppmv						(0.93)		[Pattern]	Soft yellowish brown slightly sandy gravelly silty CLAY. Gravel is fine to coarse of sandstone, flint and red brick fragments. (MADE GROUND)				
		0.90 - 1.00 1.00 1.00 - 2.00 1.20 - 1.40	D 101 D 2 DYS ES 103	80% rec, dia 100mm	1.00 - 1.45	SPT S	N=3 (1,0/1,0,1,1) ID AR3259 Er 66% 0.1 ppmv	1.00	Dry				1.10	+124.88	[Pattern]	Very soft becoming firm grey mottled orangish brown slightly sandy silty CLAY. (OXFORD CLAY FORMATION)	1.00 White plastic wrapper (20x10mm).			
		1.90 - 2.00 2.00 - 2.45 2.00 - 3.00	D 102 UT 4 DYS	60% rec, dia 100mm	2.00	HV	p 54kPa, r 9kPa								[Pattern]	1.87-1.95 Band of extremely weak weathered MUDSTONE. Recovered as subangular to subrounded fine to coarse GRAVEL.			EPIE	
		2.50	D 5		2.50	HV	p 121kPa, r 22kPa								[Pattern]	2.00-2.50 Recovered as very soft NI slightly sandy silty CLAY. (over UT range)				
09 Nov 22	1500	2.90 - 3.00	D 103		3.00 - 3.45	SPT S	N=5 (1,2/1,1,1,2) ID AR3259 Er 66%	3.00	Dry				(3.40)		[Pattern]	2.50 Locally stiff.				
10 Nov 22	0800	3.00 - 4.00	DYS	60% rec, dia 102mm	3.00 - 3.45	SPT S	N=5 (1,2/1,1,1,2) ID AR3259 Er 66%								[Pattern]	2.70 Band of extremely weak light grey siltstone.				
		3.90 - 4.00 4.00 - 4.70	D 104 UT 8		3.70	HV	p 54kPa, r 11kPa								[Pattern]	2.90 Band of orangish brown extremely weak weathered mudstone.			EPIE	
		5.00 - 6.00	DYS	100% rec, dia 102mm									4.50 (0.50)	+121.48	[Pattern]	Open hole drilling. No recovery.				
		5.45 - 5.75	CS 105										5.00	+120.98	[Pattern]	Stiff to very stiff dark grey thinly laminated very closely spaced slightly sandy CLAY. Abundant white shell fragments. (OXFORD CLAY FORMATION)				
		5.90 - 6.00	D 106		6.00 - 6.45	SPT S	N=29 (5,6/7,8,7,7) ID AR3259 Er 66%	3.00	Dry						[Pattern]	6.00 Becoming very stiff.			EPIE	
		6.45 - 6.75	CS 107		6.00 - 7.00										[Pattern]					
		6.90 - 7.00	D 108		7.00 - 7.45	SPT S	N=26 (3,4/4,7,7,8) ID AR3259 Er 66%	3.00	3.90						[Pattern]					
10 Nov 22	1630	7.90 - 8.00	D 109		8.00 - 8.45	SPT S	N=34 (3,4/4,7,10,13) ID AR3259 Er 66%	3.00	7.10						[Pattern]	7.90 Band of extremely weak light grey mudstone.				
11 Nov 22	0730	3.00	3.00		8.00 - 9.00										[Pattern]					
		8.90 - 9.00	D 110		9.00 - 9.30	SPT S	50 (5,8/12,36,2 for 4mm) ID AR3259 Er 66%	3.00	7.50						[Pattern]					
		9.50 - 9.80	CS 112		9.00 - 10.00										[Pattern]					
		9.90 - 10.00	D 111												[Pattern]					
															Hole continues on next sheet					

General Remarks Borehole complete.										Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.										Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL		Scale 1:50 Printed 11 May 2023 13:09:02		Borehole ATK_BH02		Sheet 1 of 2

Borehole Log



Checked <div style="background-color: black; width: 15px; height: 10px;"></div>	Depth 0.00 - 6.00 6.00 - 20.00		Dates 10 Nov 22 - 10 Nov 22 10 Nov 22 - 15 Nov 22		Method Dynamic windowless sampling from 0.00m to 6.00m Rotary coring from 6.00m to 20.00m.		Equipment Comacchio 205 Comacchio 205		Rig Crew SS/OM SS/OH		Logger HP HP		Logged 15 Nov 22 15 Nov 22		Hole Depth 20.00		Casing Depth 3.00 Dia. (mm) 125		Depth Related Remarks		Ground Level Coordinates National Grid System	
	Ground Level: 125.98 mOD Coordinates: E 400775.53 National Grid: N 179758.18 System:																					
Approved <div style="background-color: black; width: 15px; height: 10px;"></div>																						

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill		
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail					
					10.00 - 10.28	SPT S	50 (4,11/20,30 for 50mm) ID AR3259 Er 66%	3.00	7.60							(11.00)	Stiff to very stiff dark grey thinly laminated very closely spaced slightly sandy CLAY. Abundant white shell fragments. (OXFORD CLAY FORMATION)					
					10.50	D 113																
					11.00 - 11.40	CS 114																
					11.50 - 11.81	SPT S	50 (2,7/16,17,15,2 for 5mm) ID AR3259 Er 66%	3.00	8.50													
					11.50 - 11.81																	
					12.30 - 12.60	CS 115																
11 Nov 22	1430				12.90	D 116																
14 Nov 22	0730				13.00 - 13.45	SPT S	N=29 (3,4/5,6,8,10) ID AR3259 Er 66%	3.00	10.10			Air/mist flush: 6.00 - 20.00										
	3.00				13.00 - 13.45																	
					13.90 - 14.20	CS 117																
					14.50	D 118																
					14.90 - 20.00	D 125																
					15.60 - 15.90	CS 119																
					15.90	D 120																
					16.00 - 16.45	SPT S	N=43 (6,9/9,10,11,13) ID AR3259 Er 66%	3.00	12.10							16.00	+109.98	Very stiff dark grey locally slightly sandy CLAY. Occasional shell fragment (<10mm). Sand is fine. (OXFORD CLAY FORMATION)				
					16.00 - 16.45																	
					17.00 - 17.10	D 121																
					17.20 - 17.50	CS 122																
					17.20 - 17.50																	
					17.90 - 18.10	D 123																
					17.90 - 18.10																	
					18.70 - 19.00	CS 124																
					18.70 - 19.00																	
					19.00 - 19.37	SPT S	50 (10,14/15,18,17 for 65mm) ID AR3259 Er 66%	3.00	13.30													
					19.00 - 19.37																	
					20.00 - 20.31	SPT S	50 (12,12/20,28,2 for 5mm) ID AR3259 Er 66%	3.00	15.30													
					20.00 - 20.31																	
					20.00 - 20.31																	
					20.00 - 20.31																	
	14 Nov 22	1615																				
	15 Nov 22	1615																				
	3.00	14.80																				
	3.00	15.30																				
General Remarks Borehole complete.																Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:50 Printed 11 May 2023 13:09:02 © Copyright SOCOTEC UK Limited		Borehole ATK_BH02 Sheet 2 of 2	
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Borehole Log



Checked [Signature]	Depth	Dates	Method Hand dug inspection pit from 0.0m to 1.20m. Rotary open holing from 1.20m to 20.00m	Equipment Insulated Hand Tools. Comacchio 205	Rig Crew SS/OM SS/OM	Logger SS SS	Logged 08 Nov 22 08 Nov 22	Hole		Casing		Depth Related Remarks		Ground Level 125.98 mOD	Coordinates E 400781.19 N 179759.26	System
	0.00 - 1.20 1.20 - 12.00	07 Nov 22 - 07 Nov 22 07 Nov 22 - 08 Nov 22						Depth 20.00	Dia. (mm) 131	Depth 2.00	Dia. (mm) 125	Depth	Remarks			
Approved [Signature]																

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel.	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
																Firm grey CLAY. (OXFORD CLAY FORMATION) (Drillers description)				
07 Nov 22 2.00	1630 Damp												12.00	+113.98		Firm to very stiff grey CLAY. (OXFORD CLAY FORMATION) (Driller's description)				
08 Nov 22 2.00	0800 10.10												(8.00)							
08 Nov 22 2.00	1615 18.30																			
																				20.00 ICE

General Remarks Termination Reason: Borehole complete.	Hard Boring / Chiselling		Groundwater Entries		Sealed
	Depths	Duration (mins)	Tool	No.	

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks	Project No. H2060-22	Carried out for Wiltshire Council	Status FINAL	Scale 1:50	Printed 11 May 2023 13:09:02	Borehole ATK_BH02A

Borehole Log



Checked [Signature]	Depth	Dates	Method Rotary open holing from 0.00m to 3.00m Dynamic sampling and rotary coring from 3.00m to 6.00m.	Equipment Comacchio 205 Comacchio 205	Rig Crew SS/DC SS/DC	Logger SS HP	Logged 17 Nov 22 21 Nov 22	Hole		Casing		Depth 0.00 - 6.00	Remarks No groundwater encountered due to drilling technique.	Depth Related Remarks	Ground Level 125.74 mOD	Coordinates E 400778.72 N 179758.39	System
	0.00 - 3.00 3.00 - 6.00	16 Nov 22 - 16 Nov 22 17 Nov 22 - 17 Nov 22						Depth 6.00	Dia. (mm) 127	Depth 145.00	Dia. (mm) 178						
Approved [Signature]																	

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
16 Nov 22	0745																			
16 Nov 22	1615												(3.00)							
17 Nov 22	0730																			
		3.00 - 3.10	D 101	100% rec, dia 102mm									3.00	+122.74		Stiff light brown mottled grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
		3.00 - 4.50	DYS										(1.70)							
		4.50 - 4.60	D 103	100% rec, dia 102mm									4.70	+121.04		Stiff grey mottled light brown silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
		4.50 - 6.00	DYS										(1.30)							
17 Nov 22	1620	5.70 - 6.00	CS 104										6.00	+119.74		END OF EXPLORATORY HOLE				6.00

General Remarks Borehole undertaken to replace lost samples taken between 3.00m - 6.00m. in ATK_BH02. Termination Reason: Borehole complete.	Hard Boring / Chiselling		Groundwater Entries			
	Depths	Duration (mins)	Tool	No.	Depth	Remarks

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project	Lyneham Banks	Status	Scale	1:50	Borehole
	Project No.	H2060-22				
	Carried out for	Wiltshire Council				© Copyright SOCOTEC UK Limited



Borehole Log



Checked		Depth	Dates	Method		Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	Coordinates	National Grid	System		
		0.00 - 7.50 7.50 - 20.00	19 Oct 22 - 20 Oct 22 20 Oct 22 - 25 Oct 22	Dynamic windowless sampling from 0.00m to 7.50m. Rotary coring from 7.50m to 20.00m.		Commachio 205 Commachio 205	SS SS	AF AF	26 Oct 22 26 Oct 22	Depth 20.00	Dia. (mm)	Depth 4.00	Dia. (mm) 178	Depth 0.00 - 20.00	Remarks No groundwater encountered due to water flush.	124.64 mOD	E 400754.08	N 179781.14			
Approved																					
Date	Time	Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Samp / Test	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel	Water Entry	Backfill
19 Oct 22	0815			0.00 - 1.00	DYS	77% rec, dia 102mm											Soft dark grey brown slightly sandy slightly gravelly locally gravelly silty CLAY with occasional subangular to subrounded limestone cobbles. Gravel is angular to subrounded fine to coarse of predominantly limestone with occasional brick, sandstone and concrete. Rare fragments of plastic, glass, metal and polystone. (MADE GROUND)				Raised Cover
				0.30 - 0.60	ES 1									(1.20)							
				0.80	D 101									1.20	+123.44		Firm locally soft to firm brown, grey and dark grey slightly sandy slightly gravelly silty CLAY with occasional subrounded limestone cobbles. Gravel is angular to subrounded of predominantly limestone. Occasional fragments of decaying plant material and rootlets (<1-2mm). (OXFORD CLAY FORMATION)				
				1.00 - 2.00	DYS	100% rec, dia 102mm	1.00 - 1.45	SPT S	N=5 (1,1/1,2,1,1) ID AR3259 Er 66%	0.00	Dry										
				1.50	D 102									(1.30)							
				1.50 - 1.80	ES 2									2.50	+122.14		Firm medium becoming low strength mottled grey slightly sandy silty CLAY with rare rootlets (<1-2mm) and recovered shell fragments. (OXFORD CLAY FORMATION)				
				2.00 - 2.50	UT		2.60	HV	p 74kPa, r 28kPa					2.90	+121.74		Stiff medium strength becoming high strength grey mottled brown slightly sandy silty CLAY with occasional white shell fragments. (OXFORD CLAY FORMATION)				
				2.00 - 3.00	DYS	90% rec, dia 102mm	2.70	HV	p 62kPa, r 25kPa					(0.40)							
				2.30	D 104		2.80	HV	p 56kPa, r 26kPa					2.90							
				3.00 - 3.30	ES 3		2.90	HV	p 102kPa, r 37kPa												
				3.00 - 4.00	DYS	100% rec, dia 102mm	3.00 - 3.45	SPT S	N=20 (4,4/4,4,5,7) ID AR3259 Er 66%	0.00	Dry										
				3.20	D 106		3.20	HV	p 109kPa, r 37kPa												
				3.50 - 3.90	CS 107		3.40	HV	p 112kPa, r 40kPa												
				4.00 - 4.50	UT		3.50	HV	p 109kPa, r 37kPa												
				4.00	D 108																
				4.00 - 5.00	DYS	85% rec, dia 102mm															
				4.70	D 109		4.70	HV	p 155kPa, r 56kPa					(3.60)							
19 Oct 22	1615		Dry	5.00 - 6.50	DYS	33% rec, dia 102mm	4.80	HV	p 174kPa, r 56kPa												
20 Oct 22	0800		Dry				4.90	HV	p 177kPa, r 59kPa	4.00	Dry										
				5.00 - 5.39	SPT S		5.00 - 5.39	SPT S	N=46 (20,5 for 10mm/10,13,11,12) ID AR3259 Er 66%								5.00-6.00 Very soft slightly sandy slight gravelly clay cavings.				
				6.20	D 110		6.20	HV	p 152kPa, r 40kPa												
				6.40	D 111		6.40	HV	p 161kPa, r 47kPa												
				6.50 - 7.50	DYS	100% rec, dia 102mm												6.50-6.70 frequents shell fragments (<35mm) becoming occasionally below 9.00m (<3mm). 6.50-6.90 Cavings.			
				7.05 - 7.40	CS 112																
				7.60	D 113		7.50 - 7.92	SPT S	N=46 (20,5 for 40mm/10,13,11,12) ID AR3259 Er 66%	4.00	Dry							7.30-7.40 frequents shell fragments (<35mm) becoming occasionally below 9.00m (<3mm).			
				8.50	D 114																
				8.60 - 9.00	CS 115																
				9.00	UT																
				9.80	D 116																
20 Oct 22	1615		Dry																		
4.00																					

General Remarks Unable to take hand vanes below 6.50m.										Hard Boring / Chiselling <table border="1"> <tr> <th>Depths</th> <th>Duration (mins)</th> <th>Tool</th> <th>Sealed</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Depths	Duration (mins)	Tool	Sealed					Groundwater Entries <table border="1"> <tr> <th>No.</th> <th>Depth</th> <th>Remarks</th> <th>Sealed</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>				No.	Depth	Remarks	Sealed				
Depths	Duration (mins)	Tool	Sealed																														
No.	Depth	Remarks	Sealed																														
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL				Scale 1:50 Printed 11 May 2023 13:09:02 © Copyright SOCOTEC UK Limited			Borehole ATK_BH03 Sheet 1 of 2																					

Borehole Log



Checked [Signature]	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole	Casing	Depth Related Remarks		Ground Level 124.64 mOD Coordinates E 400754.08 National Grid N 179781.14 System
	0.00 - 7.50 7.50 - 20.00	19 Oct 22 - 20 Oct 22 20 Oct 22 - 25 Oct 22	Dynamic windowless sampling from 0.00m to 7.50m. Rotary coring from 7.50m to 20.00m.	Commachio 205 Commachio 205	SS SS	AF AF	26 Oct 22 26 Oct 22	Depth 20.00	Dia. (mm)	Depth 4.00	Dia. (mm) 178	
Approved [Signature]												

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill	
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail					
21 Oct 22	0730	4.00			10.00 - 10.45	SPT S	N=34 (8,6/8,8,8,10) ID AR3259 Er 66%	4.00	6.10								Very stiff grey slightly sandy locally sandy silty CLAY with occasional locally frequent shell fragments (<10mm) and rare shells. (OXFORD CLAY FORMATION)					
	0730	6.10			11.00																	
					10.95 - 11.30																	
					11.50																	
					12.60																	
					12.46 - 12.80																	
					13.00 - 13.39	SPT S	50 (10,12/14,16,16,4 for 10mm) ID AR3259 Er 66%	4.00	6.10													
					13.50 - 13.81																	
					14.00																	
21 Oct 22	1430	4.00			14.50 - 14.89	SPT S	50 (3,11/14,16,17,3 for 10mm) ID AR3259 Er 66%	4.00	10.10													
24 Oct 22	0800	4.00			15.60																	
	1400	14.00			15.60 - 15.90																	
					16.00 - 16.39	SPT S	50 (10,12/13,17,17,3 for 10mm) ID AR3259 Er 66%	4.00	10.70													
					17.00																	
					17.20 - 17.50																	
					17.50 - 17.86	SPT S	50 (10,13/15,18,17 for 60mm) ID AR3259 Er 66%	4.00	10.70													
					18.50																	
					18.70 - 19.00																	
24 Oct 22	1700	4.00			19.00 - 19.33	SPT S	50 (12,17/19,22,9 for 30mm) ID AR3259 Er 66%	4.00	15.60													
25 Oct 22	0745	4.00			19.60 - 19.90																	
	1040	10.40			20.00 - 20.40	SPT S	50 (8,12/13,14,16,7 for 20mm) ID AR3259 Er 66%	4.00	16.30													
					20.00																	
					19.60 - 19.90																	
	1615	16.30			20.00																	
	1630	16.30																				

General Remarks Unable to take hand vanes below 6.50m.	Hard Boring / Chiselling		Groundwater Entries		Sealed
	Depths	Duration (mins)	Tool	No. Depth Remarks	

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project	Lyneham Banks	Status	Scale	Borehole
	Project No.	H2060-22			
	Carried out for	Wiltshire Council		Printed	11 May 2023 13:09:02
				© Copyright SOCOTEC UK Limited	AGS
					Sheet 2 of 2

Borehole Log



Checked 	Depth 0.00 - 6.45 6.45 - 20.00	Dates 17 Nov 22 - 21 Nov 22 21 Nov 22 - 24 Nov 22	Method Dynamic sampling from 0.00m to 6.45m. Rotary coring from 6.45m to 20.00m.	Equipment Comacchio 205 Comacchio 205	Rig Crew SS/DC SS/DC	Logger HP/ER ER/HP	Logged 28 Nov 22 29 Nov 22	Hole Depth 20.00 Dia. (mm) 127	Casing Depth 6.00 Dia. (mm) 178	Depth Related Remarks Depth 0.00 - 20.00 Remarks No groundwater monitored due to water flush.	Ground Level 122.88 mOD	Coordinates E 400775.33 N 179784.87	System
	Approved 												

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
17 Nov 22	0730	0.00 - 1.00	L 1	80% rec												Soft brownish grey silty gravelly CLAY. Gravel is angular to subangular fine to coarse of concrete and red brick fragments. (MADE GROUND)				
		0.00 - 1.00	DYS																	
17 Nov 22	1625	1.00 - 2.00	L 2	100% rec				0.00	0.90							Light grey medium strong CONCRETE. Aggregate is limestone and sandstone (<2% void space).				
		1.00 - 2.00	DYS																	
17 Nov 22	1625	2.00 - 3.00	L 5	80% rec				1.00	0.90							Soft brownish grey silty gravelly CLAY. Gravel is angular to subangular fine to coarse of concrete and red brick fragments. (MADE GROUND)				
		2.00 - 3.00	DYS																	
18 Nov 22	0730	2.00 - 3.00	DYS	80% rec												Light grey medium strong CONCRETE. Aggregate is limestone and sandstone (<5% void space).				
		2.50	ES 4																	
		3.00 - 3.45	UT 6	60% rec												Soft dark brown slightly gravelly CLAY. Gravel is angular fine to coarse of concrete. (MADE GROUND)				
		3.00 - 4.00	DYS																	
		3.60 - 4.00	L 7													Firm light brown silty CLAY. Frequent white shell fragments (<10mm) (OXFORD CLAY FORMATION)				
		4.00 - 5.00	DYS																	
		4.00 - 5.00	L 9	50% rec				3.00	3.50							Firm light brownish grey gravelly CLAY. Gravel is angular to subangular fine to medium of limestone. (OXFORD CLAY FORMATION)				
		4.00 - 5.00	DYS																	
18 Nov 22	1415	4.90 - 5.00	D 103													Firm light brown silty CLAY. Frequent white shell fragments (<10mm) (OXFORD CLAY FORMATION)				
		5.00 - 5.45	UT 10																	
21 Nov 22	0745	5.00 - 5.45	UT 10	55% rec												Stiff grey brown silty locally sandy CLAY with occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
		5.45 - 6.00	DYS																	
		5.70 - 6.00	L 11													Stiff grey brown silty locally sandy CLAY with occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
		5.80	D 104																	
21 Nov 22	1600	6.00 - 6.45	SPT S					6.00	5.90							Very soft grey brown grey silty sandy CLAY. SPT collapse. (OXFORD CLAY FORMATION)				
		6.00 - 6.45	SPT S																	
22 Nov 22	0745	6.60	D 105													Stiff greyish brown silty CLAY with occasional frequent fine white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
		6.60	D 105																	
		6.80 - 7.00	CS 106													7.00 Slightly sandy silty CLAY.				
		7.60 - 7.90	CS 108																	
		8.00 - 8.45	SPT S					6.00	7.20							8.20-8.60 AZCL.				
		8.00 - 8.45	SPT S																	
		8.80	D 109													8.80 Becoming very stiff.				
		8.80	D 109																	
		9.00 - 9.45	SPT S					6.00	8.30											
		9.00 - 9.45	SPT S																	
		9.40 - 9.70	CS 110																	
		9.70	D 111																	

General Remarks Termination Reason: Borehole complete.										Hard Boring / Chiselling Depths Duration (mins) Tool				Groundwater Entries No. Depth Remarks Sealed											
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.										Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL				Scale 1:50 Printed 11 May 2023 13:09:03 © Copyright SOCOTEC UK Limited				Borehole ATK_BH04 Sheet 1 of 2			

Borehole Log



Checked ████████	Depth	Dates	Method Dynamic sampling from 0.00m to 6.45m. Rotary coring from 6.45m to 20.00m.	Equipment Comacchio 205 Comacchio 205	Rig Crew SS/DC SS/DC	Logger HP/ER ER/HP	Logged 28 Nov 22 29 Nov 22	Hole		Casing		Depth Related Remarks		Ground Level 122.88 mOD	Coordinates E 400775.33	National Grid N 179784.87	System
	0.00 - 6.45 6.45 - 20.00	17 Nov 22 - 21 Nov 22 21 Nov 22 - 24 Nov 22						Depth 20.00	Dia. (mm) 127	Depth 6.00	Dia. (mm) 178						
Approved ████████																	

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
22 Nov 22 6.00	1630 9.00	10.00 - 10.45	CS 112 D 113 B 21		10.00 - 10.45	SPT S	50 (6,8/10,12,13,15 for 70mm) ID AR3259	6.00	9.00	100 NA NA		flush: 6.45 - 20.00 100% rec Grey	(3.00)	+111.38		Stiff greyish brown silty CLAY with occasional frequent fine white shell fragments (<5mm). (OXFORD CLAY FORMATION)					
		10.50 - 10.80 10.80			11.00 - 11.50	SPT S	48 (4,6/7,14,15,12 for 60mm) ID AR3259	6.00	10.10							Stiff grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)					
		12.90 - 13.00			D 115		13.00 - 13.45	SPT S	N=48 (6,7/9,12,13,14) ID AR3259							6.00	10.20	14.00-14.50 Partial weathering of rock fabric. Locally firm silty CLAY.			
23 Nov 22 6.00	0730 10.10	13.50	CS 116 D 117		13.50	SPT S	50 (7,9/11,13,15,11 for 60mm) ID AR3259	6.00	12.30	100 NA NA				+108.38		Very stiff grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)					
		14.40 - 14.50			14.50 - 14.94	SPT S	50 (8,9/15,15,17,3 for 10mm) ID AR3259	6.00	14.40							15.00 Locally gravelly. GRAVEL is angular to subangular fine to medium of mudstone.					
		15.50 - 15.80			CS 118		16.00 - 16.39	SPT S	50 (8,10/10,14,10,10 for 55mm) ID AR3259							6.00	9.40	16.50-17.20 Closely planar smooth clean 45 degrees fractures.			
23 Nov 22 6.00	1630 14.40	17.40 - 17.50	D 120		17.50 - 17.93	SPT S	44 (8,10/10,14,10,10 for 55mm) ID AR3259	6.00	9.40	93 NA NA				(5.50)							
		18.50 - 18.80			CS 121		17.50 - 19.00														
		18.90 - 19.00			D 122		19.00 - 19.45	SPT S	N=37 (5,7/8,8,10,11) ID AR3259							6.00	17.30				
24 Nov 22 6.00	1620 18.50	19.90 - 20.00	D 123		20.00 - 20.35	SPT S	50 (8,14/16,18,16 for 45mm) ID AR3259	6.00	18.50	100 NA NA											20.00 ICE
																END OF EXPLORATORY HOLE					

General Remarks Termination Reason: Borehole complete.													Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:50	Borehole ATK_BH04
			Printed 11 May 2023 13:09:03	

Borehole Log



Checked 	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole	Casing	Depth Related Remarks		Ground Level Coordinates National Grid System
	0.00 - 5.80 5.80 - 20.20	27 Oct 22 - 28 Oct 22 01 Nov 22 - 02 Nov 22	Dynamic windowless sampling from 0.00m to 5.80m. Rotary coring from 5.80m to 20.20m.	Commachio 205 Commachio 205	SS LM/LH	AF AF	31 Oct 22 02 Nov 22	Depth 12.80 20.20	Dia. (mm) 113 93	Depth 6.00	Dia. (mm) 153	
Approved 												

Date	Time	Samples		Field Tests		Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records							Casing	Water			
27 Oct 22	0800	0.00 - 0.30	ES 1	97% rec, dia 102mm	0.40	HV	p 186kPa, r 40kPa				(0.40)	+124.02		Stiff high strength locally greyish brown friable slightly sandy gravelly becoming slightly gravelly silty CLAY. Gravel is angular to rounded fine to coarse of limestone with occasional fragments of limestone aggregate, brick and concrete. Occasional cobbles (<1-2mm). (MADE GROUND)				Raised Cover
		0.00 - 1.00	DYS															
		0.40	D 101		0.40	HV	p 186kPa, r 40kPa											
		0.70 - 1.00	ES 2	100% rec, dia 102mm	1.00 - 1.45	SPT S	N=4 (1,0/1,0,1,2) ID AR3259 Er 66%	1.00	Dry		(0.80)	+123.22		Stiff high strength brown locally mottled yellowish brown grey slightly sandy silty CLAY. Gravel is subangular to rounded fine to coarse of limestone and rare fine fragments of brick. Rare rootlets (1-2mm) and decaying plant remains. (MADE GROUND)				
		0.80	D 102															
		1.00 - 2.00	DYS		1.30	HV	p 51kPa, r 13kPa											
		1.30	D 103		1.30	HV	p 51kPa, r 13kPa											
		1.40 - 1.60	ES 3		1.60	HV	p 59kPa, r 16kPa											
		1.60	D 104		1.60	HV	p 59kPa, r 16kPa											
		1.80	D 105		1.80	HV	p 54kPa, r 22kPa											
		2.00 - 2.55	UT 4		2.00	UT												
27 Oct 22	1700	2.55	Dry		2.60	DYS	95% rec, dia 102mm											
28 Oct 22	0745	2.55	Dry		3.00	D 106												
		3.00	D 106		3.00	HV	p 100kPa, r 22kPa											
		3.20	HV		3.20	HV	p 118kPa, r 22kPa											
		3.60 - 4.00	DYS	80% rec, dia 102mm	3.60 - 4.05	SPT S	N=6 (1,1/1,1,2,2) ID AR3259 Er 66%	2.60	Dry		(2.00)				3.60-4.00 Firm medium strength.			
		3.80	D 107		3.80	HV	p 78kPa, r 16kPa											
		4.00	UT 5		4.50 - 5.60	DYS	100% rec, dia 102mm											
		4.80	D 108		4.80	HV	p 116kPa, r 23kPa											
		5.10	HV		5.10	HV	p 140kPa, r 32kPa											
		5.25	D 109		5.25	HV	p 129kPa, r 30kPa								5.10-5.20 Heavy orangish brown staining through soil mass.			
28 Oct 22	1515	5.80	Dry		5.60 - 5.75	D 110		4.00	Dry		(2.00)							
		5.60 - 6.60	DYS	100% rec, dia 102mm	5.60 - 6.05	SPT S	N=25 (4,5/5,6,6,8) ID AR3259 Er 66%											
01 Nov 22	0800	5.80	Dry		6.00	HV	p 89kPa, r 13kPa											
		6.10 - 6.40	CS 111		6.60 - 7.05	SPT S	N=30 (3,5/7,7,8,8) ID AR3259 Er 66%	5.60	Dry		6.60	+117.82		Very stiff grey slightly sandy locally sandy silty CLAY with occasional locally frequent white and light brownish pink shell fragments (<5mm) and rare shells. (OXFORD CLAY FORMATION)				
		6.60 - 6.80			6.60 - 6.80			6.60 - 6.80										
		6.80 - 8.30			6.80 - 8.30			6.80 - 8.30										
		8.10 - 8.20	D 112		8.30 - 8.72	SPT S	50 (10,10/15,23,12 for 40mm) ID AR3259 Er 66%	6.00	Damp						8.40-8.50 Occasional nodules weak to medium weak grey limestone.			
		8.30	D 1		8.30 - 8.72													
		9.00 - 9.10	D 113		9.80 - 10.21	SPT S	50 (12,11/16,24,10 for 30mm) ID AR3259 Er 66%	6.00	Damp						9.90-9.96 Occasional nodules weak to medium weak grey limestone.			
		9.50 - 9.80	CS 114		9.80 - 10.21													
		9.80	D 2															

General Remarks Termination Reason: Borehole complete.										Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed					
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.										Status FINAL			Scale 1:50 Printed 11 May 2023 13:09:03 © Copyright SOCOTEC UK Limited			Borehole ATK_BH05 Sheet 1 of 3		

Borehole Log



Checked [Signature]	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	124.42 mOD
	0.00 - 5.80 5.80 - 20.20	27 Oct 22 - 28 Oct 22 01 Nov 22 - 02 Nov 22	Dynamic windowless sampling from 0.00m to 5.80m. Rotary coring from 5.80m to 20.20m.	Commachio 205 Commachio 205	SS LM/LH	AF AF	31 Oct 22 02 Nov 22	Depth 12.80 20.20	Dia. (mm) 113 93	Depth 6.00	Dia. (mm) 153	Depth	Remarks	Coordinates	E 400803.95
Approved [Signature]														National Grid	N 179772.08
													System		

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
		10.20 - 10.35	D 115							9.80 - 11.30	100 NA NA						Very stiff grey slightly sandy locally sandy silty CLAY with occasional locally frequent white and light brownish pink shell fragments (<5mm) and rare shells. (OXFORD CLAY FORMATION)				
		10.80 - 10.90	D 116																		
		11.30	D 3					6.00	Damp												
		11.30 - 11.75	SPT S			N=47 (8,12/10,12,12,13) ID AR3259 Er 66%															
		11.30 - 12.80	D 117 D 0					6.00	Damp												
01 Nov 22	1700	12.70 - 12.80	D 117 D 0					6.00	Damp												
02 Nov 22	0800	12.80	D 0			N=43 (7,8/10,10,11,12) ID AR3259 Er 66%															
		12.80 - 14.20	D 118 D 119 D 120 D 4					6.00	Damp												
		12.80 - 13.25	SPT S			N=47 (6,9/10,11,12,14) ID AR3259 Er 66%															
		12.80 - 14.20	D 121 D 122 D 5					6.00	Damp												
		13.80 - 14.10	CS 118																		
		14.10 - 14.20	D 119																		
		14.20 - 14.30	D 120																		
		14.20	D 4																		
		15.20 - 15.50	CS 121																		
		15.60 - 15.70	D 122 D 5					6.00	Damp												
		15.70	D 5			N=50 (8,9/10,13,14,13) ID AR3259 Er 66%															
		16.60 - 16.70	D 123																		
		16.80 - 17.10	CS 124																		
		17.20	D 6																		
		17.40 - 17.70	CS 125					6.00	Damp												
		17.20 - 17.64	SPT S			50 (10,11/11,14,15,10 for 60mm) ID AR3259 Er 66%															
		17.20 - 18.70	D 124 D 125																		
		18.60 - 18.70	D 126																		
		18.70	D 7					6.00	Damp												
		18.70 - 19.08	SPT S			50 (9,15/16,16,15,3 for 0mm) ID AR3259 Er 66%															
		19.30 - 19.60	CS 127																		
		18.70 - 19.08	SPT S																		
		18.70 - 20.20	D 126 D 127																		
		19.30 - 19.60	CS 127																		
02 Nov 22	1700	20.00 - 20.20	Grading to extremely weak mudstone.																		
02 Nov 22	6.00	6.30																			

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling			Groundwater Entries			Sealed
												Depths	Duration (mins)	Tool	No.	Depth	Remarks	

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks		Project No. H2060-22		Carried out for Wiltshire Council		Status FINAL		Scale 1:50		Printed 11 May 2023 13:09:03		Borehole ATK_BH05		© Copyright SOCOTEC UK Limited		AGS		Sheet 2 of 3	
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Borehole Log



Checked [Redacted]	Depth	Dates	Method Dynamic windowless sampling from 0.00m to 5.80m. Rotary coring from 5.80m to 20.20m.	Equipment Commachio 205 Commachio 205	Rig Crew SS LM/LH	Logger AF AF	Logged 31 Oct 22 02 Nov 22	Hole		Casing		Depth Related Remarks		Ground Level 124.42 mOD Coordinates E 400803.95 National Grid N 179772.08 System
	0.00 - 5.80 5.80 - 20.20	27 Oct 22 - 28 Oct 22 01 Nov 22 - 02 Nov 22						Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	
Approved [Redacted]								12.80 20.20	113 93	6.00	153			

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
		20.10 - 20.20	D 128										20.20	+104.22		Very stiff grey slightly sandy locally sandy silty CLAY with occasional locally frequent white and light brownish pink shell fragments (<5mm) and rare shells. (OXFORD CLAY FORMATION) END OF EXPLORATORY HOLE				20.20
20																				
21																				
22																				
23																				
24																				
25																				
26																				
27																				
28																				
29																				
30																				

General Remarks Termination Reason: Borehole complete.	Hard Boring / Chiselling		Groundwater Entries		Sealed
	Depths	Duration (mins)	Tool	No. Depth Remarks	

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project	Lyneham Banks	Status	Scale 1:50 Printed 11 May 2023 13:09:03 © Copyright SOCOTEC UK Limited	Borehole
	Project No.	H2060-22			
	Carried out for	Wiltshire Council			Sheet 3 of 3

Borehole Log



Checked [Signature]	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole	Casing	Depth Related Remarks		Ground Level 134.92 mOD Coordinates E 400770.92 National Grid N 179705.86 System
	0.00 - 3.00 3.00 - 15.00	07 Dec 22 - 07 Dec 22 08 Dec 22 - 09 Dec 22	Dynamic windowless sampling from 0.00m to 3.00m. Rotary coring from 3.00m to 15.00m.	Comacchio 205. Comacchio 205	SS SS	ER ER	12 Dec 22 13 Dec 22	Depth 15.00 Dia. (mm) 178	Depth 3.00 Dia. (mm) 178	Depth 0.00 - 15.00 Remarks No groundwater monitored due to water flush.		
Approved [Signature]												

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
07 Dec 22	0800	0.00 - 0.40	B 3	100% rec, dia 100mm									(0.40)	+134.52	[Pattern]	Soft dark brown gravelly silty CLAY. Gravel is angular to subangular medium to coarse of brick, limestone and concrete. Frequent rootlets (<1mm). (MADE GROUND)				
		0.00 - 1.50	DYS											0.40		[Pattern]	Soft brown gravelly silty CLAY. Gravel is angular to subangular fine to coarse of brick, limestone and concrete. Occasional rootlets. (MADE GROUND)			
		0.40 - 0.80	B 6											(0.40)		[Pattern]				
		0.40	ES 1											0.80	+134.12	[Pattern]	Soft light brown slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of concrete, brick and limestone. Sand is fine to coarse. Frequent rootlets. (MADE GROUND)			
		0.50	ES 1											(0.40)		[Pattern]				
		0.60	D 5											1.20	+133.72	[Pattern]	Firm light brown, yellowish brown mottled grey slightly silty CLAY. (OXFORD CLAY FORMATION)	1.60 Becoming dark brown.		
		0.60	ES 4													[Pattern]				
		0.80 - 1.20	B 9											(1.80)		[Pattern]				
		0.70 - 1.00	CS 101													[Pattern]				
		1.00	D 8													[Pattern]				
		1.00	ES 7												[Pattern]					
		1.10	D 101												[Pattern]					
		1.50 - 3.00	DYS	100% rec, dia 100mm											[Pattern]					
		2.00	D 102												[Pattern]					
		2.50 - 2.70	CS 102												[Pattern]					
		3.50	D 103												[Pattern]					
		3.60 - 4.00	CS 103												[Pattern]					
		4.00	D 105												[Pattern]					
07 Dec 22	1615	3.00	4.50												[Pattern]					
08 Dec 22	0800	3.00	3.90												[Pattern]					
		5.60	D 104												[Pattern]					
		5.70 - 6.00	CS 104												[Pattern]					
		6.70 - 7.00	CS 105												[Pattern]					
		8.30 - 8.50	CS 106												[Pattern]					
		8.50	D 106												[Pattern]					
		9.70 - 10.00	CS 107												[Pattern]					
															[Pattern]					

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.												Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL			Scale 1:50 Printed 11 May 2023 13:09:04 © Copyright SOCOTEC UK Limited		Borehole ATK_BH06 Sheet 1 of 2	

Borehole Log



Checked [Signature]	Depth 0.00 - 3.00 3.00 - 15.00	Dates 07 Dec 22 - 07 Dec 22 08 Dec 22 - 09 Dec 22	Method Dynamic windowless sampling from 0.00m to 3.00m. Rotary coring from 3.00m to 15.00m.	Equipment Comacchio 205. Comacchio 205	Rig Crew SS SS	Logger ER ER	Logged 12 Dec 22 13 Dec 22	Hole Depth 15.00	Dia. (mm) 178	Casing Depth 3.00	Dia. (mm) 178	Depth Related Remarks	Ground Level 134.92 mOD	Coordinates E 400770.92 N 179705.86	System
	Approved [Signature]														

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
08 Dec 22	1615 3.00	10.10	D 107													Stiff grey slightly silty CLAY with common white and pink shell fragments <5mm in diameter. (OXFORD CLAY FORMATION)				
09 Dec 22	0800 3.00	11.00 - 11.30	CS 108						10.50 - 12.00	100 NA NA			(7.50)			11.30-12.00 Possible relict bedding planes, Thinly bedded closely laminated horizontal.				
		11.40	D 108													12.10-12.20 Rare subrounded fine limestone gravel inclusions.				
		12.70 - 13.00	CS 109						12.00 - 13.50	100 NA NA										
		13.00	D 109																	
		14.40	D 110						13.50 - 15.00	100 NA NA										
09 Dec 22	1700 3.00	14.50 - 15.00	CS 110										15.00	+119.92		END OF EXPLORATORY HOLE				15.00

General Remarks Termination Reason: Borehole complete.	Hard Boring / Chiselling		Groundwater Entries	
	Depths	Duration (mins)	No.	Depth
			Remarks	Sealed

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks	Status FINAL	Scale 1:50	Borehole ATK_BH06
	Project No. H2060-22		Printed 11 May 2023 13:09:04	
Carried out for Wiltshire Council			© Copyright SOCOTEC UK Limited	AGS

Borehole Log



Checked [Signature]	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.00m. Dynamic windowless sampling from 1.00m to 4.00m. Rotary coring from 4.00m to 20.00m.	Equipment Insulated Hand Tools. Commachio 205 Commachio 205	Rig Crew SS SS SS	Logger CB KD KD	Logged 28 Nov 22 05 Dec 22 05 Dec 22	Hole		Casing		Depth Related Remarks	Ground Level 131.66 mOD	Coordinates E 400773.75	National Grid N 179726.12	System
	0.00 - 1.00 1.00 - 4.00 4.00 - 20.00	28 Nov 22 - 28 Nov 22 28 Nov 22 - 29 Nov 22 29 Nov 22 - 02 Dec 22						Depth 20.00	Dia. (mm) 152	Depth 3.00	Dia. (mm) 178					
Approved [Signature]																

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
28 Nov 22	0730	0.00 - 0.20	B 3										(0.20)	+131.46	[Pattern]	Very soft to soft brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium of limestone, brick, ceramic and macadam. Sand is fine to coarse. (MADE GROUND)				Raised Cover
	0.60	0.10	D 2										(0.60)		[Pattern]	Very soft to soft brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium of limestone. Sand is fine to coarse. (SOLIFLUCTION MATERIAL)				
		0.20 - 0.80	ES 1										(0.20)	+130.85	[Pattern]	Soft locally firm creamish brown sandy CLAY. Sand is fine to medium. (Weathered OXFORD CLAY FORMATION)				
		0.50	LB 6										(0.20)	+130.66	[Pattern]	Soft to firm orange mottled greyish brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded of sandstone. (OXFORD CLAY FORMATION)	1.00-2.00 Occasional dark brown roots (<5mm)			
		0.60	ES 4										(1.00)		[Pattern]					
		0.80 - 1.20	D 5												[Pattern]					
		1.00	B 9												[Pattern]					
		1.00 - 2.00	ES 7												[Pattern]					
		1.10	DYS	120% rec, dia 100mm											[Pattern]					
		1.50	D 8												[Pattern]					
		1.50	ES 101												[Pattern]					
		1.80	HV												[Pattern]					
28 Nov 22	1615	1.80	D 102												[Pattern]					
29 Nov 22	0730	2.00 - 3.00	DYS	80% rec, dia 100mm	2.00 - 2.45	SPT S	N=5 (1,1/1,1,1,2) ID AR3259 Er 66%	0.00	0.90						[Pattern]					
	2.00														[Pattern]					
	0730														[Pattern]					
	2.00														[Pattern]					
	0.70														[Pattern]					
		2.90	D 103												[Pattern]					
		3.00 - 3.45	UT												[Pattern]					
		3.00 - 3.45	D 10												[Pattern]					
		3.00 - 4.00	DYS	70% rec, dia 100mm											[Pattern]					
		3.80	HV												[Pattern]					
		3.80	D 104												[Pattern]					
		4.00 - 4.45	SPT S												[Pattern]					
		4.40 - 4.70	CS 105												[Pattern]					
		4.50	HV												[Pattern]					
		4.90	D 106												[Pattern]					
		5.00 - 5.44	SPT S												[Pattern]					
		5.80	D 107												[Pattern]					
		6.00 - 6.45	SPT S												[Pattern]					
		6.90	D 109												[Pattern]					
		7.00 - 7.45	SPT S												[Pattern]					
		7.40 - 7.70	CS 110												[Pattern]					
		7.90	D 111												[Pattern]					
29 Nov 22	1615	8.00 - 8.45	SPT S												[Pattern]					
30 Nov 22	0730														[Pattern]					
	3.00														[Pattern]					
	4.10														[Pattern]					
		8.50 - 8.80	CS 108												[Pattern]					
		8.50 - 8.80	CS 112												[Pattern]					
		8.90	D 113												[Pattern]					
		9.00 - 9.45	SPT S												[Pattern]					
		9.50	D 114												[Pattern]					
		9.70 - 10.00	CS 115												[Pattern]					

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed		
															1 1.20 Rose to 1.15 m after 20 minutes. Seepage.		
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:50 Printed 11 May 2023 13:09:04		Borehole ATK_BH07 © Copyright SOCOTEC UK Limited					

Borehole Log



Checked ██████	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.00m. Dynamic windowless sampling from 1.00m to 4.00m. Rotary coring from 4.00m to 20.00m.	Equipment Insulated Hand Tools. Commachio 205 Commachio 205	Rig Crew SS SS SS	Logger CB KD KD	Logged 28 Nov 22 05 Dec 22 05 Dec 22	Hole		Casing		Depth Related Remarks		Ground Level 131.66 mOD	Coordinates E 400773.75 N 179726.12	System
	0.00 - 1.00 1.00 - 4.00 4.00 - 20.00	28 Nov 22 - 28 Nov 22 28 Nov 22 - 29 Nov 22 29 Nov 22 - 02 Dec 22						Depth 20.00	Dia. (mm) 152	Depth 3.00	Dia. (mm) 178	Depth	Remarks			
Approved ██████																

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
					10.00 - 10.45	SPT S	N=45 (6,8/8,11,12,14) ID AR3259 Er 66%	3.00	9.50							Very stiff dark grey fissured silty CLAY. Fissures are 20-40 degrees planar smooth. Frequent white shell fragments. (OXFORD CLAY FORMATION)				
			10.60	D 116																
			11.20 - 11.50	CS 117																
					11.50 - 11.93	SPT S	50 (8,8/12,12,13,13 for 55mm) ID AR3259 Er 66%	3.00	11.00											
			12.50	D 118																
			12.70 - 13.00	CS 119																
					13.00 - 13.44	SPT S	50 (8,9/12,12,14,12 for 60mm) ID AR3259 Er 66%	3.00	12.00											
			13.50	D 120																
			14.20 - 14.50	CS 121																
30 Nov 22 3.00	1615 14.50				14.50 - 14.95	SPT S	50 (6,8/11,14,12,13 for 70mm) ID AR3259 Er 66%	3.00	8.10											
01 Dec 22 3.00	0730 8.10		14.90 - 15.20	CS 122																
			15.70	D 123																
			16.20	D 124																
			17.00	D 125																
			18.10 - 18.50	CS 126																
			18.90	D 127																
			19.50 - 19.80	CS 128																
01 Dec 22 3.00	1400 1615		19.90	CS 129																
02 Dec 22 3.00	17.80 Dry		20.00 - 20.45	SPT S																
					20.00 - 20.45	SPT S	N=48 (6,8/10,11,12,15) ID AR3259 Er 66%	3.00	12.70											

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks		Project No. H2060-22		Carried out for Wiltshire Council		Status FINAL		Scale 1:50 Printed 11 May 2023 13:09:04		Borehole ATK_BH07		© Copyright SOCOTEC UK Limited		AGS		Sheet 2 of 3	
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Borehole Log



Checked [Redacted]	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.00m. Dynamic windowless sampling from 1.00m to 4.00m. Rotary coring from 4.00m to 20.00m.	Equipment Insulated Hand Tools. Commachio 205 Commachio 205	Rig Crew SS SS SS	Logger CB KD KD	Logged 28 Nov 22 05 Dec 22 05 Dec 22	Hole		Casing		Depth Related Remarks	Ground Level 131.66 mOD Coordinates E 400773.75 National Grid N 179726.12 System
	0.00 - 1.00 1.00 - 4.00 4.00 - 20.00	28 Nov 22 - 28 Nov 22 28 Nov 22 - 29 Nov 22 29 Nov 22 - 02 Dec 22						Depth 20.00	Dia. (mm) 152	Depth 3.00	Dia. (mm) 178		
Approved [Redacted]													

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR %	SCR %	RQD %	Water added	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill	
		Casing	Water	Depth	Type & No.	Records	Depth	Type	Records									Casing	Water				Flush details
02 Dec 22	0730																	END OF EXPLORATORY HOLE					
3.00	12.70																						20.45

General Remarks Termination Reason: Borehole complete.															Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed				
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL			Scale 1:50 Printed 11 May 2023 13:09:04 © Copyright SOCOTEC UK Limited			Borehole ATK_BH07 Sheet 3 of 3						

Borehole Log



Checked [Signature]	Depth	Dates	Method Hand dug inspection pit from 0.00m to 0.60m. Dynamic windowless sampling from 0.60m to 5.20m. Rotary coring from 5.20m to 15.00m.	Equipment Insulated Hand Tools. R72 Comacchio 405 R72 Comacchio 405.	Rig Crew DD/CB DD/CB DD/CB	Logger KD KD KD	Logged 09 Nov 22 10 Nov 22 10 Nov 22	Hole		Casing		Depth Related Remarks		Ground Level 125.60 mOD Coordinates E 400836.21 National Grid N 179770.47 System
	0.00 - 0.60 0.60 - 5.20 5.20 - 15.00	09 Nov 22 - 09 Nov 22 09 Nov 22 - 09 Nov 22 09 Nov 22 - 10 Nov 22						Depth 15.00	Dia. (mm) 108	Depth	Dia. (mm)	Depth	Remarks	
Approved [Signature]														

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
		10.00	D 18													Stiff to very stiff dark grey thinly laminated sandy CLAY with frequent white shell fragments. (OXFORD CLAY FORMATION)				
		10.60 - 11.05			SPT S	N=43 (5,10/11,10,11,11) ID TH64 Er 61%	4.60	Dry					10.80	+114.80		Very stiff dark grey thinly laminated slightly sandy silty CLAY. Abundant shell fragments. (OXFORD CLAY FORMATION)	10.50-10.60 Abundant shell fragments.			
		11.60 - 11.90	CS 112							100 NA NA		(1.30)								
		12.00 - 12.10 12.10	D 113 D 19		SPT S	N=37 (4,7/8,9,10,10) ID TH64 Er 61%	4.60	Dry					12.10	+113.50		Very stiff dark grey thinly laminated sandy CLAY. Abundant white shell fragments. (OXFORD CLAY FORMATION)	12.00 Sand of gypsum. Lenses of firm dark grey clay (20x15mm).			
		12.70 - 13.00	C 114							93 NA NA										
		13.50 - 13.60 13.60	D 115 D 20		SPT S	N=36 (4,5/7,9,10,10) ID TH64 Er 61%	4.60	Dry						(2.90)						
		14.20 - 14.50	CS 116							107 NA NA										
10 Nov 22 0.00	1630 Dry	14.90 - 15.00	D 117										15.00	+110.60		END OF EXPLORATORY HOLE				15.00

General Remarks Termination Reason: Borehole complete.										Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council		Status FINAL		Scale 1:50 Printed 11 May 2023 13:09:05 © Copyright SOCOTEC UK Limited		Borehole ATK_BH08 AGS		Sheet 2 of 2	
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Borehole Log



Checked 	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 7.20m Rotary coring from 7.20m to	Equipment Insulated Hand Tools. R72 Comacchio 405 R72 Comacchio 405	Rig Crew DD/CB DD/CB DD/CB	Logger HP HP HP	Logged 16 Nov 22 16 Nov 22 17 Nov 22	Hole Depth 15.00	Casing Dia. (mm) 108	Depth Related Remarks Depth 0.00 - 15.00 Remarks No groundwater strike monitored due to drilling technique.	Ground Level 126.65 mOD	Coordinates E 400868.49 N 179767.86	System
	0.00 - 1.20 1.20 - 7.20 7.20 - 15.00	14 Nov 22 - 14 Nov 22 14 Nov 22 - 15 Nov 22 15 Nov 22 - 17 Nov 22											
Approved 													

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
14 Nov 22	0950	0.00 - 0.20 0.20 - 0.50	B 1 B 2										(0.20) 0.20	+126.45 +126.25		Dark greyish black moderately strong MACADAM. Aggregate is angular to subangular of mixed lithologies and limestone. (HIGHWAY CONSTRUCTION)			Flush Cover	
		0.50 - 1.20 0.70	B 3 ES 2													Orangish grey medium strong CONCRETE. Aggregate is angular fine to coarse of sandstone and flint. <5% void space. Soft brown slightly sandy silty CLAY. Sand is fine to coarse occasional white shell fragments. (OXFORD CLAY FORMATION)			0.80	
		1.20 1.20 - 2.20 1.20 - 2.20 1.20 - 1.50	D 4 L 5 DYS CS 101	100% rec, dia 100mm	1.20 - 1.65 1.20	SPT S HV	N=5 (1,1/1,1,2,1) ID TH64 Er 61% p 62kPa, r 40kPa	1.20	Dry											
		2.10 - 2.20 2.20 - 2.65	D 102 UT 6										(4.25)			1.90-2.20 Orangish brown sandy slightly clayey GRAVEL. Gravel is subangular to subrounded fine to medium of limestone.				
		2.65 - 3.20	L 7		2.85	HV	p 71kPa, r 45kPa													
14 Nov 22	1630	3.10 - 3.20	D 103		3.20 - 3.65	SPT S	N=7 (1,1/2,2,1,2) ID TH64 Er 61%	3.20	Dry											
15 Nov 22	0730	3.20 - 4.20	D 8 L 9 DYS	90% rec, dia 100mm	3.60	HV	p 101kPa, r 92kPa													
		4.10 - 4.20 4.20 - 4.65	D 104 UT 10																	
		4.65 - 5.20 4.65 - 5.20 4.80 - 5.10	L 11 DYS CS 105	91% rec, dia 100mm	5.20 - 5.65	SPT S	N=8 (1,2/2,2,2,2) ID TH64 Er 61%	4.20	Dry							Soft orangish brown slightly sandy silty CLAY. Sand is fine to coarse with occasional shell fragments. (OXFORD CLAY FORMATION)				
		5.20 5.20 - 6.20 5.20 - 6.10	D 12 L 13 DYS	100% rec, dia 100mm																
		6.20 - 6.65	UT 14																	
		6.70 - 6.80 6.70 6.70 - 7.20 6.70 - 7.20 6.90 - 7.20 7.20	D 106 D 15 L 16 DYS CS 107 D 17	100% rec, dia 100mm	7.20 - 7.65	SPT S	N=15 (1,3/3,4,3,5) ID TH64 Er 61%	6.20	Dry											
		7.20																		
		7.20 - 8.70																		
15 Nov 22	1630	8.60 - 8.70	D 108		8.70 - 9.15	SPT S	N=15 (1,3/4,3,4,4) ID TH64 Er 61%	8.70	Dry											
16 Nov 22	0700	8.70	D 18																	
		8.70																		
		9.40 - 9.70	CS 109																	
		9.80 - 9.90 9.90	D 110 D 19		9.90 - 10.35	SPT S	N=17 (1,3/4,4,4,5) ID TH64 Er 61%	9.00	Dry											

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.												Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL			Scale 1:50 Printed 11 May 2023 13:09:05 © Copyright SOCOTEC UK Limited		Borehole ATK_BH09 Sheet 1 of 2	

Borehole Log



Checked		Depth		Dates		Method		Equipment		Rig Crew		Logger		Logged		Hole		Casing		Depth Related Remarks		Ground Level											
[]		0.00 - 1.20 1.20 - 7.20 7.20 - 15.00		14 Nov 22 - 14 Nov 22 14 Nov 22 - 15 Nov 22 15 Nov 22 - 17 Nov 22		Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 7.20m Rotary coring from 7.20m to		Insulated Hand Tools. R72 Comacchio 405 R72 Comacchio 405		DD/CB DD/CB DD/CB		HP HP HP		16 Nov 22 16 Nov 22 17 Nov 22		Depth 15.00 Dia. (mm) 108		Depth Dia. (mm)		Depth Remarks		Coordinates E 400868.49 N 179767.86 System											
Approved		Date		Time		Samples			Field Tests			Samp / Test		Coring		TCR %		Water added		Depth		Level		Legend		Strata Description		Chisel	Water Entry	Backfill			
[]						Depth Type & No. Records			Depth Type Records			Casing Water		Depth (Diameter)		SCR % RQD %		Flush details		Depth (Thickness)		Level		Legend		Main Detail							
10																								Firm to stiff dark grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)									
11				11.30 - 11.40 11.40		D 111 D 20			11.40 - 11.77 SPT S 50 (2,6/8,20,22 for 70mm) ID TH64 Er 61%			9.00 Dry		9.90 - 11.40 80 NA NA		Mist flush: 7.20 - 15.00		100% rec		11.40 +115.25				Very stiff dark grey silty CLAY. Occasional white shell fragments. (OXFORD CLAY FORMATION)		11.00-11.20 Abundant white shell fragments (<7mm).	11.40-11.90 Locally extremely weak mudstone with very closely spaced fractures. Fractures are subhorizontal planar rough.						
12				11.60 - 11.90		CS 112								11.40 - 12.90 100 NA NA																			
13		16 Nov 22 9.00		1630 Dry		12.90 D 21			12.90 - 13.35 SPT S N=36 (3,6/8,10,9,9) ID TH64 Er 61%			9.00 Dry		12.90 - 14.40 100 NA NA				(3.60)															
14		17 Nov 22 9.00		0700 Dry		13.70 - 14.00 CS 114								14.30 - 14.40 14.40		14.40 - 14.85 SPT S N=38 (2,5/7,10,11,10) ID TH64 Er 61%			14.40 Dry		14.40 - 15.00 100 NA NA												
15		17 Nov 22 0.00		1245 Dry		14.90 D 116														15.00 +111.65				END OF EXPLORATORY HOLE				15.00					

General Remarks	Hard Boring / Chiselling		Groundwater Entries			
	Depths	Duration (mins)	No.	Depth	Remarks	Sealed
Termination Reason: Borehole complete.						

Notes	Project		Status	Scale		Borehole	
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Lyneham Banks		FINAL	1:50		ATK_BH09	
	H2060-22			Printed 11 May 2023 13:09:05		© Copyright SOCOTEC UK Limited	
	Wiltshire Council					AGS	
						Sheet 2 of 2	

Borehole Log



Checked 	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic sampling from 1.20 to 4.70m. Rotary coring from 1.20m to 15.00m.	Equipment Insulated Hand Tools. R72 Comacchio 405	Rig Crew DD/CB	Logger KD	Logged 08 Nov 22	Hole Depth 15.00	Casing Dia. (mm) 105	Depth 3.20	Dia. (mm) 153	Depth 1.20 - 15.00	Remarks No groundwater monitored due to drilling technique.	Ground Level 123.23 mOD	Coordinates E 400715.92 N 179801.65	System
	0.00 - 1.20 1.20 - 4.70 4.70 - 15.00	04 Nov 22 - 04 Nov 22 - 07 Nov 22 - 08 Nov 22														
Approved 																

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
04 Nov 22	0800	0.30 - 0.60	B 1													MACADAM - no recovery.			Flush Cover	
		0.60 - 1.20	B 2													CONCRETE recovered of moderately strong light grey subangular fine to coarse GRAVEL. Matrix: aggregate of fine to coarse subangular to subrounded, flint and limestone. 5% voids. (HIGHWAY CONSTRUCTION)				
		0.80 - 1.00	ES 101		0.80	PID	0.1 ppmv									Soft very low strength grey mottled yellowish brown slightly gravelly slightly sandy silty CLAY. Gravel is angular to subangular fine to coarse of macadam. (MADE GROUND)				
		1.20	D 3		1.20 - 1.65	SPT S	N=7 (1,0/1,2,2,2)	1.20	Dry							Soft to firm very low to low strength grey mottled yellowish brown slightly sandy silty CLAY. Frequent white shell fragments. (OXFORD CLAY FORMATION)			1.30	
		1.20 - 2.20	L 3	100% rec, dia 100mm																
		1.20 - 2.20	DYS																	
		1.60 - 1.70	ES 102		1.60	PID	0.0 ppmv													
04 Nov 22	1100	2.00	D 103		2.00	HV	p 35kPa, r 8kPa													
07 Nov 22	0700	2.20 - 2.65	UT 5																	
		2.70	D 6	55% rec, dia 100mm																
		2.70 - 3.20	L 7		3.00	HV	p 164kPa, r 20kPa													
		2.70 - 3.20	DYS																	
		3.00	D 104		3.20 - 3.65	SPT S	N=10 (1,2/3,2,2,3)	3.20	Dry											
		3.20	D 8	80% rec, dia 100mm																
		3.20 - 4.20	L 9																	
		3.20 - 4.20	DYS																	
		3.36 - 3.66	CS 105																	
		4.00	D 106		4.00	HV	p 175kPa, r 34kPa													
		4.20 - 4.65	UT 10																	
		4.70	D 11																	
		5.00	D 120		5.00	HV	FIELD p 168kPa, r 27kPa													
		5.20	D 12		5.20 - 5.65	SPT S	N=25 (2,4/6,6,6,7)	3.20	Dry											
		6.00	D 107							75 NA NA		Mist flush: 4.70 - 6.70	100% rec							
		6.70	D 13		6.70 - 7.15	SPT S	N=21 (2,3/4,5,6,6)	6.70	Dry											
		7.00	D 108							100 NA NA		Water flush: 6.70 - 8.20	100% rec							
		8.00	D 109		8.20 - 8.65	SPT S	N=31 (2,4/6,7,9,9)	8.20	7.60											
		8.20	D 14							100 NA NA									8.20 SP	
		9.50	D 111		9.70 - 10.15	SPT S	N=30 (2,4/4,6,9,11)	3.20	9.00											
		9.70	D 15																	
		9.90	CS 110																	

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.												Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL			Scale 1:50 Printed 11 May 2023 13:09:05 © Copyright SOCOTEC UK Limited		Borehole ATK_BH10 Sheet 1 of 2	

Borehole Log



Checked [Signature]	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 6.70m Rotary coring from 6.70m to 15.00m.	Equipment Insulated Hand Tools. R72 Commachio 405. R72 Commachio 405.	Rig Crew DD/CB DD/CB DD/CB	Logger AF AF AF	Logged 02 Nov 22 02 Nov 22 03 Nov 22	Hole		Casing		Depth Related Remarks		Ground Level 122.65 mOD	Coordinates E 400690.04	National Grid N 179816.62	System
	0.00 - 1.20 1.20 - 6.70 6.70 - 15.00	01 Nov 22 - 01 Nov 22 01 Nov 22 - 02 Nov 22 02 Nov 22 - 02 Nov 22						Depth 15.00	Dia. (mm) 108	Depth 6.20	Dia. (mm) 153	Depth 0.00 - 15.00	Remarks No groundwater strike monitored due to drilling technique.				
Approved [Signature]																	

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
01 Nov 22	0700	0.00 - 1.20 0.00 - 1.20	B 1 ES 1													Macadam over subbase/made ground. Recovered as brown clayey very sandy angular to subangular fine to coarse GRAVEL of mixed lithologies. (Possible MADE GROUND)				Flush Cover
		1.20 1.20 - 2.20 1.20 - 2.20 1.50 - 1.70	D 2 L 3 DYS ES 2	95% rec, dia 100mm	1.20 - 1.65 1.50	SPT S HV	N=4 (1,0/1,1,1,1) ID TH64 Er 61% p 83kPa, r 20kPa	1.20	Dry				1.20	+121.45		Soft to firm medium strength grey mottled yellowish brown slightly sandy silty CLAY with occasional shell fragments. (OXFORD CLAY FORMATION)				
		2.20 - 2.65 2.20 - 3.20 2.20 - 3.20 2.50 2.50 2.70	UT 4 L 6 DYS D 101 D 102 D 5	100% rec, dia 100mm	2.50	HV	p 89kPa, r 24kPa						(2.00)							
		3.20 3.20 - 4.20 3.20 - 4.20 3.50	D 7 L 8 DYS D 103	100% rec, dia 100mm	3.20 - 3.65 3.50	SPT S HV	N=11 (1,1/2,2,3,4) ID TH64 Er 61% p 59kPa, r 8kPa	3.20	Dry				3.20	+119.45		Firm to stiff medium strength light greyish brown mottled grey and orangish brown slightly sandy locally sandy silty CLAY with abundant shell fragments. (OXFORD CLAY FORMATION)				
		4.20 - 4.65	UT 9									(1.50)								
		4.70 4.70 - 5.20 4.70 - 5.20 5.00 - 5.20 5.20 5.20 - 6.20 5.20 - 6.20 5.50 - 5.80	D 10 L 11 DYS D 104 D 12 L 13 DYS CS 105	100% rec, dia 100mm 95% rec, dia 100mm	5.20 - 5.65	SPT S	N=27 (2,4/5,7,7,8) ID TH64 Er 61%	5.20	Dry				5.20			Stiff brown grey mottled orangish brown grey friable slightly sandy locally sandy silty CLAY with frequent shell fragments. (OXFORD CLAY FORMATION)				5.20-5.40 Becoming sandy clay.
01 Nov 22	1700	6.10 - 6.20	D 106																	
02 Nov 22	0700	6.20 - 6.65	UT 14																	
		6.70	D 15										6.70	+115.95		Very stiff mottled orangish brown sandy silty CLAY. Occasional subhorizontal to 30 degrees very closely to closely spaced relict discontinuities with orangish brown staining penetrating <10mm. Occasional shell fragments and rare calcareous white crystals. (<3mm). (OXFORD CLAY FORMATION)				
		7.30 - 7.40 7.50 7.70 - 7.80	D 107 D 16 D 108		7.50 - 7.95	SPT S	N=25 (2,4/5,6,7,7) ID TH64 Er 61%	7.50	7.50											
		8.60 - 8.70	D 109										8.10	+114.55		Very stiff grey slightly sandy silty CLAY with rare locally occasional white and brown shell fragments (<5mm). (OFORD CLAY FORMATION)				
		9.00	D 17		9.00 - 9.45	SPT S	N=30 (2,4/5,8,8,9) ID TH64 Er 61%	9.00	8.70											
													9.00 - 10.50							

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks		Project No. H2060-22		Carried out for Wiltshire Council		Status FINAL		Scale 1:50		Printed 11 May 2023 13:09:06		Borehole ATK_BH11		© Copyright SOCOTEC UK Limited		AGS		Sheet 1 of 2	
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Borehole Log



Checked	Depth		Dates		Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	Coordinates	National Grid	System													
	0.00 - 1.20	1.20 - 6.70	01 Nov 22 - 01 Nov 22	01 Nov 22 - 02 Nov 22						Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks					122.65 mOD	E 400690.04	N 179816.62										
Approved					Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 6.70m Rotary coring from 6.70m to 15.00m.	Insulated Hand Tools. R72 Commachio 405. R72 Commachio 405.	DD/CB DD/CB DD/CB	AF AF AF	02 Nov 22 02 Nov 22 03 Nov 22	Depth 15.00	Dia. (mm) 108	Depth 6.20	Dia. (mm) 153																			
Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR %	SCR %	RQD %	Water added		Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill								
Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Casing	Water					Flush details	Detail				Main	Detail												
10		10.00 - 10.10	D 111																Very stiff grey slightly sandy silty CLAY with rare locally occasional white and brown shell fragments (<5mm). (OFORD CLAY FORMATION)													
		10.10 - 10.40	CS 110																													
		10.50	D 18		10.50 - 10.95	SPT S	N=43 (2,4/7,9,13,14) ID TH64 Er 61%	10.50	9.50																							
11																																
		11.50 - 11.80	CS 112								99	NA	NA																			
12		11.90 - 12.00	D 113		12.00 - 12.45	SPT S	N=38 (6,7/6,7,11,14) ID TH64 Er 61%	12.00	11.10																							
		12.00	D 19																													
		12.80 - 12.90	D 114		12.00 - 13.50						100	NA	NA																			
13		12.95 - 13.25	CS 115																													
		13.50	D 20		13.50 - 13.95	SPT S	N=50 (4,6/9,11,14,16) ID TH64 Er 61%	13.50	13.00																							
14		14.00 - 14.30	CS 116		13.50 - 15.00						100	NA	NA																			
	02 Nov 22	1700	14.90 - 15.00	D 117																												
	6.20	13.80																														
15																																
16																																
17																																
18																																
19																																
20																																
General Remarks																			Hard Boring / Chiselling				Groundwater Entries									
Termination Reason: Borehole complete.																			Depths		Duration (mins)		Tool		No.		Depth		Remarks		Sealed	
Notes									Project									Status				Borehole										
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.									Lyneham Banks H2060-22 Wiltshire Council									FINAL				Scale 1:50 Printed 11 May 2023 13:09:06 © Copyright SOCOTEC UK Limited				ATK_BH11						

15.00 ICE

Borehole Log



Checked [Signature]	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole	Casing	Depth Related Remarks		Ground Level Coordinates National Grid System
	0.00 - 13.30 13.30 - 15.20	16 Nov 22 - 18 Nov 22 21 Nov 22 - 21 Nov 22	Dynamic windowless sampling from 0.00m to 13.30m. Rotary coring from 13.30m to 15.20m.	Comacchio 205 Comacchio 205	PG/JD PG/JD	HP HP	18 Nov 22 21 Nov 22	Depth 15.20 Dia. (mm) 108	Depth 13.30 Dia. (mm) 153	Depth 0.00 - 15.20	Remarks No groundwater strike monitored due to drilling into water.	
Approved [Signature]												

Date	Time	Samples		Field Tests		Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill	
		Depth	Type & No.	Records	Depth	Type	Records							Casing	Water				Main
16 Nov 22	0800	0.00 - 1.00	DYS	90% rec, dia 102mm							(0.10)	+118.51	[Symbol]	Very soft dark brown slightly sandy silty CLAY. Sand is fine. Frequent rootlets (2mm). (TOPSOIL)				Raised Cover	
		0.50	ES 1		0.50	HV	p 48kPa, r 31kPa				0.10	(0.20)	+118.31	[Symbol]	Very soft dark brown silty CLAY. (OXFORD CLAY FORMATION)				
		0.90 - 1.00	D 101		1.00 - 1.23	SPT S	2 (1 for 75mm/1, 1 for 75mm)							[Symbol]	Soft becoming firm brown silty CLAY. (OXFORD CLAY FORMATION)				EPIE
		1.00 - 2.00	DYS	50% rec, dia 102mm										[Symbol]					
		1.90 - 2.00	D 102		1.80	HV	p 37kPa, r 25kPa							[Symbol]					
		2.00 - 2.45	UT		2.50	HV	p 46kPa, r 39kPa				(4.60)			[Symbol]					
		2.00 - 3.00	DYS	65% rec, dia 102mm										[Symbol]					
		2.90 - 3.00	D 103		3.00 - 3.45	SPT S	N=9 (2,1/2,2,3,2)							[Symbol]					
		3.00 - 4.00	DYS	60% rec, dia 102mm			ID AR3787 Er 65%			4.00	Dry			[Symbol]					
		3.90 - 4.00	D 104		3.50	HV	p 29kPa, r 16kPa							[Symbol]					
		4.00 - 4.45	UT		4.70	HV	p 54kPa, r 35kPa							[Symbol]					
		4.00 - 5.00	DYS	60% rec, dia 102mm										[Symbol]					
16 Nov 22	1615	4.00	D		5.00 - 5.45	SPT S	N=15 (2,2/3,4,4,4)							[Symbol]					
		4.45	D		5.40 - 5.50	D 106								[Symbol]					
17 Nov 22	0800	4.00	D		5.60 - 5.90	CS 107								[Symbol]					
		4.90 - 5.00	D 105		6.00 - 6.40	UT	100 blows 90% rec							[Symbol]					
		5.00 - 6.00	DYS	90% rec, dia 102mm										[Symbol]					
		5.40 - 5.50	D 106		6.40 - 6.45	D								[Symbol]					
		5.60 - 5.90	CS 107		6.90 - 7.00	D 108								[Symbol]					
		6.00 - 6.40	UT		7.00 - 7.45	SPT S	N=45 (3,4/6,9,12,18)							[Symbol]					
		6.40 - 6.45	D		7.00	Dry	ID AR3787 Er 65%							[Symbol]					
		6.90 - 7.00	D 108		7.00	Dry								[Symbol]					
		7.00 - 7.45	SPT S		7.00 - 8.00	SPT S	N=38 (4,5/7,9,10,12)							[Symbol]					
		7.90 - 8.00	D 109		8.00	Dry	ID AR3787 Er 65%							[Symbol]					
		8.00 - 8.45	SPT S		8.00 - 9.00	SPT S	N=38 (4,5/7,9,10,12)							[Symbol]					
		8.90 - 9.00	D 110		8.00	Dry								[Symbol]					
17 Nov 22	1630	9.00	D		8.00 - 9.00	SPT S	N=47 (5,8/9,10,13,15)							[Symbol]					
		9.00	D		9.00	Dry	ID AR3787 Er 65%							[Symbol]					
18 Nov 22	0800	9.00	D		9.00 - 9.45	SPT S	N=47 (5,8/9,10,13,15)							[Symbol]					
		9.00	D		9.00	Dry	ID AR3787 Er 65%							[Symbol]					
		9.50 - 9.60	D 111		9.00	Dry								[Symbol]					
		9.60 - 10.30			9.60	Dry								[Symbol]					
					9.60 - 10.30									[Symbol]					

General Remarks No hand vanes below 4.70m due to material being too hard.	Hard Boring / Chiselling		Groundwater Entries	
	Depths	Duration (mins)	Tool	No. Depth Remarks
				Sealed

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lynham Banks	Project No. H2060-22	Carried out for Wiltshire Council	Status FINAL	Scale 1:50	Printed 11 May 2023 13:09:06	Borehole ATK_BH12

Borehole Log



Checked 	Depth 0.00 - 13.30 13.30 - 15.20	Dates 16 Nov 22 - 18 Nov 22 21 Nov 22 - 21 Nov 22	Method Dynamic windowless sampling from 0.00m to 13.30m. Rotary coring from 13.30m to 15.20m.	Equipment Comacchio 205 Comacchio 205	Rig Crew PG/JD PG/JD	Logger HP HP	Logged 18 Nov 22 21 Nov 22	Hole Depth 15.20 Dia. (mm) 108	Casing Depth 13.30 Dia. (mm) 153	Depth Related Remarks Depth Remarks	Ground Level 118.61 mOD Coordinates E 400777.59 National Grid N 179823.94 System
	Approved 										

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill		
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail					
		10.20 - 10.30	D 112		10.30 - 10.75	SPT S	N=50 (4,7,9,12,13,16) ID AR3787 Er 65%	10.50	Dry							10.15	+108.46	Stiff grey mottled light brown silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION) Stiff to very stiff grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
		11.00 - 11.30 11.20 - 11.30	CS 113 D 114		11.50 - 11.89	SPT S	50 (8,12/12,16,17,5 for 10mm) ID AR3787 Er 65%	11.50	Dry			Water flush: 6.40 - 15.20					(3.75)			11.80-13.30 Core loss, approximately 100mm.		
		12.40 - 12.50	D 115		13.30 - 13.69	SPT S	50 (8,12/12,15,16,7 for 15mm) ID AR3787 Er 65%	13.50	Dry											13.30-14.60 Core gained, approximately 30cm.		
18 Nov 22 13.30	1400 Dry	13.00 - 13.30	CS 116		14.60 - 15.05	SPT S	50 (8,10/9,12,15,14 for 70mm) ID AR3787 Er 65%	14.60	Dry													
21 Nov 22 13.30	0930 Dry				15.20 - 15.65	SPT S	N=37 (3,6/7,9,10,11) ID AR3787 Er 65%	15.20	Dry													
21 Nov 22 15.20	1630 Dry	15.10 - 15.20	D 117																			15.20
															END OF EXPLORATORY HOLE							

General Remarks No hand vanes below 4.70m due to material being too hard.										Hard Boring / Chiselling Depths Duration (mins) Tool				Groundwater Entries No. Depth Remarks Sealed							
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.										Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL Scale 1:50 Printed 11 May 2023 13:09:06 © Copyright SOCOTEC UK Limited				Borehole ATK_BH12 Sheet 2 of 2			

Borehole Log



Checked ████████	Depth 0.00 - 1.20 1.20 - 15.00	Dates 07 Nov 22 - 07 Nov 22 07 Nov 22 - 07 Nov 22	Method Hand dug inspection pit from 0.00m to 1.20m. Rotary open holing from 2.50m to 15.00m.	Equipment Insulated Hand Tools. Commachio 205	Rig Crew PG PG	Logger PG PG	Logged 07 Nov 22 07 Nov 22	Hole		Casing		Depth Related Remarks		Ground Level 118.51 mOD
Approved ████████								Depth 15.00	Dia. (mm) 178	Depth 8.00	Dia. (mm) 178	Depth 0.00 - 15.00	Remarks No groundwater strike encountered.	Coordinates E 400775.40 N 179823.75 System

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill				
		Casing	Water	Depth	Type & No.	Records	Depth	Type	Records							Casing	Water	Main				Detail			
07 Nov 22	0800																Soft brown silty CLAY. (Drillers description)								
													(3.00)												
													3.00	+115.51				Soft grey silty CLAY becoming firm with depth. (Drillers description)							

General Remarks Open holed from 0.00m to 15.00m for inclinometer installation only. No SPT's testing, sampling or logging required.	Hard Boring / Chiselling	Groundwater Entries
	Depths Duration (mins) Tool	No. Depth Remarks Sealed

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks	Status FINAL	Scale 1:50	Borehole ATK_BH12A
	Project No. H2060-22	Printed 11 May 2023 13:09:07	© Copyright SOCOTEC UK Limited 	
	Carried out for Wiltshire Council			

Borehole Log



Checked ██████	Depth 0.00 - 1.20 1.20 - 15.00	Dates 07 Nov 22 - 07 Nov 22 07 Nov 22 - 07 Nov 22	Method Hand dug inspection pit from 0.00m to 1.20m. Rotary open holing from 2.50m to 15.00m.	Equipment Insulated Hand Tools. Commachio 205	Rig Crew PG PG	Logger PG PG	Logged 07 Nov 22 07 Nov 22	Hole Depth 15.00	Dia. (mm) 178	Casing Depth 8.00	Dia. (mm) 178	Depth Related Remarks	Ground Level 118.51 mOD	Coordinates E 400775.40 N 179823.75
Approved ██████													System	

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel.	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
																Soft grey silty CLAY becoming firm with depth. (Drillers description)				
07 Nov 22	1715												15.00	+103.51		END OF EXPLORATORY HOLE				15.00 ICE

General Remarks Open holed from 0.00m to 15.00m for inclinometer installation only. No SPT's testing, sampling or logging required.	Hard Boring / Chiselling <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Depths</th> <th>Duration (mins)</th> <th>Tool</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Depths	Duration (mins)	Tool				Groundwater Entries <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Depth</th> <th>Remarks</th> <th>Sealed</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Depth	Remarks	Sealed				
Depths	Duration (mins)	Tool														
No.	Depth	Remarks	Sealed													

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status <p style="text-align: center; font-size: 1.2em;">FINAL</p>	Scale 1:50 Printed 11 May 2023 13:09:07 © Copyright SOCOTEC UK Limited	Borehole <p style="text-align: center; font-size: 1.2em;">ATK_BH12A</p> <p style="text-align: center; font-size: 0.8em;">Sheet 2 of 2</p>
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Borehole Log



Checked [Signature]	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole	Casing	Depth Related Remarks		Ground Level 112.41 mOD Coordinates E 400778.52 National Grid N 179870.76 System
	0.00 - 6.50 6.50 - 15.30	31 Oct 22 - 02 Nov 22 02 Nov 22 - 03 Nov 22	Dynamic windowless sampling from 0.00m to 6.50m. Rotary coring from 6.50m to 15.30m.	Commachio 205 Commachio 205	PG/JD PG/JD	AF AF	02 Nov 22 03 Nov 22	Depth 15.30 Dia. (mm) 178	Depth 15.30 Dia. (mm) 178	Depth 0.00 - 15.30 Remarks No groundwater strike encountered.		
Approved [Signature]												

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
31 Oct 22	0800	0.00 - 0.20	ES 1	90% rec, dia 102mm									(0.35)	+112.06	[Pattern]	Soft dark brown organic slightly sandy silty CLAY with frequent rootlets (<3mm). (TOPSOIL)			Raised cover	
		0.00 - 1.20	DYS										0.35		[Pattern]	Very soft extremely low strength yellowish brown mottled grey slightly sandy silty CLAY. (OXFORD CLAY FORMATION)			EPIE	
		0.70 - 1.00	ES 2										(0.85)		[Pattern]					
		1.00	D 101		1.00	HV	p 16kPa, r 4kPa						1.20	+111.21	[Pattern]	Soft yellowish brown mottled grey slightly sandy silty CLAY. (OXFORD CLAY FORMATION)				
31 Oct 22	1630	1.50 - 5.00	DYS	16% rec, dia 102mm									(0.50)		[Pattern]					
		1.70 - 2.00	DYS	0% rec, dia 102mm									1.70	+110.71	[Pattern]	No recovery.				
01 Nov 22	0800	2.00 - 2.40	UT 3	22 blows 100% rec				2.00	Dry				(0.30)		[Pattern]					
		2.40 - 2.50	D 4										2.00	+110.41	[Pattern]	Soft yellowish brown mottled grey slightly sandy silty CLAY. (OXFORD CLAY FORMATION)				
		2.50 - 2.90	UT 5	19 blows 100% rec				2.50	Dry				2.50	+109.91	[Pattern]	Soft to firm very low strength yellowish brown mottled grey slightly sandy slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to medium of limestone with occasional shell fragments. (OXFORD CLAY FORMATION)				
		2.90 - 3.00	D 6										(1.00)		[Pattern]				EPIE	
		3.00 - 3.50	DYS	50% rec, dia 102mm									3.50	+108.91	[Pattern]	Firm medium strength yellowish brown mottled grey slightly sandy slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to medium of limestone with occasional shell fragments. (OXFORD CLAY FORMATION)				
		3.30	D 102		3.30	HV	p 59kPa, r 8kPa								[Pattern]					
		3.50 - 4.00	UT 7	25 blows 100% rec				3.50	Dry						[Pattern]					
		4.00 - 4.50	D 8										(3.00)		[Pattern]					
		4.00 - 4.50	DYS	50% rec, dia 102mm											[Pattern]					
		4.30	D 103		4.30	HV	p 57kPa, r 8kPa								[Pattern]					
		4.50 - 4.90	UT 9	30 blows 100% rec				4.50	Dry						[Pattern]					
		4.95 - 5.00	D 10												[Pattern]					
		5.00 - 5.40	UT 11	55 blows 95% rec				5.00	Dry						[Pattern]					
		5.00	D 104												[Pattern]					
		5.40 - 5.50	D 12												[Pattern]					
		5.50 - 5.90	UT 13	25 blows 100% rec				5.50	Dry						[Pattern]					
01 Nov 22	1630	5.90 - 6.00	D 14												[Pattern]					
		6.00 - 6.45	UT 15	10 blows 100% rec				6.00	Dry						[Pattern]					
		6.45	D 16												[Pattern]					
		6.80	HV		6.80	HV	FIELD p 178kPa, r 35kPa								[Pattern]					
		7.00	HV		7.00	HV	FIELD p 188kPa, r 38kPa			6.50 - 8.00	90 NA NA				[Pattern]					
		7.60 - 7.70	D 106												[Pattern]					
		7.70 - 8.00	CS 105		8.00 - 8.45	SPT S	N=26 (3,5/5,6,7,8) ID AR3787 Er 65%	8.00	Dry						[Pattern]					
		8.50 - 8.60	D 107							8.00 - 9.30	69 NA NA				[Pattern]					
					9.30 - 9.75	SPT S	N=43 (4,7/7,10,12,14) ID AR3787 Er 65%	9.30	Dry						[Pattern]					
										9.30 - 10.30	90 NA NA				[Pattern]				EPIE	

General Remarks Termination Reason: Borehole complete.	Hard Boring / Chiselling		Groundwater Entries		Sealed
	Depths	Duration (mins)	Tool	No. Depth Remarks	

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lynham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:50 Printed 11 May 2023 13:09:07	Borehole ATK_BH13

Borehole Log



Checked 	Depth	Dates	Method Dynamic windowless sampling from 0.00m to 6.50m. Rotary coring from 6.50m to 15.30m.	Equipment Commachio 205 Commachio 205	Rig Crew PG/JD PG/JD	Logger AF AF	Logged 02 Nov 22 03 Nov 22	Hole		Casing		Depth Related Remarks	Ground Level 112.41 mOD	Coordinates E 400778.52 N 179870.76	System
	0.00 - 6.50 6.50 - 15.30	31 Oct 22 - 02 Nov 22 02 Nov 22 - 03 Nov 22						Depth 15.30	Dia. (mm) 178	Depth 15.30	Dia. (mm) 178				
Approved 															

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill	
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
		10.10 - 10.20	D 108		10.80 - 11.25	SPT S	N=50 (4,6/11,11,13,15) ID AR3787 Er 65%	10.80	Dry	10.30 - 10.80	100 NA NA		(8.80)			Very stiff grey slightly sandy silty CLAY with rare locally occasionally white and cream shell fragments (<5mm) and rare shells (<10mm). (OXFORD CLAY FORMATION)					
		10.30 - 10.40	D 110							10.80 - 12.00	86 NA NA										
02 Nov 22 10.80	1700 Dry	10.40 - 10.80	CS 109		12.30 - 12.75	SPT S	N=34 (4,4/6,8,10,10) ID AR3787 Er 65%	12.30	Dry	12.00 - 12.30	117 NA NA										
03 Nov 22 10.80	0800 Dry	11.50 - 11.60	D 111							12.30 - 13.80	80 NA NA										
		12.00 - 12.30	CS 112		13.80 - 14.19	SPT S	51 (8,10/13,15,19,4 for 10mm) ID AR3787 Er 65%	13.80	Dry	13.80 - 15.30	97 NA NA										
		12.90 - 13.00	D 113							15.30 - 15.66	50 (7,9/14,18,18 for 60mm) ID AR3787 Er 65%										
03 Nov 22 15.30	1730 Dry	15.10 - 15.20	D 115		15.30 - 15.66	SPT S	50 (7,9/14,18,18 for 60mm) ID AR3787 Er 65%	15.30	Dry			15.30	+97.11		END OF EXPLORATORY HOLE	15.03-15.09 Undulating smooth very tight fissures (20-60 degrees curved).					
16																					
17																					
18																					
19																					
20																					

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed					
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.						Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council						Status FINAL			Scale 1:50 Printed 11 May 2023 13:09:07 © Copyright SOCOTEC UK Limited			Borehole ATK_BH13 Sheet 2 of 2		

Borehole Log



Checked ██████	Depth 0.00 - 7.50 7.50 - 14.70	Dates 24 Oct 22 - 25 Oct 22 25 Oct 22 - 27 Oct 22	Method Dynamic windowless sampling from 0.00m to 7.50m. Rotary coring from 7.50m to 14.70m.	Equipment Commachio 205 Commachio 205	Rig Crew PG AD	Logger AF AF	Logged 28 Oct 22 28 Oct 22	Hole Depth 14.70	Casing Dia. (mm) 178	Depth 14.50	Dia. (mm) 178	Depth 0.00 - 14.70	Remarks No groundwater encountered.	Depth Related Remarks	Ground Level 107.98 mOD	Coordinates E 400765.25 N 179907.43	System
	Approved ██████																

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill	
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
24 Oct 22	0800	0.00 - 1.00 0.10 - 0.20	DYS ES 1	95% rec, dia 102mm									(0.30)	+107.68	Soft brown organic slightly sandy slightly gravelly silty CLAY with abundant roots. (TOPSOIL)					Raised Cover	
		0.50	D 101										0.30		Soft medium strength yellow brown mottled grey and orangish brown slightly sandy silty CLAY with occasional rootlets (<1-2mm). (OXFORD CLAY FORMATION)					0.90	
		0.80 - 0.90	ES 2										(1.85)								
		1.00	D 102																		
		1.00 - 2.00	DYS	60% rec, dia 102mm	1.00 - 1.23 1.00	SPT S HV	2 (1 for 75mm/1,1 for 75mm) ID AR3787 Er 65% p 50kPa, r 23kPa	0.00	Dry												
		2.00	D 103																		
		2.00 - 3.00	DYS	100% rec, dia 102mm	2.00	HV	p 74kPa, r 34kPa														
		2.50	D 104																		
		2.50	HV				p 34kPa, r 19kPa														
		3.00	D 105																		
		3.00 - 4.00	DYS	96% rec, dia 102mm	3.00 - 3.30 3.00	SPT S HV	6 (1 for 75mm/2,2,2 for 75mm) ID AR3787 Er 65% p 107kPa, r 19kPa p 78kPa, r 28kPa	2.50	Dry												
		3.50	D 106																		
		3.50	HV																		
		3.50	HV																		
		4.00 - 5.00	DYS	70% rec, dia 102mm																	
		4.50	D 107																		
		4.50	HV				p 140kPa, r 54kPa														
		4.80	HV				p 146kPa, r 28kPa														
		5.00 - 5.45	SPT S				N=17 (1,1/3,4,5,5) ID AR3787 Er 65%	5.00	3.10												
24 Oct 22	1700	5.45																			
25 Oct 22	0800	5.45																			
		5.50 - 6.50	DYS	95% rec, dia 102mm																	
		6.00	D 108																		
		6.00	HV				p 140kPa, r 39kPa														
		6.50	D 109																		
		6.50	HV				p 163kPa, r 50kPa														
		6.50	HV																		
		7.60	D 110																		
		7.60	HV																		
		8.00 - 8.45	SPT S				N=29 (3,4/5,7,8,9) ID AR3787 Er 65%	8.00	Dry												
		8.00	HV																		
		8.00	HV																		
		8.00	HV																		
		8.90	D 111																		
		8.90	HV																		
		9.00 - 9.45	SPT S				N=38 (4,6/6,9,11,12) ID AR3787 Er 65%	9.00	3.00												
		9.00	HV																		
		9.00	HV																		
		9.60 - 9.90	CS 112																		
		9.60	HV																		
		9.60	HV																		
		9.60	HV																		

General Remarks Hand vane at 7.60m failed in stiff clay. Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed				
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.												Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL			Scale 1:50 Printed 11 May 2023 13:09:07 © Copyright SOCOTEC UK Limited			Borehole ATK_BH14 Sheet 1 of 2	

Borehole Log



Checked █	Depth		Dates		Method		Equipment		Rig Crew		Logger		Logged		Hole		Casing		Depth Related Remarks		Ground Level																										
	0.00 - 7.50 7.50 - 14.70		24 Oct 22 - 25 Oct 22 25 Oct 22 - 27 Oct 22		Dynamic windowless sampling from 0.00m to 7.50m. Rotary coring from 7.50m to 14.70m.		Commachio 205 Commachio 205		PG AD		AF AF		28 Oct 22 28 Oct 22		Depth 14.70 Dia. (mm) 178		Depth 14.50 Dia. (mm) 178				107.98 mOD E 400765.25 N 179907.43 System																										
Approved █	Date		Time		Samples			Field Tests			Samp / Test		Coring		TCR %		Water added		Depth		Level		Legend		Strata Description																						
		Casing		Water		Depth			Type & No.			Records			Depth			Type			Records			Casing		Water		Depth (Diameter)		SCR %		RQD %		Flush details		Depth (Thickness)		Main		Detail		Chisel		Water Entry		Backfill	
					10.20		D 113						10.20	10.00	10.20 - 10.63	SPT S	50 (4,9/13,16,18,3 for 50mm)	ID AR3787 Er 65%			10.20			97	NA	NA																					
					11.20 - 11.50 11.50		CS 114 D 115						11.70		11.70 - 12.15	SPT S	N=51 (3,7/9,11,13,18)	ID AR3787 Er 65%			11.70																										
					12.75 - 13.09 13.10		CS 116 D 117						13.20	7.74	13.20 - 13.62	SPT S	50 (9,8/12,15,13,10 for 40mm)	ID AR3787 Er 65%			13.70																										
					13.80 - 14.10 14.15		CS 118 D 119						13.20		13.20 - 14.70							63	NA	NA																							
					14.70 - 15.09		SPT S	50 (9,10/14,16,15,5 for 15mm)	ID AR3787 Er 65%				14.20	3.10							14.20																										
																					14.70																										
General Remarks Hand vane at 7.60m failed in stiff clay. Termination Reason: Borehole complete.															Hard Boring / Chiselling					Groundwater Entries																											
															Depths		Duration (mins)		Tool	No.		Depth		Remarks	Sealed																						
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.															Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL					Scale 1:50 Printed 11 May 2023 13:09:07 © Copyright SOCOTEC UK Limited																						
															Borehole ATK_BH14 Sheet 2 of 2																																

Borehole Log



Checked [Signature]	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole	Casing	Depth Related Remarks		Ground Level 120.69 mOD Coordinates E 400852.76 National Grid N 179801.88 System
	0.00 - 5.00 5.00 - 15.00	24 Nov 22 - 28 Nov 22 29 Nov 22 - 29 Nov 22	Dynamic windowless sampling from 0.00m to 5.00m. Rotary coring from 5.00m to 15.00m.	Comacchio 205 Comacchio 205	PG/JD PG/JD	HP HP	28 Nov 22 29 Nov 22	Depth 15.00 Dia. (mm) 178	Depth 15.00 Dia. (mm) 178	Depth 0.00 - 15.00 Remarks No groundwater encountered.		
Approved [Signature]												

Date	Time	Samples		Field Tests		Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records							Casing	Water			
24 Nov 22	0800 Dry	0.00 - 1.00	DYS	100% rec, dia 102mm							(0.20)	+120.49	[Pattern]	Soft dark brown silty CLAY. Frequent roots and rootlets. (TOPSOIL)				Raised Cover
		0.30	ES 1		0.50	HV	p 50kPa, r 29kPa				0.20			Soft greyish light brown silty CLAY. (OXFORD CLAY FORMATION)				
1		1.00	D 101	90% rec, dia 102mm	1.00 - 1.45	SPT S	N=2 (1/,1,1) ID AR3787 Er 65%	0.00	Dry		(1.30)		[Pattern]					
		1.00 - 2.00	DYS		1.50	HV	p 65kPa, r 41kPa				1.50	+119.19		Firm dark grey mottled light brown silty CLAY. (OXFORD CLAY FORMATION)				
2		2.00 - 2.45	UT 4	33 blows 100% rec	2.00	D 102		2.00	Dry		(1.50)		[Pattern]					
		2.45 - 2.50	D 5		2.70	HV	p 77kPa, r 64kPa				3.00	+117.69		Firm becoming stiff grey slightly sandy silty CLAY. Sand is fine to coarse. Frequent white shell fragments (<10mm). (OXFORD CLAY FORMATION)				
3		3.00	D 103	55% rec, dia 102mm	3.00 - 3.45	SPT S	N=15 (1,2/2,3,5,5) ID AR3787 Er 65%	3.00	Dry		(3.00)		[Pattern]					
		3.00 - 4.00	DYS		4.00 - 4.45	UT 9	52 blows 100% rec 100% rec, dia 102mm	4.00	Dry									
4		4.00 - 4.45	DYS	52 blows 100% rec 100% rec, dia 102mm	4.45 - 4.50	D 10			4.00	Dry				[Pattern]				
		4.45 - 4.50	D 10		5.00	D 104	5.00 - 5.40	SPT S	50 (2,6/8,11,18,13 for 25mm) ID AR3787 Er 65%	5.00	Dry							
5	24 Nov 22 1630 5.00 Dry	5.00	D 104		5.00 - 6.00								[Pattern]					
6	28 Nov 22 0800 5.00 Dry	6.00	D 105	6.00 - 6.45	SPT S	N=29 (4,7/7,6,8,8) ID AR3787 Er 65%	6.00	Dry							5.70-6.00 Very frequent white shell fragments (<20mm).			
7		6.00	D 105		6.00 - 7.00								[Pattern]					
		7.00	D 106	7.00 - 7.45	SPT S	N=39 (4,5/7,10,12,10) ID AR3787 Er 65%	7.00	Dry										
8		7.00	D 106		7.00 - 8.00								[Pattern]					
		8.00	D 107	8.00 - 8.45	SPT S	N=32 (3,5/6,7,9,10) ID AR3787 Er 65%	8.00	Dry										
9		8.00	D 107		8.00 - 9.00								[Pattern]					
		9.00	D 108	9.00 - 9.45	SPT S	N=51 (7,9/10,12,17,12) ID AR3787 Er 65%	9.00	Dry										
10					9.00 - 10.00								[Pattern]					

General Remarks Hand vanes not possible below 3.00m due to stiffness of clay. Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:50 Printed 11 May 2023 13:09:08 © Copyright SOCOTEC UK Limited		Borehole ATK_BH15 Sheet 1 of 2	
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Borehole Log



Checked	Depth		Dates		Method		Equipment		Rig Crew		Logger	Logged		Hole		Casing		Depth Related Remarks		Ground Level						
<div style="background-color: black; width: 100%; height: 1em;"></div>	0.00 - 5.00	5.00 - 15.00	24 Nov 22 - 28 Nov 22	29 Nov 22 - 29 Nov 22	Dynamic windowless sampling from 0.00m to 5.00m. Rotary coring from 5.00m to 15.00m.		Comacchio 205 Comacchio 205		PG/JD	PG/JD	HP HP	28 Nov 22	29 Nov 22	Depth 15.00	Dia. (mm) 178	Depth 15.00	Dia. (mm) 178	Depth	Remarks	Coordinates E 400852.76 N 179801.88	120.69 mOD					
<div style="background-color: black; width: 100%; height: 1em;"></div>	Approved																				System					
Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill						
		Casing	Water	Depth	Type & No.	Records	Depth	Type	Records							Casing	Water				Main	Detail				
28 Nov 22	0800	10.00	D 109		10.00 - 10.43	SPT S	50 (7,10/14,17,15,4 for 50mm) ID AR3787 Er 65%	10.00	Dry				(9.00)			Very stiff grey silty CLAY. Occasional white shell fragments (<5mm) (OXFORD CLAY FORMATION)										
29 Nov 22	1630	10.60 - 10.90	CS 110		11.00	D 111	N=50 (11,11/11,11,13,15) ID AR3787 Er 65%	11.00	Dry				11.00 - 12.00													
10.00	Dry				12.00	D 112	50 (6,10/13,15,18,4 for 50mm) ID AR3787 Er 65%	12.00	Dry				12.00 - 13.50													
10.00	Dry				13.10 - 13.40	CS 113							13.50													
		13.50	D 114		13.50 - 13.87	SPT S	50 (10,12/12,19,19 for 70mm) ID AR3787 Er 65%	13.50	Dry				13.50 - 15.00													
29 Nov 22	1630	14.60 - 14.90	CS 115		15.00	D 116	50 (8,12/13,17,20 for 75mm) ID AR3787 Er 65%	15.00	Dry				15.00	+105.69			END OF EXPLORATORY HOLE				ICE 15.00					
15.00	Dry																									
General Remarks Hand vanes not possible below 3.00m due to stiffness of clay. Termination Reason: Borehole complete.															Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed								
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.															Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL			Scale 1:50 Printed 11 May 2023 13:09:08 © Copyright SOCOTEC UK Limited			Borehole ATK_BH15 Sheet 2 of 2		

Borehole Log



Checked [Signature]	Depth 0.00 - 7.70 7.70 - 15.00	Dates 09 Nov 22 - 11 Nov 22 11 Nov 22 - 14 Nov 22	Method Dynamic windowless sampling from 0.00m to 7.70m Rotary coring from 7.70m to 15.00m	Equipment Comacchio 205 Comacchio 205	Rig Crew PG/JD PG/JD	Logger KD KD/HP	Logged 10 Nov 22 16 Nov 22	Hole Depth 15.00	Casing Dia. (mm) 178	Depth 9.00	Casing Dia. (mm) 178	Depth 0.00 - 15.00	Remarks No groundwater strike encountered.	Ground Level 119.42 mOD	Coordinates E 400727.87 N 179824.27	System
	Approved [Signature]															

Date	Time	Samples		Field Tests		Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records							Casing	Water			
09 Nov 22	0745	0.00 - 0.10 0.00 - 1.00 0.40 - 0.50	ES 101 DYS D 101	100% rec, dia 102mm	0.00	PID	0.1 ppmv				(0.10)	+119.32	[Symbol]	Soft dark brown slightly sandy silty CLAY. Abundant rootlets (less than 3mm). (TOPSOIL)				
		0.70 - 0.90 0.50 - 0.90 1.00 - 2.00 1.40 - 1.50	ES 102 CS 102 DYS D 103	90% rec, dia 102mm	0.70 1.00 - 1.23 1.00	PID SPT S HV	0.0 ppmv 2 (1 for 75mm/1,1 for 75mm) ID AR3787 Er 65% p 57kPa, r 19kPa				(1.90)		[Symbol]	Soft to firm grey mottled orangish brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded of limestone. (OXFORD CLAY FORMATION)	1.00 Cavings of 0.20m topsoil in top of run.			
		2.00 - 2.45 2.00 - 3.00 2.45 - 2.50	UT 1 DYS D 2	10 blows 90% rec 55% rec, dia 102mm	2.00 2.50	HV	p 40kPa, r 13kPa p 54kPa, r 16kPa				2.00	+117.42	[Symbol]	Soft grey mottled orangish brown sandy CLAY. Frequent shell fragments. Occasional pockets of orange fine sand (less than 50mm). (OXFORD CLAY FORMATION)				
09 Nov 22	1700	2.60 - 2.90 2.90 - 3.00	CS 104 D 105	100% rec, dia 102mm	3.00 - 3.45	SPT S	N=6 (1,1/1,1,2,2) ID AR3787 Er 65%				3.00		[Symbol]		3.00-3.45 Recovered as very soft slightly sandy silty clay (over SPT range).			
10 Nov 22	0745	3.00 - 4.00 3.90 - 4.00 4.00 - 4.45 4.00	D 106 UT 4 D 12 DYS	68 blows 100% rec	4.00						4.00		[Symbol]					
		4.00 - 5.00 4.45 - 4.50 4.50 - 7.60 4.50 - 4.80	D 3 D 111 CS 107	60% rec, dia 102mm	4.70	HV	p 140kPa, r 30kPa				4.25	+115.18	[Symbol]	Stiff grey mottled orangish brown slightly sandy silty fissured CLAY. Fissures are randomly orientated planar smooth. Frequent shell fragments and occasional pockets of fine orangish brown sand (less than 3mm). (OXFORD CLAY FORMATION)				
		4.90 - 5.00 5.00 - 5.45 5.00 - 6.00 5.00 - 6.00 5.15 - 5.50 5.50	CS 108 UT 5 D 110 DYS D 6 D 16	22 blows 100% rec	5.00 - 5.45	SPT S	N=22 (2,2/4,5,6,7) ID AR3787 Er 65%				5.00		[Symbol]		5.50-5.60 Recovered as soft grey mottled slightly sandy silty clay.			
		5.60 - 5.90 6.00 - 6.70	CS 109 DYS	90% rec, dia 102mm	5.80 6.00 - 6.45	HV SPT S	p 135kPa, r 27kPa N=40 (3,4/8,10,10,12) ID AR3787 Er 65%				5.60	+113.82	[Symbol]	Very stiff dark grey slightly sandy fissured CLAY. Fissures are 40-80 degrees planar smooth. Abundant white shell fragments (less than 2mm). (OXFORD CLAY FORMATION)	6.00 Pockets of orangish brown fine SAND (up to 25x10mm) becoming sandy at 7.15m.			
10 Nov 22	1645	6.70 - 7.15 6.70 - 7.70	UT 7 DYS	56 blows 100% rec, dia 102mm	6.70						6.70		[Symbol]					
11 Nov 22	0800	6.70 - 7.50 7.70 - 8.15	D 8 UT 9	100 blows	6.70 - 7.70			67 NA NA			(3.40)		[Symbol]					
		8.15 - 8.20 8.40 - 8.70	D 10 CS 112		7.70 - 9.00			80 NA NA					[Symbol]					
11 Nov 22	1415	8.90 - 9.00	D 113		9.00 - 9.38	SPT S	51 (8,8/11,12,16,12 for 8mm) ID AR3787 Er 65%				9.00	+110.42	[Symbol]	Very stiff dark grey silty CLAY. Subhorizontal fissures planar smooth. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
14 Nov 22	0830	9.30 - 9.40 9.70 - 10.00	D 114 CS 115		9.00 - 10.00			100 NA NA					[Symbol]					

General Remarks Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed	
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.												Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL Scale 1:50 Printed 11 May 2023 13:09:08 © Copyright SOCOTEC UK Limited			Borehole ATK_BH16 Sheet 1 of 2	

Borehole Log



Checked [Signature]	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole	Casing	Depth Related Remarks	Ground Level	Coordinates	National Grid	System
	0.00 - 7.70 7.70 - 15.00	09 Nov 22 - 11 Nov 22 11 Nov 22 - 14 Nov 22	Dynamic windowless sampling from 0.00m to 7.70m Rotary coring from 7.70m to 15.00m	Comacchio 205 Comacchio 205	PG/JD PG/JD	KD KD/HP	10 Nov 22 16 Nov 22	Depth 15.00	Dia. (mm) 178					
Approved [Signature]														

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR %	SCR %	RQD %	Water added	Depth	Level	Legend	Strata Description			Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water									Flush details	(Thickness)	Main			
					10.00 - 10.44	SPT S	50 (5,9/11,12,15,12 for 60mm) ID AR3787 Er 65%	10.00	Dry														
					10.70 - 11.00	CS 116					93 NA NA												
					11.40 - 11.50	D 117								Air/mist flush: 7.70 - 15.00	80% rec								
					11.50 - 11.85	SPT S	55 (7,11/19,20,16 for 50mm) ID AR3787 Er 65%	11.50	Dry														
					12.00 - 13.00	D 119					100 NA NA					(6.00)							
					12.00 - 12.30	CS 118																	
					13.00 - 13.32	SPT S	50 (9,16/17,24,9 for 15mm) ID AR3787 Er 65%	13.00	Dry														
					13.30 - 14.00	D 120					60 NA NA												
					14.00 - 14.35	SPT S	50 (4,7/14,16,20 for 50mm) ID AR3787 Er 65%	14.00	Dry														
					14.90 - 15.00	D 121					50 NA NA												
14 Nov 22 15.00	1630 Dry				15.00 - 15.43	SPT S	50 (4,10/9,13,16,12 for 50mm) ID AR3787 Er 65%	15.00	Dry														15.00
					END OF EXPLORATORY HOLE																		

General Remarks Termination Reason: Borehole complete.														Hard Boring / Chiselling Depths Duration (mins) Tool				Groundwater Entries No. Depth Remarks Sealed			
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.			Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL		Scale 1:50 Printed 11 May 2023 13:09:08		Borehole ATK_BH16 © Copyright SOCOTEC UK Limited	
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Borehole Log



Checked ████████	Depth 0.00 - 8.00	Dates 06 Dec 22 - 06 Dec 22	Method Rotary open holing from 0.00m to 8.00m.	Equipment Commachio 205	Rig Crew SS	Logger SS	Logged 07 Dec 22	Hole Depth 8.00 Dia. (mm) 127		Casing Depth 1.20 Dia. (mm) 127		Depth Related Remarks Depth 0.00 - 8.00 Remarks No groundwater encountered.	Ground Level 131.42 mOD
Approved ████████													Coordinates E 400790.25
												National Grid N 179729.48	
												System	

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel.	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
06 Dec 22	0800																			Raised Cover
												(3.10)								
												3.10	+128.32			OXFORD CLAY FORMATION. (Driller's description)				
07 Dec 22	0800																			
1.20	3.60											(4.90)								
06 Dec 22	1600											8.00	+123.42			END OF EXPLORATORY HOLE				SP
07 Dec 22	1615																			8.00
1.20	3.60																			
1.20	7.10																			

General Remarks Termination Reason: Borehole complete.	Hard Boring / Chiselling Depths Duration (mins) Tool	Groundwater Entries No. Depth Remarks Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:50 Printed 11 May 2023 13:09:08 AGS	Borehole ATK_BH17 Sheet 1 of 1
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Borehole Log



Checked [Signature]	Depth 0.00 - 1.20 1.20 - 7.80 7.80 - 15.20	Dates 18 Nov 22 - 21 Nov 22 21 Nov 22 - 22 Nov 22 22 Nov 22 - 23 Nov 22	Method Hand dug inspection pit from 0.00m to 1.20m Dynamic windowless sampling from 1.20m to 7.80m. Rotary coring from 7.80m to 15.20m.	Equipment Insulated Hand Tools. R74 Comacchio 305 R74 Comacchio 305	Rig Crew DD/CB DD/LW DD/LW	Logger HP ER/HP ER/HP	Logged 23 Nov 22 24 Nov 22 24 Nov 22	Hole Depth 7.80 15.20 Dia. (mm) 101 108	Casing Depth 3.90 Dia. (mm) 153	Depth Related Remarks Depth 0.00 - 15.20 Remarks No groundwater encountered due to water flush.	Ground Level 119.04 mOD	Coordinates E 400416.43 N 179989.03
Approved [Signature]											National Grid System	

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
18 Nov 22	0800	0.00 - 0.30	B 1										(0.30)	+118.74	Black MACADAM. Aggregate of angular to subangular fine to coarse mixed lithologies. 3% void spaces. (HIGHWAY CONSTRUCTION)						Flush Cover
18 Nov 22	1830	0.30 - 0.60	B 2										(0.30)	+118.44	Grey slightly sandy GRAVEL. Gravel is angular to subangular fine to coarse of sandstone. Sand is fine to coarse. (SUB BASE)						
21 Nov 22	0945	0.60 - 0.80	B 3										(0.20)	+118.24	Light grey medium strong CONCRETE. 40-50% aggregate, aggregate is angular to subangular fine to medium of sandstone. <5% void space. (HIGHWAY CONSTRUCTION)						
		0.80 - 1.20	L 4										(1.90)		Soft locally firm light to dark brown mottled grey slightly gravelly silty CLAY. Gravel is subrounded fine of limestone. (OXFORD CLAY FORMATION)	1.40	Becoming firm.				
		1.00	D 101																		
		1.20	D 5					1.20	Dry												
		1.20	ES 3																		
		1.20 - 2.20	L 6																		
		2.00	D 102																		
		2.20 - 2.65	UT 7																		
		2.70	D 8																		
		2.70 - 3.20	L 9																		
21 Nov 22	1700	3.00	D 103																		
		3.20	D 10																		
22 Nov 22	0700	3.20 - 4.20	L 11					3.20	Dry				(1.50)		Firm grey brown mottled orange brown and white slightly gravelly CLAY. Gravel is subangular fine to medium of white limestone and pink shell fragments (<5mm). (OXFORD CLAY FORMATION)	3.20-3.50	Becoming sandy with coarse shell fragments.				
		4.00	D 104																		
		4.20 - 4.65	UT 12																		
		4.65 - 5.20	L 13																		
		4.70 - 5.00	CS 105																		
		5.10	D 106																		
		5.20	D 14					5.20	Dry				(2.30)		Firm becoming stiff grey brown mottled orange brown sandy silty CLAY. (OXFORD CLAY FORMATION)						
		6.00	D 108																		
		6.10 - 6.40	CS 107																		
		6.40	D 15					6.40	4.30												
		6.70 - 6.80	D 109																		
		7.80	D 16																		
22 Nov 22	0730																				
23 Nov 22	1630																				
		7.80																			
		7.80																			
		8.70	D 17					4.60	2.40				(4.20)		Stiff brownish grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)						
		9.60 - 9.70	D 110																		
		9.70	D 18					10.70	3.30												

General Remarks Hand vanes stopped due to material being too stiff. Termination Reason: Borehole complete.	Hard Boring / Chiselling	Groundwater Entries
	Depths Duration (mins) Tool	No. Depth Remarks Sealed

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL Scale 1:50 Printed 11 May 2023 13:17:52 © Copyright SOCOTEC UK Limited	Borehole ATKRD_BH01 Sheet 1 of 2
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Borehole Log



Checked	Depth		Dates		Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	Coordinates	National Grid	System		
	0.00 - 1.20 1.20 - 7.80 7.80 - 15.20	18 Nov 22 - 21 Nov 22 21 Nov 22 - 22 Nov 22 22 Nov 22 - 23 Nov 22	Hand dug inspection pit from 0.00m to 1.20m Dynamic windowless sampling from 1.20m to 7.80m. Rotary coring from 7.80m to 15.20m.							Insulated Hand Tools. R74 Comacchio 305 R74 Comacchio 305	DD/CB DD/LW DD/LW	HP ER/HP ER/HP	23 Nov 22 24 Nov 22 24 Nov 22	Depth 7.80 15.20	Dia. (mm) 101 108					Depth 3.90	Dia. (mm) 153
Approved																					
Date		Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Casing	Water	Main							Detail				
10			10.60 - 10.70 10.70	D 111 D 19		10.70 - 11.15	SPT S	N=24 (3,5/5,6,6,7) ID TH64 Er 61%	4.60	3.80	9.70 - 10.70	100 NA NA		10.70	+108.34	[Pattern]	Stiff brownish grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
11											10.70 - 12.20	100 NA NA	Water flush: 7.80 - 15.20	100% rec			Stiff becoming very stiff grey silty CLAY. Frequent white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
12			11.70 - 12.00 12.10 - 12.20 12.20	CS 112 D 113 D 20		12.20 - 12.65	SPT S	N=27 (4,4/5,6,8,8) ID TH64 Er 61%	4.60	3.80	12.20 - 13.70	100 NA NA		(4.50)				11.50 Fragment of isolated subrounded sandstone, no gravel around it (150mm).			
13											12.20 - 13.70	100 NA NA									
14			13.60 - 13.70 13.70	D 114 D 21		14.15 - 14.60	SPT S	N=31 (4,5/6,8,8,9) ID TH64 Er 61%	13.70	3.40	13.70 - 15.20	100 NA NA									
15	23 Nov 22 4.60	1645 2.80	14.70 - 15.00 15.10 - 15.20	CS 115 D 116										15.20	+103.84		END OF EXPLORATORY HOLE			ICE 15.20	
16																					
17																					
18																					
19																					
20																					
General Remarks Hand vanes stopped due to material being too stiff. Termination Reason: Borehole complete.																Hard Boring / Chiselling Depths Duration (mins) Tool		Groundwater Entries No. Depth Remarks		Sealed	
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL			Scale 1:50 Printed 11 May 2023 13:17:52 © Copyright SOCOTEC UK Limited		Borehole ATKRD_BH01 Sheet 2 of 2						

Borehole Log



Checked 	Depth 0.00 - 1.20 1.20 - 5.20 5.20 - 15.00	Dates 24 Nov 22 - 24 Nov 22 25 Nov 22 - 28 Nov 22 28 Nov 22 - 29 Nov 22	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 5.20m Rotary coring from 5.20m to 15.00m	Equipment Insulated Hand Tools. R74 Commachio 305 R74 Commachio 305	Rig Crew DD/LW DD/LW DD/LW	Logger HP HP HP	Logged 28 Nov 22 28 Nov 22 29 Nov 22	Hole Depth 11.10 15.00	Casing Depth 4.20 153	Depth Related Remarks Depth 0.00 - 15.00 Remarks No groundwater monitored due to water flush.	Ground Level 117.19 mOD Coordinates E 400387.02 N 179993.52 System
	Approved 										

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
24 Nov 22	1315	0.00 - 0.30	B 1													Black MACADAM. Aggregate of angular to subangular fine to coarse mixed lithologies. 3% void spaces. (HIGHWAY CONSTRUCTION)			Flush Cover	
		0.30 - 0.80	B 2													Dark grey gravelly SAND. Gravel is angular to subangular fine to coarse of sandstone. Sand is fine to coarse. (MADE GROUND)				
24 Nov 22	1630	0.70 - 0.80	ES 2																	
		0.80 - 1.20	L 3 DYS	100% rec													0.80-1.20 Becoming more gravelly.			
25 Nov 22	0800	1.20 - 1.20	D 0																	
		1.20 - 2.20	L 4 DYS	100% rec	1.20 - 1.65	SPT S	N=5 (1,0/1,1,1,2) ID TH64 Er 61%	1.20	1.00								Soft light brown mottled light grey silty CLAY. (OXFORD CLAY FORMATION)			
2		2.00 - 2.20	D 101																	
		2.20 - 3.20	L 5 DYS	100% rec	2.00	HV	p 58kPa, r 31kPa													
3		2.80 - 3.20	D 102																	
		3.20 - 4.20	L 7 DYS	100% rec	2.70	HV	p 53kPa, r 29kPa													
4	1030	3.20 - 4.20	D 6																	
		4.20 - 4.65	L 7 DYS	100% rec	3.20 - 3.65	SPT S	N=4 (1,1/1,1,1,1) ID TH64 Er 61%	3.20	Dry											
5	1200	4.20 - 4.70	UT 8																	
		4.70 - 5.20	D 9 DYS	100% rec	3.70	HV	p 78kPa, r 51kPa													
6	1630	5.20 - 5.20	D 104																	
		5.20 - 6.60	D 11		5.20 - 5.65	SPT S	N=19 (2,2/3,5,5,6) ID TH64 Er 61%	5.20	4.80											
7	0700	6.60 - 6.60	CS 105																	
		6.60 - 7.05	D 106 D 12	100% rec	6.60 - 7.05	SPT S	N=18 (3,3/3,4,5,6) ID TH64 Er 61%	6.60	3.70											
8	3.30	7.70 - 8.00	CS 108																	
		8.10 - 8.30	D 107		6.60 - 8.10															
9		9.00 - 9.30	CS 110																	
		9.60 - 9.60	D 109 D 13		8.10 - 9.60															
10		9.60 - 9.60	D 109																	
		9.60 - 10.05	D 13		9.60 - 10.05	SPT S	N=16 (2,3/3,4,4,5) ID TH64 Er 61%	9.60	4.40											

General Remarks No hand vanes below 3.70m due to material being too hard. Termination Reason: Borehole completed.	Hard Boring / Chiselling Depths Duration (mins) Tool	Groundwater Entries No. Depth Remarks Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:50 Printed 11 May 2023 13:17:53 © Copyright SOCOTEC UK Limited	Borehole ATKRD_BH02 Sheet 1 of 2
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Borehole Log



Checked 	Depth 0.00 - 1.20 1.20 - 5.20 5.20 - 15.00	Dates 24 Nov 22 - 24 Nov 22 25 Nov 22 - 28 Nov 22 28 Nov 22 - 29 Nov 22	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 5.20m Rotary coring from 5.20m to 15.00m	Equipment Insulated Hand Tools. R74 Commachio 305 R74 Commachio 305	Rig Crew DD/LW DD/LW DD/LW	Logger HP HP HP	Logged 28 Nov 22 28 Nov 22 29 Nov 22	Hole Depth 11.10 15.00	Di. (mm) 101 108	Casing Depth 4.20	Di. (mm) 153	Depth Related Remarks Depth Remarks	Ground Level 117.19 mOD Coordinates E 400387.02 National Grid N 179993.52 System
	Approved 												

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill	
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
										9.60 - 11.10	100 NA NA	Water flush: 5.20 - 15.00	100% rec			Firm and stiff grey silty CLAY. Occasional white shell fragments. (OXFORD CLAY FORMATION)					
		10.70 - 11.00	CS 111											(5.20)							
		11.10 11.10	D 112 D 14		11.10 - 11.55	SPT S	N=19 (2,3/3,4,5,7) ID TH64 Er 61%	11.10	6.10												
		12.20 - 12.50	CS 113							11.10 - 12.60	100 NA NA										
		12.60 12.60	D 114 D 15		12.60 - 13.05	SPT S	N=29 (3,4/6,6,8,9) ID TH64 Er 61%	12.60	7.60												
		14.10 14.10	D 115 D 16		14.10 - 14.55	SPT S	50 (5,6/9,21,20 for 70mm) ID TH64 Er 61%	14.10	7.80	12.60 - 14.10	100 NA NA			13.50	+103.69	Very stiff grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)	12.80-13.30 45 degrees fractures planar smooth clean set concludes with subhorizontal planar smooth clean fracture.				
29 Nov 22	1630	4.20	7.90	15.00	D 116					14.10 - 15.00	100 NA NA										
																					15.00
																END OF EXPLORATORY HOLE					

General Remarks No hand vanes below 3.70m due to material being too hard. Termination Reason: Borehole completed.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.						Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council						Status FINAL		Scale 1:50 Printed 11 May 2023 13:17:53 © Copyright SOCOTEC UK Limited		Borehole ATKRD_BH02 Sheet 2 of 2		

Borehole Log



Checked [Signature]	Depth 0.00 - 1.20 1.20 - 5.20 5.20 - 15.20	Dates 30 Dec 22 - 01 Dec 22 01 Dec 22 - 01 Dec 22 02 Dec 22 - 06 Dec 22	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 5.20m. Rotary coring from 5.20m to 15.20m.	Equipment Insulated Hand Tools. R74 Commachio 305 R74 Commachio 305	Rig Crew DD/LW DD/LW DD/LW	Logger KD KD KD	Logged 06 Dec 22 06 Dec 22 06 Dec 22	Hole Depth 15.20	Dia. (mm) 108	Casing Depth 3.20	Dia. (mm) 131	Depth Related Remarks Depth 0.00 - 15.20	Remarks No groundwater monitored due to water flush.	Ground Level 113.34 mOD	Coordinates E 400326.91 N 179999.18	System
	Approved [Signature]															

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
30 Nov 22	1245															Black MACADAM. Aggregate of angular to subangular fine to coarse mixed lithologies. 3% void spaces. (HIGHWAY CONSTRUCTION)				Flush Cover 0.20
30 Nov 22	1630	0.60	D 1													Black fine to coarse angular to subangular GRAVEL of macadam. (MADE GROUND)				
01 Dec 22	0700	0.60	B 2																	
		1.20	D 3				1.20	Dry												
		1.60 - 2.20	L 4																	
		1.60 - 2.20	DYS																	
		1.70	ES 101	110% rec			2.00													
		2.20	D 103																	
		2.20 - 3.20	L 5																	
		2.20 - 3.20	DYS	100% rec																
		2.40	ES 102																	
		2.60 - 2.90	CS 104																	
		3.00	D 105				3.00													
		3.20	D 6				3.20 - 3.65	Dry												
		3.20 - 4.20	L 7																	
		3.20 - 4.20	DYS	100% rec																
		4.10	D 107				4.00													
		4.20 - 4.65	UT 8																	
		4.20 - 5.20	DYS	45% rec																
		4.70	D 9																	
		4.70 - 5.20	L 10																	
01 Dec 22	1630	3.20	CS 106				5.10													
		4.70 - 5.00	CS 108																	
02 Dec 22	0700	3.20	D 109				5.20 - 5.65	Dry												
		5.00	D 11																	
		5.20	D 11																	
		6.20 - 6.50	CS 110																	
		6.60	D 111																	
		6.70	D 12				6.70 - 7.15													
		7.50	D 113																	
02 Dec 22	1015	3.20	CS 112				8.20 - 8.65													
		4.20	D 13																	
05 Dec 22	1145	3.20																		
		1.10																		
		9.10 - 9.40	CS 114																	
		9.60	D 115																	
		9.70	D 14				9.70 - 10.15													

General Remarks No hand vanes below 5.10m due to material being too hard. Termination Reason: Borehole completed.	Hard Boring / Chiselling		Groundwater Entries			
	Depths	Duration (mins)	Tool	No.	Depth	Remarks

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks	Status FINAL	Scale 1:50	Borehole ATKRD_BH03
Project No. H2060-22	Printed 11 May 2023 13:17:53	© Copyright SOCOTEC UK Limited	AGS	Sheet 1 of 2
Carried out for Wiltshire Council				

Borehole Log



Checked 	Depth 0.00 - 1.20 1.20 - 5.20 5.20 - 15.20	Dates 30 Dec 22 - 01 Dec 22 01 Dec 22 - 01 Dec 22 02 Dec 22 - 06 Dec 22	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 5.20m. Rotary coring from 5.20m to 15.20m.	Equipment Insulated Hand Tools. R74 Commachio 305 R74 Commachio 305	Rig Crew DD/LW DD/LW DD/LW	Logger KD KD KD	Logged 06 Dec 22 06 Dec 22 06 Dec 22	Hole Depth 15.20 Dia. (mm) 108	Casing Depth 3.20 Dia. (mm) 131	Depth Related Remarks Depth Remarks	Ground Level 113.34 mOD Coordinates E 400326.91 National Grid N 179999.18 System
	Approved 										

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
		10.00	D 117							9.70 - 11.20	93 NA NA	Water flush: 5.20 - 15.00	100% rec			Very stiff dark grey slightly sandy CLAY. Frequent white shell fragments. (OXFORD CLAY FORMATION)				
		10.90 - 11.20 11.20	CS 116 D 15		11.20 - 11.65	SPT S	N=19 (2,3/4,4,4,7) ID TH64 Er 61%	3.20	3.80					(7.00)						
		12.70	D 16		12.70 - 13.15	SPT S	N=31 (3,5/7,7,9,8) ID TH64 Er 61%	3.20	3.10											
05 Dec 22 3.20	1630 3.60	14.20	D 17		14.20 - 14.65	SPT S	N=30 (3,3/5,8,8,9) ID TH64 Er 61%	3.20	3.30											
06 Dec 22 3.20	0730 3.30									14.20 - 15.20	100 NA NA									
06 Dec 22	1300 Dry																			15.20 ICE
																END OF EXPLORATORY HOLE				

General Remarks No hand vanes below 5.10m due to material being too hard. Termination Reason: Borehole completed.										Hard Boring / Chiselling Depths Duration (mins) Tool					Groundwater Entries No. Depth Remarks Sealed									
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.										Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL Scale 1:50 Printed 11 May 2023 13:17:53 © Copyright SOCOTEC UK Limited					Borehole ATKRD_BH03 Sheet 2 of 2				

Borehole Log



Checked [Signature]	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20 Dynamic windowless sampling from 1.20m to 5.20m. Rotary coring from 5.20m to 14.80m.	Equipment Insulated Hand Tools. R74 Comacchio 305 R74 Comacchio 305	Rig Crew DD/LW DD/LW DD/LW	Logger KD KD/ER ER/HP	Logged 12 Dec 22 12 Dec 22 14 Dec 22	Hole		Casing		Depth Related Remarks		Ground Level 112.94 mOD	Coordinates E 400315.01 N 179997.99	System
	0.00 - 1.20 1.20 - 5.20 5.20 - 14.80	06 Dec 22 - 07 Dec 22 07 Dec 22 - 07 Dec 22 09 Dec 22 - 13 Dec 22						Depth	Dia. (mm)	Depth	Dia. (mm)					
Approved [Signature]								2.70 14.80	175 108	4.35	131					

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
		10.30	D 16		10.30 - 10.75	SPT S	N=19 (2,4/4,4,6,5) ID TH64 Er 31%	4.35	7.80			Water flush: 6.20 - 14.80					Stiff dark grey silty CLAY. Frequent white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
										10.30 - 11.80	100 NA NA										
12 Dec 22 4.35	1630 8.10	11.80	D 17		11.80 - 12.25	SPT S	N=19 (3,4/4,4,5,6) ID TH64 Er 61%	4.35	7.80				(6.00)								
13 Dec 22 4.35	0800 8.60									11.80 - 13.30	100 NA NA										
		13.30	D 18		13.30 - 13.75	SPT S	N=21 (2,3/4,4,6,7) ID TH64 Er 61%	4.35	6.60												
13 Dec 22 0.00	1630 Dry									13.30 - 14.50	100 NA NA										
													14.80	+98.14			END OF EXPLORATORY HOLE				14.80

General Remarks All hand vanes failed due to stiff material. Termination Reason: Borehole terminated at 14.80m.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:50 Printed 11 May 2023 13:17:54 © Copyright SOCOTEC UK Limited		Borehole ATKRD_BH04 Sheet 2 of 2	
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Borehole Log



Checked [Redacted]	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic sampling from 1.20m to 5.00m. Rotary coring from 5.00m to 15.00m.	Equipment Insulated Hand Tools. MI5 MI5	Rig Crew GC/KD GC/KD GC/KD	Logger HP HP HP	Logged 20 Dec 22 20 Dec 22 20 Dec 22	Hole		Casing		Depth Related Remarks		Ground Level 108.46 mOD	Coordinates E 400195.07 N 179945.04
	0.00 - 1.20 1.20 - 5.00 5.00 - 15.00	15 Dec 22 - 15 Dec 22 16 Dec 22 - 16 Dec 22 16 Dec 22 - 17 Dec 22						Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks		
Approved [Redacted]															System

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
15 Dec 22	0800															Black sandy GRAVEL. Gravel is angular to subangular fine to coarse of sandstone and macadam. Sand is fine to coarse. (HIGHWAY CONSTRUCTION)				
15 Dec 22	1800 Dry	1.20 - 2.00	DYS	62% rec	1.20 - 1.65	SPT S	N=6 (1,1/2,2,1,1) ID	0.00	Dry				1.20	+107.26		Soft light brown silty CLAY. (OXFORD CLAY FORMATION)				
16 Dec 22	0800 Dry	1.50	ES 1		1.50	HV	p 34kPa, r 22kPa													
		2.00	UT 2		2.00															
		2.00 - 3.00	D 101 DYS	80% rec	2.50	HV	p 53kPa, r 34kPa													
		3.00	D 102		3.00 - 3.45	SPT S	N=7 (2,2/1,2,2,2) ID	0.00	Dry											
		3.00 - 4.00	DYS	100% rec																
		4.00	UT 3		4.20	HV	p 55kPa, r 37kPa													
		4.00 - 5.00	D 103 DYS	70% rec																
		5.00	D 104		5.00 - 5.45	SPT S	N=17 (1,3/3,4,5,5) ID	0.00	Dry											
		5.00 - 6.00	DYS	30% rec	5.50	HV	FIELD p 99kPa, r 45kPa			5.00 - 6.50	87 NA NA	Water flush: 5.00 - 6.50								
		5.70 - 6.00	CS 105																	
		6.50	D 106		6.50 - 6.95	SPT S	N=33 (2,4/5,7,8,13) ID	0.00	1.50											
		6.50 - 7.50	CS 107		7.00	HV	FIELD p 163kPa, r 131kPa			6.50 - 8.00	93 NA NA	Water flush: 6.50 - 8.00								
		7.20 - 7.50																		
		8.00	D 108		8.00 - 8.45	SPT S	N=35 (3,6/8,7,9,11) ID	0.00	0.50											
		8.70 - 9.00	CS 108							8.00 - 9.50	93 NA NA	Water flush: 8.00 - 9.50								
		8.00 - 9.50																		
16 Dec 22	1800 Damp	9.50	D 109		9.50 - 9.95	SPT S	N=43 (1,3/4,11,13,15) ID	0.00	Dry											
17 Dec 22	0000 Dry																			

General Remarks No hand vanes below 2.00m due to material being too hard. Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council		Status FINAL		Scale 1:50 Printed 11 May 2023 13:17:54 © Copyright SOCOTEC UK Limited		Borehole ATKRD_BH05		Sheet 1 of 2	
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Borehole Log



Checked 	Depth 0.00 - 1.20 1.20 - 5.00 5.00 - 15.00		Dates 15 Dec 22 - 15 Dec 22 16 Dec 22 - 16 Dec 22 16 Dec 22 - 17 Dec 22		Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic sampling from 1.20m to 5.00m. Rotary coring from 5.00m to 15.00m.		Equipment Insulated Hand Tools. MI5 MI5		Rig Crew GC/KD GC/KD GC/KD		Logger HP HP HP		Logged 20 Dec 22 20 Dec 22 20 Dec 22		Hole Depth 15.00		Casing Dia. (mm) 110		Depth Related Remarks		Ground Level 108.46 mOD	
	Approved 																			Coordinates E 400195.07 N 179945.04		

Casing	Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
			Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
			10.50	D 110							9.50 - 11.00	100 NA NA					Stiff becoming very stiff grey silty CLAY with frequent white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
			10.50 - 10.80	CS 111										(8.50)							
											11.00 - 11.45										
											11.00 - 12.50	93 NA NA									
											12.50 - 12.95										
											12.50 - 14.00	93 NA NA									
			13.50 - 13.80	CS 112																	
			14.00	D 113																	
											14.00 - 14.45										
											14.00 - 15.00	150 NA NA									
	17 Dec 22	1800	15.00	D 113																	
		Dry	15.20 - 15.50	D 114																	

General Remarks No hand vanes below 2.00m due to material being too hard. Termination Reason: Borehole complete.											Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.							Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL		Scale 1:50 Printed 11 May 2023 13:17:54 © Copyright SOCOTEC UK Limited		Borehole ATKRD_BH05 Sheet 2 of 2	

Borehole Log



Checked []	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	Coordinates	National Grid	System												
								Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks																
	0.00 - 1.20 1.20 - 6.00 6.00 - 15.00	13 Dec 22 - 13 Dec 22 14 Dec 22 - 14 Dec 22 14 Dec 22 - 15 Dec 22	Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 6.00m. Rotary coring from 6.00m to 15.00m.	Insulated Hand Tools. MI5 MI5	GC/KD GC/KD GC/KD	HP HP HP	16 Dec 22 16 Dec 22 16 Dec 22	15.00	110			0.00 - 15.00	No groundwater monitored due to water flush.	107.53 mOD	E 400173.73	N 179945.66													
Approved []																													
Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR %	SCR %	RQD %	Water added		Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill					
		Casing	Water	Depth	Type & No.	Records	Depth	Type	Records					Casing	Water				Flush details	Main	Detail								
0	13 Dec 22 0800															(1.20)	+106.33		Greyish black sandy GRAVEL. Gravel is angular to subangular fine to coarse of macadam. Sand is fine to coarse. (MADE GROUND)					Flush Cover					
1	13 Dec 22 1800 0.00 Dry		ES 1		1.20 - 1.65	SPT S	N=5 (1,1/2,1,1,1) ID TH64 Er 61%	0.00	Dry										Soft light brown silty CLAY. (OXFORD CLAY FORMATION)					EPIE					
2	14 Dec 22 0800 0.00 Dry		UT 1 D 101		2.00 - 2.00																				EPIE				
3					3.00 - 3.45	SPT S	N=7 (1,2/2,1,2,2) ID TH64 Er 61%	0.00	Dry																				
4			D 102		3.50 - 3.70	HV	p 63kPa, r 23kPa																						
5			UT 2 D 103		4.00 - 4.30																								
6					5.00 - 5.45	SPT S	N=11 (2,3/2,2,3,4) ID TH64 Er 61%	0.00	Dry											Firm becoming stiff grey mottled light brown silty CLAY. Rare white shell fragments. (OXFORD CLAY FORMATION)									
7			D 104		6.00 - 6.25	SPT S HV	N=21 (2,5/4,6,6,5) ID TH64 Er 61% FIELD p 129kPa, r 75kPa	0.00	Dry	6.00 - 7.50	100 0 0																		
8			CS 105		7.20 - 7.50	HV	FIELD p 144kPa, r 136kPa																						
9					7.50 - 7.95	SPT S	N=25 (3,4/5,5,8,7) ID TH64 Er 61%	0.00	Damp	7.50 - 9.00	87 0 0		Water flush: 6.00 - 9.00 80% rec Grey																
10			CS 106		8.20 - 8.50																								
			D 107		9.00 - 9.45	SPT S	N=34 (2,4/4,9,11,10) ID TH64 Er 61%	0.00	0.40																				
			CS 108		9.20 - 10.00					9.00 - 10.50	100 0 0																		
General Remarks No hand vanes below 7.30m due to material being too hard. Termination Reason: Borehole complete.																		Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed								
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.																		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:50 Printed 11 May 2023 13:17:54 © Copyright SOCOTEC UK Limited		Borehole ATKRD_BH06 Sheet 1 of 2			

Borehole Log



Checked ██████	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 6.00m. Rotary coring from 6.00m to 15.00m.	Equipment Insulated Hand Tools. MI5 MI5	Rig Crew GC/KD GC/KD GC/KD	Logger HP HP HP	Logged 16 Dec 22 16 Dec 22 16 Dec 22	Hole Depth 15.00	Dia. (mm) 110	Casing Depth	Dia. (mm)	Depth	Remarks	Depth Related Remarks	Ground Level 107.53 mOD	Coordinates E 400173.73 N 179945.66	National Grid System
	0.00 - 1.20 1.20 - 6.00 6.00 - 15.00	13 Dec 22 - 13 Dec 22 14 Dec 22 - 14 Dec 22 14 Dec 22 - 15 Dec 22															
Approved ██████																	

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel.	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
		10.50	D 109		10.50 - 10.95	SPT S	N=35 (3,4,7,8,8,12) ID TH64 Er 61%	0.00	0.50				(9.00)			Stiff to very stiff grey silty CLAY. Frequent white shell fragments (<5mm). (OXFORD CLAY FORMATION)				
		11.50	D 110		10.50 - 12.00						100 0 0									
		11.70 - 12.00	CS 111		12.00 - 12.45	SPT S	N=49 (4,6/9,12,14,14) ID TH64 Er 61%	0.00	Damp			Water flush: 9.00 - 15.00		90% rec Grey						
		12.70 - 13.00	CS 112		12.00 - 13.50						93 0 0									
14 Dec 22 0.00	1800 Damp				13.50 - 13.95	SPT S	N=57 (5,8/10,14,17,16) ID TH64 Er 61%	0.00	0.50											
15 Dec 22 0.00	0800 Damp	13.70	D 113		13.50 - 15.00						100 0 0									
15 Dec 22 0.00	1800 Damp	14.70 - 15.00	CS 115										15.00	+92.53		END OF EXPLORATORY HOLE				15.00






























General Remarks No hand vanes below 7.30m due to material being too hard. Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL		Scale 1:50 Printed 11 May 2023 13:17:54		Borehole ATKRD_BH06		© Copyright SOCOTEC UK Limited	Sheet 2 of 2
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Borehole Log



Checked <input type="checkbox"/>	Depth 0.00 - 1.20 1.20 - 6.00 6.00 - 15.00	Dates 08 Dec 22 - 08 Dec 22 09 Dec 22 - 09 Dec 22 12 Dec 22 - 12 Dec 22	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 6.00m. Rotary coring from 6.0m to 15.00m.	Equipment Insulated Hand Tools. MI5 MI5	Rig Crew GC/KD GC/KD GC/KD	Logger KD KD/ER KD/ER	Logged 12 Dec 22 13 Dec 22 13 Dec 22	Hole Depth 15.00 Dia. (mm) 110	Casing Depth 3.00 Dia. (mm) 178	Depth Related Remarks Depth 0.00 - 12.00 Remarks No groundwater monitored due to water flush.	Ground Level Coordinates National Grid System	98.57 mOD E 400039.03 N 179968.78 System
Approved <input type="checkbox"/>												

		Date	Time	Samples		Field Tests		Samp / Test		Coring		Water added		Depth	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Casing	Water	Depth (Diameter)	TCR %	SCR %	RQD %	(Thickness)	Main		Detail				
08 Dec 22	0800	0.30 - 1.10	B 1											(0.30)	+98.27		Black MACADAM. Aggregate of angular to subangular fine to coarse mixed lithologies. 3% void spaces. (HIGHWAY CONSTRUCTION)			Flush Cover	
08 Dec 22	0000 Dry	1.20	ES 101		1.20 - 1.65	SPT S	N=5 (1,2/2,1,1,1)	0.00	Dry					(0.90)	+97.37		Dark grey sandy slightly clayey angular to subangular fine to coarse GRAVEL. Gravel is of flint, sandstone and macadam. (SUB BASE)				
09 Dec 22	0800 Dry	1.20 - 2.00	DYS	69% rec			ID TH64 Er 61%							(0.20)	+97.17		Soft orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded medium to coarse of sandstone. (MADE GROUND)				
		1.80	D 103														Firm to stiff dark brown mottled grey slightly sandy silty CLAY. (OXFORD CLAY FORMATION)				
		2.00	UT 2																		
		2.00 - 3.00	ES 102	77% rec																	
		2.40 - 2.90	DYS																		
		2.90	D 105		3.00 - 3.45	SPT S	N=9 (2,3/2,2,3,2)	0.00	Dry					(4.60)							
		3.00 - 4.00	DYS	100% rec			ID TH64 Er 61%														
		3.60	D 107																		
		3.65 - 4.00	CS 106																		
		4.00	UT 3																		
		4.00 - 5.00	DYS	100% rec																	
		4.60	D 109																		
		5.00 - 6.00	DYS	100% rec	5.00 - 5.45	SPT S	N=17 (2,4/5,3,5,4)	0.00	Dry										5.00 Occasional gypsum crystals (less than 4mm).		
		4.60 - 5.50	CS 108				ID TH64 Er 61%														
		9.80	CS 117																		
		5.60	D 111																		
09 Dec 22	1800 Dry	5.65 - 6.00	CS 110																		
12 Dec 22	0800 Dry	6.00 - 6.45	SPT S		6.00 - 6.45	SPT S	N=29 (4,6/6,7,7,9)	0.00	Dry					6.00	+92.57		Stiff orangish brown mottled grey slightly sandy silty CLAY. (OXFORD CLAY FORMATION)				
		6.00	HV		6.00		ID TH64 Er 61% p 67kPa, r 19kPa							(0.40)	+92.17		Stiff grey silty CLAY. (OXFORD CLAY FORMATION)				
		6.60 - 6.90	CS 113							6.00 - 7.50	100 NA NA										
		7.00	D 112																		
		7.50 - 7.95	SPT S		7.50 - 7.95	SPT S	N=28 (3,4/6,7,7,8)	0.00	Dry				flush: 6.00 - 9.00						90% rec Grey		
		7.90	D 114				ID TH64 Er 61%														
		8.00 - 8.30	CS 115							7.50 - 9.00	100 NA NA										
		9.00 - 9.45	SPT S		9.00 - 9.45	SPT S	N=35 (4,4/8,7,9,11)	0.00	Dry												
							ID TH64 Er 61%														
										9.00 - 10.50	100 NA NA										

General Remarks Hand vanes not undertaken due to material being too stiff. Termination Reason: Borehole complete.	Hard Boring / Chiselling Depths Duration (mins) Tool	Groundwater Entries No. Depth Remarks	Sealed
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Borehole Log



Checked 	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic windowless sampling from 1.20m to 6.00m. Rotary coring from 6.0m to 15.00m.	Equipment Insulated Hand Tools. MI5 MI5	Rig Crew GC/KD GC/KD GC/KD	Logger KD KD/ER KD/ER	Logged 12 Dec 22 13 Dec 22 13 Dec 22	Hole		Casing		Depth Related Remarks	Ground Level 98.57 mOD Coordinates E 400039.03 National Grid N 179968.78 System
	0.00 - 1.20 1.20 - 6.00 6.00 - 15.00	08 Dec 22 - 08 Dec 22 09 Dec 22 - 09 Dec 22 12 Dec 22 - 12 Dec 22						Depth 15.00	Dia. (mm) 110	Depth 3.00	Dia. (mm) 178		
Approved 													

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
		10.00	D 116		10.50 - 10.95	SPT S	N=46 (4,6/10,12,11,13) ID TH64 Er 61%	0.00	Dry				(8.60)			Stiff grey silty CLAY. (OXFORD CLAY FORMATION)				
		11.10	D 118		10.50 - 12.00					100 NA NA										
		11.20 - 11.50	CS 119																	
		12.00 - 12.45			12.00 - 12.45	SPT S	N=29 (4,6/6,7,7,9) ID TH64 Er 61%	0.00	Dry			flush: 9.00 - 15.00		70% rec Grey			12.00 Rare white to pink shell fragments less than 5mm in diameter.			
		12.50	D 120		12.00 - 13.50					100 NA NA										
		12.80 - 12.90	CS 121																	
		13.50 - 13.95			13.50 - 13.95	SPT S	N=41 (5,6/9,8,12,12) ID TH64 Er 61%		Dry											
		14.00	D 123		13.50 - 15.00					100 NA NA										
		14.30 - 14.50	CS 122																	
12 Dec 22	1800	3.00	Dry										15.00	+83.57		END OF EXPLORATORY HOLE			15.00 ICE	

General Remarks Hand vanes not undertaken due to material being too stiff. Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed					
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.						Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council						Status FINAL			Scale 1:50 Printed 11 May 2023 13:17:55 © Copyright SOCOTEC UK Limited			Borehole ATKRD_BH07 Sheet 2 of 2		

Borehole Log



Checked 	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic sampling from 1.20m to 7.80m. Rotary coring from 7.80m to 15.30m.	Equipment Insulated Hand Tools. M15 M15	Rig Crew GC/KD GC/KD GC/KD	Logger CB KD KD	Logged 05 Dec 22 08 Dec 22 08 Dec 22	Hole Depth 15.30	Dia. (mm) 110	Casing Depth Dia. (mm)	Depth Related Remarks Depth Remarks 0.00 - 15.30 No groundwater monitored due to water used in flush.	Ground Level Coordinates National Grid System 97.54 mOD E 400020.10 N 179961.39
	0.00 - 1.20 1.20 - 7.80 7.80 - 15.30	05 Dec 22 - 05 Dec 22 06 Dec 22 - 06 Dec 22 07 Dec 22 - 07 Dec 22										
Approved 												

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
05 Dec 22	0800	0.00 - 0.15 0.10 0.15 - 0.35 0.25 0.35 - 1.20	B 1 D 2 B 3 D 4 B 1										(0.35)	+97.19		Strong black MACADAM. 80% aggregate of fine to medium limestone. 20% small to medium voids. (MACADAM)				Flush Cover	
													0.35			Dark brown gravelly SAND. Gravel is subangular to subrounded fine to coarse of black macadam. (Possible SUB BASE)					
05 Dec 22	1800	0.00											1.20	+96.34		Light greyish brown gravelly CLAY Gravel is strong angular to subangular fine to coarse of concrete. (HIGHWAY CONSTRUCTION)					
06 Dec 22	0800	0.00											2.00	+95.54		Soft to firm greyish brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse of concrete and tarmac. (MADE GROUND)					
													2.00 - 3.00 2.20								
													2.30 - 2.45 2.30								
													2.30 - 2.60								
													2.80								
													3.00								
													3.00 - 4.00								
													3.80								
													4.00 - 5.00								
													4.90								
													5.00								
													5.20 - 5.30								
													5.80								
													6.00 - 7.00								
													6.30 - 6.60								
													6.70								
													7.00								
													7.00 - 7.80								
06 Dec 22	1800	0.00											7.50 - 7.80								
07 Dec 22	0800	0.00											7.80								
													7.80 - 8.25								
													8.40 - 8.60								
													8.70								
													9.10								
													9.30 - 9.75								
													8.80 - 10.80								

General Remarks No hand vane between 2.30m and 4.80m due to material being unsuitable. Hand vane exceeded scale at 8.00m due to material being to stiff. No suitable core samples between 3.00m and 5.00m.	Hard Boring / Chiselling		Groundwater Entries	
	Depths	Duration (mins)	Tool	No. Depth Remarks

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:50 Printed 11 May 2023 13:17:55 © Copyright SOCOTEC UK Limited	Borehole ATKRD_BH08

Borehole Log



Checked [Signature]	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Dynamic sampling from 1.20m to 7.80m. Rotary coring from 7.80m to 15.30m.	Equipment Insulated Hand Tools. M15 M15	Rig Crew GC/KD GC/KD GC/KD	Logger CB KD KD	Logged 05 Dec 22 08 Dec 22 08 Dec 22	Hole		Casing		Depth Related Remarks		Ground Level 97.54 mOD	Coordinates E 400020.10 N 179961.39	System
	0.00 - 1.20 1.20 - 7.80 7.80 - 15.30	05 Dec 22 - 05 Dec 22 06 Dec 22 - 06 Dec 22 07 Dec 22 - 07 Dec 22						Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks			
Approved [Signature]																

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
		10.50 - 10.80	CS 115		10.80 - 11.25	SPT S	N=53 (6,9/10,10,15,18) ID TH64 Er 61%	0.00	2.10											
		11.30	D 116		10.80 - 12.30					100 NA NA		Water flush: 7.80 - 15.30	80% rec Grey	(7.20)						
		12.00 - 12.30	CS 117		12.30 - 12.75	SPT S	N=48 (4,5/8,11,14,15) ID TH64 Er 61%	0.00	1.80											
		13.30	D 118		12.30 - 13.80					93 NA NA										
		13.50 - 13.80	CS 119		13.80 - 14.25	SPT S	N=60 (7,9/13,12,16,19) ID TH64 Er 61%	0.00	1.90											
		14.20	D 120		13.80 - 15.30					100 NA NA										
07 Dec 22 0.00	1800 Damp	15.00 - 15.30	CS 121											15.20	+82.34					15.30
																END OF EXPLORATORY HOLE				

General Remarks No hand vane between 2.30m and 4.80m due to material being unsuitable. Hand vane exceeded scale at 8.00m due to material being to stiff. No suitable core samples between 3.00m and 5.00m.	Hard Boring / Chiselling		Groundwater Entries			
	Depths	Duration (mins)	Tool	No.	Depth	Remarks

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project	Lyneham Banks	Status	Scale 1:50 Printed 11 May 2023 13:17:55 © Copyright SOCOTEC UK Limited	Borehole
	Project No.	H2060-22			
	Carried out for	Wiltshire Council			Sheet 2 of 2

Borehole Log



Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole	Casing	Depth Related Remarks	Ground Level	Coordinates	National Grid	System
<input checked="" type="checkbox"/>	0.00 - 0.47 0.47 - 0.90 0.90 - 2.40 2.40 - 9.90	02 Dec 22 - 05 Dec 22 02 Dec 22 - 02 May 23 05 Dec 22 - 05 Dec 22 05 Dec 22 - 06 Dec 22	Hand dug inspection pit from 0.00m to 0.47m. Rotary open hole from 0.47 to 0.90m Dynamic sampling from 0.47m to 2.40m. Rotary coring from 2.40m to 9.90m.	Insulated Hand Tools. Comacchio 205. Comacchio 205.	PG PG PG	CB KD KD	05 Dec 22 06 Dec 22 06 Dec 22	Depth 9.90	Dia. (mm) 200	Depth 9.90	Dia. (mm) 178	Depth 0.00 - 9.90	Remarks No groundwater monitored due to water flush.	134.07 mOD E 401043.44 N 179694.28

Date	Time	Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Samp / Test	Coring Depth (Diameter)	TCR %	SCR %	RQD %	Water added	Flush details	Depth (Thickness)	Level	Legend	Strata Description	Detail	Chisel	Water Entry	Backfill
02 Dec 22	0800			0.00 - 0.20	B 1												(0.20)	+133.87	Medium strong black MACADAM. 80% aggregate of fine to medium gravel of limestone, 20% small to medium voids. (MACADAM)					
02 Dec 22	1400			0.20 - 0.47	D 2												(0.27)	+133.60	Greyish brown sandy GRAVEL. Gravel is subangular to subrounded fine to coarse of limestone. Sand is fine to coarse. (SUB BASE)					
			Dry	0.40	B 3												(0.43)		No recovery. Concrete slab.					
			Dry	0.40	D 4												(0.90)	+133.17	Firm to stiff orangish brown sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone, tarmac, brick and limestone. (MADE GROUND)					
05 Dec 22	0800			0.90 - 2.40	DYS	50% rec, dia 102mm	1.00	PID	0.0 ppmv								(1.20)	+132.87	Stiff greyish brown slightly sandy silty CLAY. Frequent orangish brown fine sand pockets (<3mm). (OXFORD CLAY FORMATION)					
			Dry	1.00	ES 101		1.25	HV	p 121kPa, r 40kPa								(0.50)	+132.37	Stiff to very stiff dark grey slightly sandy silty CLAY. (OXFORD CLAY FORMATION)					
				2.00	D 103												(8.20)							
				2.30	ES 102		2.30	PID	0.0 ppmv															
				3.50 - 3.80	CS 104																			
				3.80	D 105																			
				3.80	D 106																			
				5.00	D 107																			
				6.00 - 6.20	CS 108																			
				6.70	D 109																			
				6.90 - 7.20	CS 110																			
				7.50	D 111																			
				8.40	CS 112																			
				8.40	D 113																			
				9.00																				
05 Dec 22	0745			8.40																				
06 Dec 22	1630			8.40																				
				8.40																				
				9.90																				
06 Dec 22	1630			9.90																				
				9.90																				

General Remarks	Hard Boring / Chiselling	Groundwater Entries
Depths	Duration (mins)	Tool
No.	Depth	Remarks
Hand dug pit terminated at 0.47m due to encounter with concrete slab. Hand vane at 2.00m exceeded scope. No further hand vanes after due to material being too stiff. No SPT's undertaken as instructed by client. Termination Reason: Borehole terminated at 9.90m as instructed by investigating supervisor due to no limestone being encountered.		

Notes	Project	Status	Scale	Borehole
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Lyneham Banks H2060-22 Wiltshire Council	FINAL	1:50 Printed 11 May 2023 13:17:56	ATKRD_BH09

Borehole Log



Checked [Signature]	Depth	Dates	Method Hand dug inspection pit from 0.00m to 1.20m. Rotary openhole drilling from 0.35 to 1.20m Dynamic windowless sampling from 1.20m to 5.00m. Rotary coring from 5.00m to 10.00m.	Equipment Insulated Hand Tools. Comacchio 205 Comacchio 205	Rig Crew PG PG PG	Logger KD HP HP	Logged 09 Dec 22 09 Dec 22 09 Dec 22	Hole		Casing		Depth Related Remarks		Ground Level 131.51 mOD	Coordinates E 401024.32 N 179720.63	System
	0.00 - 0.35 0.35 - 1.20 1.20 - 5.00 5.00 - 10.00	06 Dec 22 - 06 Dec 22 06 Dec 22 - 06 Dec 22 07 Dec 22 - 07 Dec 22 08 Dec 22 - 08 Dec 22						Depth 10.00	Dia. (mm) 178	Depth 10.00	Dia. (mm) 178	Depth 0.00 - 10.00	Remarks No groundwater monitored due to water flush.			
Approved [Signature]																

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail			
06 Dec 22	1215	0.10 - 0.20 0.20 - 0.30	B 1 B 2										(0.35)	+131.16	[Symbol]	Black MACADAM. Aggregate of angular to subangular fine to coarse mixed lithologies. 3% void spaces. (HIGHWAY CONSTRUCTION)			Flush Cover	
													0.35		[Symbol]	Rotary cored through obstruction.				
06 Dec 22	1615 Dry												(0.85)		[Symbol]					
07 Dec 22	0800 Dry	1.20 - 2.00	DYS	90% rec, dia 102mm	1.20 - 1.65	SPT S	N=11 (1,1/2,3,2,4) ID AR3787 Er 65%	0.00	Dry				1.20	+130.31	[Symbol]	Firm dark grey silty CLAY. (OXFORD CLAY FORMATION)			EPIE	
		1.50	D 101		1.50	HV	p 91kPa, r 82kPa								[Symbol]					
		2.00 - 2.45 2.00 - 3.00	UT 3 DYS	50 blows 100% rec 95% rec, dia 102mm				2.00	Dry				(1.80)		[Symbol]					
		2.45 - 2.50	D 4		2.50	HV	p 118kPa, r 106kPa								[Symbol]					
		2.70	D 102												[Symbol]					
		3.00 - 4.00	DYS	95% rec, dia 102mm	3.00 - 3.45	SPT S	N=22 (2,3/4,6,6,6) ID AR3787 Er 65%	3.00	Dry				3.00	+128.51	[Symbol]	Stiff becoming very stiff dark grey silty CLAY. Occasional white shell fragments (<5mm). (OXFORD CLAY FORMATION)			EPIE	
		3.60	D 103												[Symbol]					
		4.00 - 4.40 4.00 - 4.35 4.00 - 5.00 4.30	UT 7 D 8 DYS D 104	100 blows 40% rec, dia 102mm				4.00	Dry						[Symbol]					
07 Dec 22	1615 Dry	5.00			5.00 - 5.45	SPT S	N=35 (5,8/6,9,10,10) ID AR3787 Er 65%	5.00	Dry						[Symbol]					
08 Dec 22	0800 Dry	5.00													[Symbol]					
		5.80	D 105												[Symbol]					
		6.00 - 6.45			6.00 - 6.45	SPT S	N=32 (4,4/6,8,8,10) ID AR3787 Er 65%	6.00	Damp			Water flush: 5.00 - 7.00	100% rec Grey	(7.00)	[Symbol]		6.00 White shell fragments becoming frequent.		EPIE	
		6.41 - 6.60 6.60	CS 101 D 106												[Symbol]					
		7.00 - 7.45			7.00 - 7.45	SPT S	N=26 (4,4/5,6,7,8) ID AR3787 Er 65%	7.00	Damp			Water flush: 7.00 - 8.00	75% rec Grey		[Symbol]					
		7.70	D 107												[Symbol]					
		8.00 - 8.45			8.00 - 8.45	SPT S	N=32 (4,5/5,7,10,10) ID AR3787 Er 65%	8.00	Damp						[Symbol]					
		8.60	D 108												[Symbol]					
		9.00 - 9.45			9.00 - 9.45	SPT S	N=37 (6,7/7,9,10,11) ID AR3787 Er 65%	9.00	Damp			Water flush: 8.00 - 10.00	100% rec Grey		[Symbol]					
		9.70	D 109												[Symbol]					
08 Dec 22	1615 Damp	10.00			10.00 - 10.45	SPT S	N=42 (6,13/14,10,8,10) ID AR3787 Er 65%	10.00	Damp						[Symbol]	END OF EXPLORATORY HOLE				

General Remarks No hand vanes below 3.00m due to material being too hard. Material not suitable of CS samples between 7.00 and 10.00m. Termination Reason: Borehole complete.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks			Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:50 Printed 11 May 2023 13:17:56 © Copyright SOCOTEC UK Limited		Borehole ATKRD_BH10 Sheet 1 of 1	
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Borehole Log



Checked Approved 	Depth 0.00 - 2.00 2.00 - 4.00 4.00 - 10.00	Dates 13 Mar 23 - 13 Mar 23 13 Dec 22 - 14 Dec 22 14 Dec 22 - 19 Dec 22	Method Rotary open holing from 0.00m to 2.00m. Dynamic sampling from 2.00m to 4.00m. Rotary coring from 4.00m to 10.00m.	Equipment Comacchio 205 Comacchio 205 Comacchio 205	Rig Crew SS SS SS	Logger HP HP HP	Logged 20 Dec 22 20 Dec 22 20 Dec 22	Hole Depth 10.00 Dia. (mm) 203	Casing Depth 3.00 Dia. (mm) 178	Depth Related Remarks Depth 0.00 - 10.00 Remarks No groundwater monitored due to water flush.	Ground Level 130.39 mOD Coordinates E 401020.05 National Grid N 179731.17 System
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	Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel	Water Entry	Backfill
			Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail				
0	13 Dec 00	0800															Black MACADAM. Aggregate of angular to subangular fine to coarse mixed lithologies. 3% void spaces. (HIGHWAY CONSTRUCTION)			Flush Cover		
																	Light brown sandy GRAVEL. Gravel is angular to subangular fine to coarse of sandstone and concrete. Sand is fine to coarse. (SUB BASE)					
1																						
2			2.00 - 3.00	DYS	100% rec, dia 102mm	2.00 - 2.45 2.20	SPT S HV	N=10 (1,2/3,2,2,3) ID AR3259 Er 66% FIELD p 25kPa, r 18kPa	2.00 1.90		2.00 - 3.00	100 NA NA					Firm brown mottled grey silty CLAY. Rare white shell fragments (<5mm). (OXFORD CLAY FORMATION)					
3			3.00 - 3.70	UT 2																		
	13 Dec 22	1615																				
4	14 Dec 22	0745	3.70 - 4.00	DYS	100% rec, dia 102mm	3.80	HV	FIELD p 36kPa, r 24kPa			3.45 - 4.00	55 NA NA										
	14 Dec 22	0745	4.00	D 102		4.00 - 4.45	SPT S	N=27 (3,4/3,6,8,10) ID AR3259 Er 66%	3.00 3.70		4.00 - 5.00	90 NA NA	flush: 4.00 - 5.00	100% rec Grey								
5			5.00 - 5.70	UT 3		4.90	HV	FIELD p 21kPa, r 12kPa														
	15 Dec 22	0800	5.00	D 103																		
	14 Dec 22	1615																				
6			6.00	D 104		6.00 - 6.45	SPT S	FIELD p 26kPa, r 13kPa N=30 (3,4/6,6,8,10) ID AR3259 Er 66%	3.00 4.70		6.00 - 7.00	85 NA NA										
	15 Dec 22	1615				6.60	HV	FIELD p 31kPa, r 14kPa														
7			7.00	D 105		7.00 - 7.45	SPT S	N=34 (4,5/6,7,10,11) ID AR3259 Er 66%	3.00 2.50		7.00 - 8.00	80 NA NA										
	16 Dec 22	0800																				
8			8.00	D 106		8.00 - 8.45	SPT S	FIELD p 14kPa, r 10kPa N=32 (4,6/7,7,8,10) ID AR3259 Er 66%	3.00 5.90		8.00 - 9.00	90 NA NA	flush: 6.00 - 10.00	100% rec Grey								
	16 Dec 22	0800																				
	16 Dec 22	1615																				
9			9.00 - 9.45	SPT S		9.00 - 9.45	SPT S	N=36 (10,14/11,8,9,8) ID AR3259 Er 66%	3.00 7.00		9.00 - 10.00	80 NA NA										
	16 Dec 22	0000	9.60 - 9.90	CS 108		10.00 - 10.45	SPT S	N=46 (6,9/10,11,13,12) ID AR3259 Er 66%	3.00 9.10													
	19 Dec 22	1430																				
10																				10.00 ICE		
	16 Dec 22	0000																				
	19 Dec 22	1430																				

General Remarks No suitable material for CS sampling from 2.00-9.00 mbgl. Hole collapsed over night on the 14/12/2022.												Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks		Sealed
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.								Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:50 Printed 11 May 2023 13:17:56 © Copyright SOCOTEC UK Limited		Borehole ATKRD_BH11 Sheet 1 of 2	

Borehole Log



Checked [Redacted]	Depth	Dates	Method Rotary open holing from 0.00m to 2.00m. Dynamic sampling from 2.00m to 4.00m. Rotary coring from 4.00m to 10.00m.	Equipment Comacchio 205 Comacchio 205 Comacchio 205	Rig Crew SS SS SS	Logger HP HP HP	Logged 20 Dec 22 20 Dec 22 20 Dec 22	Hole		Casing		Depth Related Remarks	Ground Level 130.39 mOD Coordinates E 401020.05 National Grid N 179731.17 System
	0.00 - 2.00 2.00 - 4.00 4.00 - 10.00	13 Mar 23 - 13 Mar 23 13 Dec 22 - 14 Dec 22 14 Dec 22 - 19 Dec 22						Depth	Dia. (mm)	Depth	Dia. (mm)		
Approved [Redacted]								10.00	203	3.00	178		

Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel	Water Entry	Backfill
		Casing	Water	Depth	Type & No.	Records	Depth	Type	Records							Casing	Water			
19 Dec 22	0800															END OF EXPLORATORY HOLE				
3.00	5.70																			
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				
19																				
20																				

General Remarks No suitable material for CS sampling from 2.00-9.00 mbgl. Hole collapsed over night on the 14/12/2022.	Hard Boring / Chiselling Depths Duration (mins) Tool		Groundwater Entries No. Depth Remarks		Sealed

Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:50 Printed 11 May 2023 13:17:56 © Copyright SOCOTEC UK Limited	Borehole ATKRD_BH11 Sheet 2 of 2

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 4.00	Dates 20 Oct 22 - 20 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator.	Crew CS/PB	Logger KD	Logged 20 Oct 22	Dimensions and Orientation Width 3.50 m Length 0.70 m 	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 131.94 mOD	Coordinates E 400751.02	National Grid N 179726.80	System
Approved [Redacted]															

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill	
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail			
20 Oct 22	0800	0.20	D 2		0.20	PID	1.0 ppmv	(0.25)			Dark brown slightly clayey gravelly SAND. Gravel is angular to subangular fine to coarse of red brick, flint and chalk. Frequent rootlets. (MADE GROUND)				
		0.20	ES 1					0.25	+131.69		Firm grey mottled brown slightly gravelly slightly sandy CLAY. Frequent white shell fragments. (Reworked OXFORD CLAY FORMATION)				
		0.50	D 3												
		0.70	ES 4		0.70	PID	1.0 ppmv								
		1.00	D 5		1.00	HV	p 127kPa, r 47kPa	(1.85)							
		1.00 - 1.20	B 6												
		1.50	D 7		1.50	HV	p 132kPa, r 53kPa								
		2.00	D 8		2.00	HV	p 173kPa, r 48kPa								
		2.15 - 2.25	B 9		2.10				+129.84			Stiff grey fissured CLAY. Fissures are 25-35 degrees planar smooth. Gravel is angular to subangular fine to coarse of limestone. Sand is fine. Occasional white shell fragments. (OXFORD CLAY FORMATION)			
		2.50	D 10		2.50	HV	p 194kPa, r 73kPa								
		3.00	D 11		3.00	HV	p 205kPa, r 50kPa	(1.90)							
		3.00 - 3.20	B 12												
		3.80 - 4.00	B 14		4.00	HV	p 207kPa, r 50kPa								
		20 Oct 22	1000 Dry						4.00	+127.94			END OF EXPLORATORY HOLE		4.00

General Remarks Termination Reason: Trial pit completed.										Groundwater Entries No. Depth Remarks Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.										Stability Stable. Shoring None. Weather Rainy.			
Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL					Scale 1:25 Printed 11 May 2023 13:21:39 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP01 Sheet 1 of 1	

Trial Pit Log



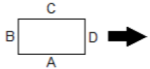
Checked [Redacted]	Depth 0.00 - 4.00	Dates 20 Oct 22 - 20 Oct 22	Method Machineexcavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator.	Crew	Logger KD	Logged 20 Oct 22	Dimensions and Orientation Width 4.50 m Length 0.60 m 	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 131.50 mOD	Coordinates E 400789.87	National Grid N 179726.61	System
Approved [Redacted]															

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
20 Oct 22	1000	0.20	ES 1		0.20	PID	0.0 ppmv				Dark brown slightly clayey gravelly SAND. Gravel is angular to subangular fine to coarse of sandstone, flint, redbrick fragments, chalk and tree roots (up to 150x50mm) (MADE GROUND)			
		0.50 0.50	D 3 ES 2		0.50	PID	0.0 ppmv	(0.95)						
		0.80	ES 4		0.80	PID	0.0 ppmv							
		1.00 1.00 - 1.20	D 5 B 6		0.95	PID	0.0 ppmv		+130.55		Firm light greyish brown mottled orange sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subangular fine to medium of limestone. Abundant white shell fragments. (Reworked OXFORD CLAY FORMATION)			
		1.50 1.50	D 7 ES 8		1.50	PID HV	0.0 ppmv p 115kPa, r 46kPa	(1.75)						
		2.00 2.00 - 2.20	D 9 B 10		2.00	HV	p 128kPa, r 60kPa							
		2.50	D 11		2.50	HV	p 145kPa, r 50kPa							
		3.00 3.00 - 3.20	D 12 B 13		2.70	HV	p 143kPa, r 58kPa		+128.80		Stiff bluish grey fissured CLAY. Fissures are randomly orientated planar smooth. Occasional white shell fragments. (OXFORD CLAY FORMATION)			
		3.50 3.50 - 4.00	D 14 B 15		3.00	HV	p 143kPa, r 58kPa	(1.30)						
		4.00	D 16		3.50	HV	p 166kPa, r 70kPa							
20 Oct 22	1200 Dry	4.00	D 16		4.00	HV	p 194kPa, r 89kPa	4.00	+127.50		END OF EXPLORATORY HOLE			4.00

General Remarks Pipe encountered (most likely disused) however extended the pit 0.80m south away from service. Termination Reason: Trial pit completed.										Stability Stable. Shoring None. Weather Overcast/Damp.			Groundwater Entries No. Depth Remarks Sealed		
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:40 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP02 Sheet 1 of 1			

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 3.80	Dates 18 Oct 22 - 18 Oct 22	Method Machine excavated trial pt to 3.80m.	Equipment Kobelco SK140SR	Crew	Logger KD	Logged 18 Oct 22	Dimensions and Orientation Width 2.80 m Length 0.85 m 	Depth 0.00 - 3.80	Remarks No groundwater encountered during excavation	Depth Related Remarks	Ground Level 126.13 mOD	Coordinates E 400799.48 N 179761.55	System
Approved [Redacted]														

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
18 Oct 22	0800	0.10	D 1							Dark brown gravelly slightly clayey SAND. Gravel is angular to subangular fine to coarse of red brick, broken brown glass, chalk, flint, broken roof tile, nails and occasional rootlets. (MADE GROUND)				
		0.30	ES 2		0.30	PID	0.0 ppmv							
		0.50 0.50	D 4 ES 3		0.50	PID	0.0 ppmv	(1.05)						
		0.80 - 1.00	LB 5											
		1.00	ES 4		1.00	PID	0.0 ppmv	1.05	+125.08	Stiff to very stiff grey mottled orange fissured CLAY. Fissures are randomly orientated planar smooth. Abundant gypsum crystals (up to 5mm) and occasional decaying wood fragments. (OXFORD CLAY FORMATION)				
		1.50 1.50	D 6 ES 7		1.50	PID	0.0 ppmv							
		1.80 - 2.00	B 8							1.60-1.70 Band of weathered orangish brown claystone. Occasional white shell fragments (up to 3mm).				
		2.00 2.00	D 10 ES 9		2.00	PID	0.0 ppmv							
					2.50	D 11		(2.75)						
					3.00 3.00 - 3.20	D 12 B 13								
					3.50	D 16								
18 Oct 22	1700		3.80	D 15		3.80	+122.33	END OF EXPLORATORY HOLE				3.80		

General Remarks Pit terminated at 3.80m as per client instruction.				Stability Stable Shoring None Weather Sun and fog		Groundwater Entries No. Depth Remarks Sealed	
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council		Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:40 © Copyright SOCOTEC UK Limited	
				Trial Pit		ATK_TP03 Sheet 1 of 1	

Trial Pit Log



SOCOTEC

Checked █████	Depth 0.00 - 4.00	Dates 18 Oct 22 - 18 Oct 22	Method Machine excavated trial pit to 4.00m.	Equipment Kobelco SK140SR	Crew	Logger KD	Logged 18 Oct 22	Dimensions and Orientation Width 3.25 m Length 0.65 m	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation	Depth Related Remarks	Ground Level 124.69 mOD	Coordinates E 400773.92 N 179766.34
	Approved █████						System						

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
18 Oct 22	0800										Soft dark brown slightly sandy gravelly CLAY with occasional wood fragments. Sand is fine to medium. Gravel is angular to subangular of red brick, white ceramic tile, flint and glass. (MADE GROUND)			
		0.20	ES 1		0.20	PID	0.0 ppmv							
		0.50	D 3 ES 2		0.50	PID	0.0 ppmv							
		0.70	ES 4		0.70	PID	0.0 ppmv	(1.45)						
		1.00	D 5 B 6											
		1.20	ES 7		1.20	PID	0.0 ppmv							
		1.50	D 8		1.45	+123.24					Firm to stiff brown mottled grey CLAY with occasional white shell fragments. (OXFORD CLAY FORMATION)			
		1.70 - 2.00	B 10 ES 9		1.70	PID	0.0 ppmv							
		2.50	ES 11 D 12		2.50	PID	0.0 ppmv	(2.55)						
		3.00	D 13 B 14											
		3.50	D 15											
18 Oct 22	1700													
		4.00	D 16		4.00	+120.69					3.30 Becoming stiff bluish grey mottled brown clay with occasional fine orange sand pockets (5 x 7 x 3mm) and frequent gypsum crystals (up to 2mm).			
											END OF EXPLORATORY HOLE			4.00

General Remarks Termination reason: Trial Pit complete.	Stability Stable Shoring None Weather Sun	Groundwater Entries No. Depth Remarks Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL Scale 1:25 Printed 11 May 2023 13:21:40 © Copyright SOCOTEC UK Limited	Trial Pit ATK_TP04 Sheet 1 of 1
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Trial Pit Log



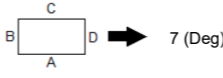
Checked 	Depth 0.00 - 3.90	Dates 18 Oct 22 - 18 Oct 22	Method Machine excavated trial pit to 3.90m.	Equipment Kobelco SK140SR	Crew	Logger KD	Logged 18 Oct 22	Dimensions and Orientation Width 3.48 m Length 0.75 m 	Depth 0.00 - 3.90	Remarks No groundwater encountered during excavation	Depth Related Remarks	Ground Level 122.84 mOD Coordinates E 400788.45 N 179782.16 System
Approved 												

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
18 Oct 22	0800	0.20	ES 1		0.20	PID	0.0 ppmv				Brown gravelly slightly clayey SAND. Gravel is angular to subangular fine to coarse of red brick, rebar, broken glass, flint and broken concrete. Sand is fine to medium. (MADE GROUND)			
		0.50 0.50	D 4 ES 2		0.50	PID	0.0 ppmv							
		0.70	ES 5		0.70	PID	0.0 ppmv							
		1.00 1.00 - 1.20	D 6 B 7					(2.10)				1.10 Dark brown layer of organic matter.		
		1.20	ES 8		1.20	PID	0.0 ppmv							
		1.50	D 9											
		2.00 - 2.20	B 10											
		2.20	ES 11		2.20	PID	0.0 ppmv	2.10	+120.74			Firm brown mottled light brown slightly gravelly CLAY. Gravel is fine to medium of white weatehred limestone. Frequent dark brown organic wood fragments (less than 5mm). (Possible OXFORD CLAY FORMATION)		
		2.50	D 12											
		3.00 3.00 - 3.20	D 14 B 13					(1.80)						
		3.50	D 15											
18 Oct 22	1700	3.80 - 4.00	B 16					3.90	+118.94				3.90	
											END OF EXPLORATORY HOLE			

General Remarks Unable to carry out Hand Vane Tests due to gravel content. Pit terminated at 3.90m as per client instruction.										Stability Stable Shoring None Weather Sun		Groundwater Entries No. Depth Remarks Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:40 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP05 Sheet 1 of 1	

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 3.70	Dates 19 Oct 22 - 19 Oct 22	Method Machine excavated trial pit from 0.00m to 3.70m.	Equipment Kobelco SK140SR	Crew	Logger KD	Logged 19 Oct 22	Dimensions and Orientation Width 3.20 m Length 0.60 m 	Depth 0.00 - 3.70	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 122.86 mOD	Coordinates E 400765.52 N 179784.12
Approved [Redacted]												System	

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
19 Oct 22	1500													
		0.20	ES 1		0.20	PID	0.0 ppmv				Brown slightly clayey gravelly SAND. Gravel is angular to subangular medium to coarse of red brick fragments, broken white ceramic tile, broken concrete (up to 25x10x145mm), sandstone and flint. Occasional pieces of broken green plastic (150x20x200mm). (MADE GROUND)			
		0.50 0.50	D 3 ES 2		0.50	PID	0.0 ppmv							
		0.80	ES 4		0.80	PID	0.0 ppmv	(1.45)						
		1.00 1.00 - 1.20	D 5 B 6											
		1.20	ES 7											
		1.50	D 8		1.50	HV	p 120kPa, r 48kPa	1.45	+121.41		Soft grey mottled dark brown slightly gravelly CLAY. Gravel is subangular fine to medium of white weathered limestone. Abundant black organic matter and frequent wood fragments. (Reworked OXFORD CLAY FORMATION)			
		2.00 - 2.20	B 9		2.00	HV	p 146kPa, r 67kPa							
		2.20	ES 10		2.20	PID	0.0 ppmv							
		2.50	D 11		2.50	HV	p 178kPa, r 79kPa	(2.05)				2.50 Became wet clay.		
		3.00 3.00 - 3.20	D 12 B 13		3.00	HV	p 216kPa, r 85kPa							
19 Oct 22	1700 Dry	3.55 3.55 - 3.70	D 14 B 15		3.50			3.50	+119.36		Stiff orange mottled brown gravelly CLAY. Gravel is subangular to subrounded fine to coarse of white weathered limestone. (OXFORD CLAY FORMATION)			
					3.70			3.70	+119.16		END OF EXPLORATORY HOLE			3.70

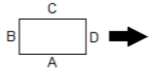
General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Pit terminated at 3.70m as instructed by client. Face B became unstable/collapsed.		Stability Unstable. Shoring None. Weather Sunny.	Groundwater Entries No. Depth Remarks Sealed
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:25 Printed 11 May 2023 13:21:41 © Copyright SOCOTEC UK Limited





ATK_TP06

Trial Pit Log



Checked 	Depth 0.00 - 1.00	Dates 25 Oct 22 - 25 Oct 22	Method Machine excavated trial pit from 0.00m to 1.00m.	Equipment Tracked 360 Excavator.	Crew 	Logger CB	Logged 25 Oct 22	Dimensions and Orientation Width 0.40 m Length 4.00 m 	Depth 0.00 - 1.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks 	Ground Level 114.76 mOD	Coordinates E 400778.87 N 179848.21	National Grid System
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Date	Time	Water	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
			Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
25 Oct 22	1000							(0.20)	+114.56		Brown clayey fine to coarse SAND. (TOPSOIL)				
25 Oct 22	1100	Dry					0.20				Stiff locally soft orangish brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of mudstone. (Possible SOLIFLUCTUAL DEPOSITS)				
							(0.80)								
							1.00	+113.76				END OF EXPLORATORY HOLE			1.00

General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Pit terminated at 1.00m after breaking a land drain and excessive water increase.				Stability Stable. Shoring None. Weather Dry.				Groundwater Entries No. Depth Remarks Sealed							
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL Scale 1:25 Printed 11 May 2023 13:21:41 © Copyright SOCOTEC UK Limited				Trial Pit ATK_TP07 Sheet 1 of 1			

Trial Pit Log



Checked 	Depth 0.00 - 3.80	Dates 26 Oct 22 - 26 Oct 22	Method Machine excavated trial pit from 0.00m to 3.80m.	Equipment Tracked 360 Excavator.	Crew	Logger CB	Logged 26 Oct 22	Dimensions and Orientation Width 0.40 m Length 4.00 m 	Depth	Remarks	Depth Related Remarks Ground Level 114.86 mOD Coordinates E 400779.07 National Grid N 179849.44 System
Approved 											

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
26 Oct 22	0800						(0.20)	+114.66		Brown clayey fine to medium SAND. (TOPSOIL)				
		0.30	ES 101				0.20			Soft to firm orangish brown mottled grey slightly sandy slightly gravelly CLAY with rare limestone cobbles. Gravel is subangular to rounded fine to coarse of mudstone and highly weathered limestone nodules. Sand is fine to medium. (SOLIFLUCTUAL DEPOSITS)				
		0.40 - 0.65	B 1											
		0.50	D 102											
		0.80	ES 103											
		0.95 - 1.30	B 2											
		1.00	D 104		1.00	HV						1		
		1.50	D 105				(2.80)							
		2.00	D 106											
		2.10 - 2.60	B 3		2.00	HV								
		2.50	D 107											
		3.00	D 108		3.00	HV								
		3.30 - 3.80	B 4				(0.80)							
		3.50	D 109											
26 Oct 22	1200						3.80	+111.06			END OF EXPLORATORY HOLE		3.80	
	Damp													

General Remarks Possible slip surface at 0.90m. Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Trial pit completed.				Stability Stable. Shoring None. Weather Dry.		Groundwater Entries No. Depth Remarks 1 0.80 Seepage.		Sealed
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council		Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:41 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP07A Sheet 1 of 1

Trial Pit Log



Checked 	Depth 0.00 - 3.60	Dates 26 Oct 22 - 26 Oct 22	Method Machineexcavated trial pit from 0.00m to 3.60m.	Equipment Tracked 360 Excavator.	Crew	Logger CB	Logged 26 Oct 22	Dimensions and Orientation Width 0.40 m Length 4.00 m 	Depth 0.00 - 3.60	Remarks No groundwater encountered during excavation.	Ground Level 109.48 mOD Coordinates E 400759.64 N 179889.72 System
Approved 											

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
26 Oct 22	1200				0.00	HV	p 39kPa, r 29kPa	(0.25)	+109.24		Brown clayey fine to medium SAND. (TOPSOIL)			
		0.30	ES 101		0.30	PID	0.0 ppmv	0.25	+109.24		Soft to firm orangish brown slightly sandy slightly gravelly becoming gravelly CLAY. Gravel is subangular to subrounded fine to coarse of weathered limestone nodules. Sand is fine to coarse. Moderate to frequent shell fragments. (SOLIFLUCTION MEATERIAL)			
		0.40 - 0.70	B 1											
		0.50	D 102											
		0.80	ES 103											
		1.00	D 104		1.00	PID	0.0 ppmv							
		1.50	D 105					(2.65)						
		1.80	HV		1.80	HV	p 42kPa, r 33kPa							
		2.00	D 106											
		2.10 - 2.70	B 2											
		2.50	D 107											
		2.80	HV		2.80	HV	p 60kPa, r 47kPa	2.90	+106.58		Firm to stiff bluish grey mottled orangish brown slightly sandy slightly gravelly locally gravelly CLAY. Gravel is subangular to subrounded fine to medium of limestone nodules. Sand is fine to coarse. Moderate shell fragments. (OXFORD CLAY FORMATION)			
		3.00	D 108											
		3.00 - 3.55	B 3		3.20	HV	p 68kPa, r 53kPa	(0.70)						
26 Oct 22	1600	3.60	D 109		3.60			3.60	+105.88		END OF EXPLORATORY HOLE		3.60	

General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Trial pit completed.										Stability Unstable. Shoring Yes. Weather Dry.		Groundwater Entries No. Depth Remarks Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:42 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP08A Sheet 1 of 1	

Trial Pit Log



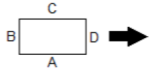
Checked [Redacted]	Depth 0.00 - 4.00	Dates 25 Oct 22 - 25 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator	Crew	Logger CB	Logged 25 Oct 22	Dimensions and Orientation Width 0.40 m Length 3.00 m 	Depth	Remarks	Depth Related Remarks	Ground Level 112.19 mOD	Coordinates E 400751.90 N 179870.60
Approved [Redacted]												System	

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
25 Oct 22	1000	0.20	ES 101		0.20	PID	0.0 ppmv	(0.20)	+111.99		Brown clayey fine to medium SAND. (TOPSOIL)			
		0.50 0.50 - 1.00	D 102 B 1		0.70	HV	p 52kPa, r 43kPa	(1.20)			Soft to firm orangish brown mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded fine of mudstone and mudstone lithorelics. (SOLIFLUCTION MATERIAL)			
		1.00	ES 103		1.00	PID	0.0 ppmv							
		1.50	D 104		1.50	HV	p 58kPa, r 34kPa	1.40	+110.79		Locally soft firm to stiff bluish grey mottled orangish brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to medium of mudstone. Sand is fine to coarse. Rare fossil fragments and rare black organic fibrous pockets. (SOLIFLUCTION MATERIAL)			
		2.00 2.00 - 2.50	D 105 B 2											
		2.50 2.50 - 3.50	D 106 D 108 B 3		2.50	HV	p 62kPa, r 47kPa	(2.60)						
		3.00	D 107											
					3.50	HV	p 183kPa, r 70kPa							
25 Oct 22	1300 Dry	4.00	D 109		4.00			4.00	+108.19		END OF EXPLORATORY HOLE			4.00

General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Trial pit competed.										Stability Unstable. Shoring Yes. Weather Dry.		Groundwater Entries No. Depth Remarks 1 3.90 Seepage.		Sealed	
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:42 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP09 Sheet 1 of 1	

Trial Pit Log



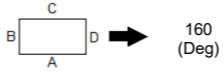
Checked [Redacted]	Depth 0.00 - 4.00	Dates 25 Oct 22 - 25 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator.	Crew	Logger CB	Logged 25 Oct 22	Dimensions and Orientation Width 0.40 m Length 4.00 m 	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 117.34 mOD	Coordinates E 400739.49 N 179838.53	System
Approved [Redacted]														

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
25 Oct 22	1300	0.20 - 0.50 0.20	B 1 ES 101		0.20	PID	0.0 ppmv	(0.15)	+117.19		Brown clayey fine to medium SAND. (TOPSOIL)			
		0.50	D 102								Orangish brown mottled grey slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to medium of mudstone lithorelics, mudstone and fossils. Sand is fine to coarse. (SOLIFLUCTION MATERIAL)			
		0.70	ES 103		0.70	PID	0.0 ppmv							
		1.00	D 104					(2.35)						
		1.10 - 2.50	B 2											
		1.50	D 105		1.50	HV	p 71kPa, r 39kPa							
		2.00	D 106											
		2.30 - 2.70	B 3		2.30	HV	p 74kPa, r 38kPa							
		2.50	D 107		2.50			2.50	+114.84		Firm becoming stiff to very stiff slightly sandy CLAY. Sand is fine to medium. (OXFORD CLAY FORMATION)			
		3.00	D 108		3.00	HV	p 57kPa, r 35kPa							
		3.50	D 109		3.50	HV	p 124kPa, r 40kPa	(1.50)						
		3.50 - 3.80	B 4											
25 Oct 22	1600 Dry	4.00	D 110		4.00			4.00	+113.34		END OF EXPLORATORY HOLE			4.00

General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Trial pit completed.					Stability Unstable. Shoring Yes. Weather Dry.			Groundwater Entries No. Depth Remarks Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:42 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP10 Sheet 1 of 1		

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 3.60	Dates 27 Oct 22 - 27 Oct 22	Method Machine excavated trial pit from 0.00m to 3.60m.	Equipment Tracked 360 Excavator.	Crew	Logger CB	Logged 27 Oct 22	Dimensions and Orientation Width 0.40 m Length 4.00 m 	Depth 0.00 - 3.60	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 116.26 mOD	Coordinates E 400817.38 N 179831.92
Approved [Redacted]												System	

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
27 Oct 22	0800						(0.15)	+116.10		Brown clayey fine to medium SAND. (TOPSOIL)				
		0.30	ES 101		0.30	PID	0.0 ppmv				Soft to firm becoming stiff orangish brown mottled grey slightly sandy locally gravelly CLAY. Gravel is subangular to subrounded fine to coarse of limestone and calcite nodules. Sand is fine to coarse. (SOLIFLUCTION MATERIAL)			
		0.40 - 0.80	B 1											
		0.50	D 102		0.50	HV	p 53kPa, r 42kPa							
		1.00	D 103		1.00	PID	0.0 ppmv							
		1.00	ES 105		1.00	HV	p 53kPa, r 47kPa							
		1.40 - 1.90	B 2											
		1.50	D 104		1.50	HV	p 47kPa, r 47kPa							
		2.00	D 106		2.00	HV	p 67kPa, r 47kPa							
		2.30	D 107											
		2.60 - 3.00	B 3											
		3.00	D 108		3.00	HV	p 65kPa, r 45kPa							
		3.30 - 3.60	B 4											
27 Oct 22	1200 Dry				3.50	HV	p 67kPa, r 59kPa	3.20	+113.06		Firm to stiff bluish grey mottled orangish brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded of limestone. Sand is fine to coarse. (OXFORD CLAY FORMATION)			
					3.60	HV	p 78kPa, r 65kPa	(0.40)						
								3.60	+112.66		END OF EXPLORATORY HOLE			3.60
		3.80	D 109											

General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Trial pit completed on client instruction.				Stability Unstable. Shoring Yes Weather Damp.		Groundwater Entries No. Depth Remarks Sealed	
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council		Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:43 © Copyright SOCOTEC UK Limited	
				Trial Pit ATK_TP11		Sheet 1 of 1	

Trial Pit Log



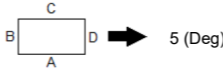
Checked 	Depth 0.00 - 4.00	Dates 27 Oct 22 - 27 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator.	Crew	Logger CB	Logged 27 Oct 22	Dimensions and Orientation Width 0.40 m Length 4.00 m 160 (Deg)	Depth	Remarks	Depth Related Remarks	Ground Level 110.95 mOD	Coordinates E 400815.12 N 179878.72
Approved 	System												

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
27 Oct 22	1200	0.20 - 0.75	B 1		0.30	PID	0.0 ppmv	(0.15)	+110.80		Brown clayey fine to medium SAND. (TOPSOIL)			
		0.30	ES 101		0.50	HV	p 57kPa, r 47kPa				Soft to firm orangish brown mottled grey slightly sandy slightly gravelly locally gravelly CLAY with medium cobble content. Gravel is subangular to subrounded fine to coarse of limestone and limestone nodules. Sand is fine to coarse. Frequent cobbles of limestone and limestone nodules. Rare boulders of limestone (0.70m). (SOLIFLUCTION MATERIAL)			
		0.50	D 102		0.80	PID	0.1 ppmv							
		0.80	ES 103		1.00	HV	p 62kPa, r 42kPa							
		1.00	D 104		1.20 - 1.60	B 2		(2.05)						
		1.50	D 105		2.00	D 106								
		2.00 - 2.20	B 3		2.50	HV	p 76kPa, r 62kPa	2.20	+108.75		Stiff to firm bluish grey mottled orangish brown slightly sandy locally gravelly CLAY with low cobble content. Gravel is subangular to subrounded fine to coarse of limestone and calcite nodules. Rare cobbles of limestone cemented with calcite. (OXFORD CLAY FORMATION)		1	
		2.50	D 107		3.00	HV	p 82kPa, r 47kPa							
		3.00	D 108		3.20 - 3.80	B 4		(1.80)						
		3.20 - 3.80	B 4		3.50	D 109								
		3.50	D 109		4.00	HV	p 87kPa, r 70kPa	4.00	+106.95		END OF EXPLORATORY HOLE			4.00
27 Oct 22	1600 Damp	4.00	D 110											

General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Trial pit completed.		Stability Unstable. Shoring None. Weather Dry.	Groundwater Entries No. Depth Remarks 1 2.20 Seepage.	Sealed
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:25 Printed 11 May 2023 13:21:43 © Copyright SOCOTEC UK Limited	Trial Pit ATK_TP12 Sheet 1 of 1

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 4.00	Dates 19 Oct 22 - 19 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Kobelco SK140SR	Crew	Logger KD	Logged 19 Oct 22	Dimensions and Orientation Width 3.28 m Length 0.70 m 	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 125.28 mOD	Coordinates E 400749.59 N 179768.06
Approved [Redacted]												System	

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
19 Oct 22	0800										Brown slightly clayey gravelly SAND. Gravel is angular to subangular fine to coarse of broken redbrick, fragmented white tile, fragmented concrete, flint and chalk. Occasional rootlets. (MADE GROUND)			
		0.20	ES 1		0.20	PID	0.0 ppmv							
		0.50 0.50	D 3 ES 2		0.50	PID	0.0 ppmv	(1.10)						
		0.80 0.90 - 1.00	ES 4 B 5		0.80	PID	0.0 ppmv							
		1.00 1.00 - 1.50	D 6 ES 7					1.10	+124.18		Stiff to very stiff orangish brown CLAY with abundant white shell fragments. Extremely weak brown/orangish brown weathered claystone band at 1.50-1.60m. (OXFORD CLAY FORMATION)			
		1.50	D 8		1.50	PID	0.0 ppmv							
		2.00 - 2.20 2.00	B 10 ES 9		2.00	PID	0.0 ppmv							
		2.20			2.20	PID	0.0 ppmv							
		2.50	D 11					(2.90)						
		3.00 3.00 - 3.20	D 12 B 13											
		3.50	D 14											
19 Oct 22	1000 Dry	3.80 - 4.00	B 15											
		4.00	D 16		4.00				+121.28					4.00
											END OF EXPLORATORY HOLE			

General Remarks Termination Reason: Trial pit completed.										Groundwater Entries No. Depth Remarks Sealed		
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.										Stability Stable. Shoring None. Weather Sunny/Showers.		
Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council					Status FINAL			Scale 1:25 Printed 11 May 2023 13:21:43 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP13 Sheet 1 of 1		

Trial Pit Log



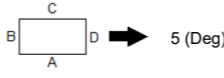
Checked 	Depth 0.00 - 4.00	Dates 19 Oct 22 - 19 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Kobelco SK140SR	Crew	Logger KD	Logged 19 Oct 22	Dimensions and Orientation Width 3.80 m Length 0.65 m 7 (Deg)	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 128.14 mOD	Coordinates E 400751.62 N 179749.94
Approved 												System	

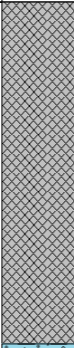
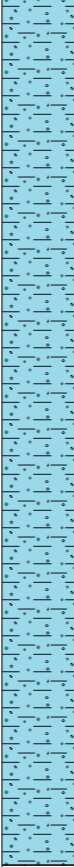
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		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
19 Oct 22	1000													
		0.20	ES 1		0.20	PID	0.0 ppmv							
		0.50 0.50	D 3 ES 2		0.50	PID	0.0 ppmv	(1.25)						
		0.80	ES 4		0.80	PID	0.0 ppmv							
		1.00 1.00 - 1.20	D 5 B 6		1.20	PID	2.1 ppmv	1.25	+126.89					
		1.20	ES 7		1.20	PID	2.1 ppmv							
		1.50	D 8		1.50	HV	p 161kPa, r 78kPa							
		1.70	ES 9		1.70	PID	2.1 ppmv							
		2.00 2.00 - 2.20	D 10 B 11		2.00	HV	p 177kPa, r 75kPa							
		2.50	D 12		2.70	PID	2.1 ppmv	(2.75)						
		3.00 3.00 - 3.20	D 14 B 15		3.00	HV	p 205kPa, r 100kPa							
		3.50	D 16		3.50	HV	p 217kPa, r 50kPa							
19 Oct 22	1200 Dry	3.80 - 4.00	B 17		4.00			4.00	+124.14					4.00
											END OF EXPLORATORY HOLE			

General Remarks Termination Reason: Trial pit completed.					Stability Stable. Shoring None. Weather Sunny.			Groundwater Entries No. Depth Remarks Sealed					
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:43 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP14 Sheet 1 of 1	

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 4.00	Dates 21 Oct 22 - 21 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator.	Crew	Logger KD	Logged 21 Oct 22	Dimensions and Orientation Width 3.10 m Length 0.70 m 	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 129.04 mOD	Coordinates E 400775.09 N 179741.31
Approved [Redacted]												System	

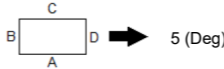
Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
21 Oct 22	0810	0.20	ES 1		0.20	PID	0.3 ppmv	(1.13)	+127.91		Dark brown gravelly slightly clayey SAND. Gravel is angular to subangular fine to coarse of broken red brick, flint, limestone, broken white ceramic and fragmented concrete. (150x200x100mm) (MADE GROUND)			
		0.50 0.50	D 3 ES 2		0.50	PID	0.3 ppmv				Firm to stiff slightly sandy gravelly CLAY. Sand is fine. Gravel is fine to coarse angular to subangular of limestone. Abundant brown and white shell fragments. Occasional pieces of very weak claystone. (Weathered OXFORD CLAY FORMATION)			
		1.00 1.00 - 1.10 1.00	D 14 B 5 ES 4		1.00	PID	0.3 ppmv	(2.87)						
		1.50	D 6		1.50	HV	p 97kPa, r 47kPa							
		2.00 2.00 - 2.20 2.00	D 7 B 9 ES 8		2.00	PID HV	0.0 ppmv p 109kPa, r 48kPa							
		2.50	D 10											
		3.00 3.00 - 3.50	D 11 B 12											
		3.50	D 13											
21 Oct 22	1100 Dry				4.00			4.00	+125.04		END OF EXPLORATORY HOLE			4.00

General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Trial pit completed.										Stability Stable. Shoring None. Weather Rain.		Groundwater Entries No. Depth Remarks Sealed		
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:44 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP15 Sheet 1 of 1	
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Trial Pit Log



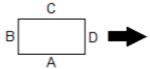
Checked [Redacted]	Depth 0.00 - 4.00	Dates 21 Oct 22 - 21 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator.	Crew	Logger KD	Logged 21 Oct 22	Dimensions and Orientation Width 3.25 m Length 0.55 m 	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 129.42 mOD	Coordinates E 400801.36	National Grid N 179741.74	System
Approved [Redacted]															

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
21 Oct 22	1200										Dark brown gravelly slightly clayey SAND. Gravel is fine to coarse angular to subangular of red brick, sandstone, limestone, flint, broken tile and glass. (MADE GROUND)			
		0.20	ES 1		0.20	PID	0.2 ppmv							
		0.50 0.50	D 3 ES 2		0.50	PID	0.2 ppmv	(0.90)						
		1.00 1.00 - 1.20	D 4 B 5		1.00	HV	p 118kPa, r 53kPa	0.90	+128.52		Stiff slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of limestone with abundant shell fragments. (OXFORD CLAY FORMATION)			
		1.50 1.50	D 7 ES 6		1.50	PID HV	0.3 ppmv p 125kPa, r 54kPa							
		2.00 2.00 - 2.20	D 8 B 9		2.00	HV	p 137kPa, r 52kPa							
		2.50	D 10					(3.10)						
		3.00 3.00 - 3.50	D 11 B 12											
		3.50	D 13											
21 Oct 22	1500 Dry	4.00	D 14		4.00			4.00	+125.42		END OF EXPLORATORY HOLE			4.00

General Remarks Due to H&S concerns with the instability and proximity to the trial pit photo boards could not be placed for photographs of this pit. Termination Reason: Trial pit completed.					Stability Stable. Shoring None. Weather Rain.			Groundwater Entries No. Depth Remarks Sealed			
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:44 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP16 Sheet 1 of 1		

Trial Pit Log



Checked ██████	Depth 0.00 - 3.70	Dates 19 Oct 22 - 19 Oct 22	Method Machine excavated trial pit from 0.00m to 3.70m.	Equipment Kobelco SK140SR	Crew	Logger KD	Logged 19 Oct 22	Dimensions and Orientation Width 3.80 m Length 0.65 m 	Depth 0.00 - 3.70	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 130.71 mOD	Coordinates E 400735.71 N 179748.81
Approved ██████												System	

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
19 Oct 22	1300	0.20	ES 1		0.20	PID	0.0 ppmv				Brown slightly clayey gravelly SAND. Gravel is angular to subangular fine to coarse of red brick, broken slate, white ceramic, flint and broken concrete. Frequent rootlets. (MADE GROUND)			
		0.50 0.50	D 3 ES 2		0.50	PID	0.0 ppmv	(1.15)						
		0.80	ES 4		0.80	PID	0.0 ppmv							
		1.00 1.00 - 1.20	D 5 B 6											
		1.20	ES 7		1.20	PID	0.0 ppmv	1.15	+129.56		Firm orangish brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of white weathered limestone. (Reworked OXFORD CLAY FORMATION)			
		1.50	D 8					(0.45)						
		1.70	ES 9		1.70	PID	0.8 ppmv	1.60	+129.10		Stiff grey fissured CLAY with abundant white shell fragments. Fissures are 30-50 degrees planar smooth. (OXFORD CLAY FORMATION)			
		2.00 2.00 - 2.20	D 10 B 11		2.00	HV	p 131kPa, r 40kPa							
		2.50	D 12					(2.10)						
		3.00	D 13		3.00	HV	p 213kPa, r 40kPa							
		3.30	B 14											
19 Oct 22	1500 Dry	3.50 3.50 - 3.70	D 15 B 16		3.50	HV	p 216kPa, r 216kPa							
					3.70				+127.00		END OF EXPLORATORY HOLE			3.70

General Remarks Termination Reason: Pit terminated at 3.70m at clients instructions. Excavator could not get deeper due to angle/dips on machine.					Stability Stable. Shoring None. Weather Sunny.			Groundwater Entries No. Depth Remarks Sealed					
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:44 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP17 Sheet 1 of 1	

Trial Pit Log



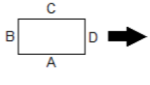
Checked 	Depth 0.00 - 4.00	Dates 20 Oct 22 - 20 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator.	Crew	Logger KD	Logged 20 Oct 22	Dimensions and Orientation Width 3.20 m Length 0.70 m 	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 132.45 mOD Coordinates E 400733.24 N 179729.09 National Grid System
Approved 												

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
20 Oct 22	1200				0.20	PID	1.5 ppmv	(0.55)	+131.90		Dark brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of red brick, flint and sandstone. Frequent rootlets. Sand is fine to medium. (MADE GROUND)			
		0.50 0.50 0.50	D 3 ES 1 ES 2					0.55			Firm brownish orange slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of white and grey weathered limestone. Frequent white shell fragments (Weathered OXFORD CLAY FORMATION)			
		1.00 1.00 - 1.20 1.00	D 4 B 6 ES 5		1.00	PID	1.8 ppmv	(1.05)						
		1.50	D 7					1.60	+130.85		Firm to stiff bluish grey slightly sandy fissured CLAY. Sand is fine (orange). Fissures are randomly orientated on open planar smooth. Abundant white shell fragments. (OXFORD CLAY FORMATION)			
		2.00 2.00 - 2.20	D 8 B 9					(0.70)						
		2.50	D 10					2.30	+130.15		Stiff bluish grey fissured CLAY. Fissures are 15-35 degrees planar smooth. Abundant white shell fragments. (OXFORD CLAY FORMATION)			
		3.00 3.00 - 3.20	D 11 B 12		3.00	HV	p 91kPa, r 49kPa	(1.70)						
		3.50	D 13											
20 Oct 22	1400 Dry	3.80	B 14											
		4.00	D 15		4.00	HV	p 113kPa, r 47kPa	4.00	+128.45		END OF EXPLORATORY HOLE			4.00

General Remarks Termination Reason: Trial pit completed.				Stability Stable. Shoring None. Weather Rainy.				Groundwater Entries No. Depth Remarks Sealed					
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:44 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP18 Sheet 1 of 1	

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 4.00	Dates 20 Oct 22 - 20 Oct 22	Method Machine excavated trial pit from 0.00m to 4.00m.	Equipment Tracked 360 Excavator,	Crew	Logger KD	Logged 20 Oct 22	Dimensions and Orientation Width 3.80 m Length 0.60 m 	Depth 0.00 - 4.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 133.07 mOD	Coordinates E 400786.26	National Grid N 179714.22	System
Approved [Redacted]															

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
20 Oct 22	1400	0.10	ES 1		0.10	PID	1.1 ppmv	(0.20)	+132.87		Soft dark brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of limestone and occasional red brick fragments. (MADE GROUND)			
		0.50	D 2								Firm greyish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of chalk. Sand is fine. (Reworked OXFORD CLAY FORMATION)			
		0.60	ES 3		0.60	PID	1.1 ppmv	(0.95)						
		1.00	D 4											
		1.00 - 1.10	B 5											
		1.50	D 6		1.50	HV	p 111kPa, r 54kPa							
		2.00	D 7		2.00	HV	p 144kPa, r 42kPa							
		2.00 - 2.20	B 8											
		2.50	D 9		2.50	HV	p 143kPa, r 37kPa	(2.85)						
		3.00	D 10		3.00	HV	p 150kPa, r 44kPa							
		3.00 - 3.20	B 11											
		3.50	CS 12		3.50	HV	p 202kPa, r 63kPa							
20 Oct 22	1700 Dry	3.80 - 4.00	B 13											
		4.00	D 14		4.00	HV	p 208kPa, r 58kPa	4.00	+129.07					
											END OF EXPLORATORY HOLE			4.00

General Remarks Termination Reason: Trial pit completed.					Stability Stable. Shoring None. Weather Rainy.			Groundwater Entries No. Depth Remarks Sealed					
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.					Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council			Status FINAL		Scale 1:25 Printed 11 May 2023 13:21:45 © Copyright SOCOTEC UK Limited		Trial Pit ATK_TP19 Sheet 1 of 1	

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 3.00	Dates 07 Dec 22 - 07 Dec 22	Method Machine excavated trial pit from 0.00m to 3.00m.	Equipment Doosun DX85R.	Crew CV	Logger HP	Logged 07 Dec 22	Dimensions and Orientation Width 0.90 m Length 3.60 m 	Depth 0.00 - 3.00	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level 130.65 mOD	Coordinates E 401020.82 N 179728.82
Approved [Redacted]												System	

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
07 Dec 22	0900	0.00 - 0.15	B 1								Black sandy angular to subangular fine to coarse GRAVEL of macadam. Sand is fine to coarse. (MADE GROUND)			
		0.15	D 2				(0.50)							
		0.15	ES 12											
		0.60	D 4				0.50	+130.15			Light brown sandy GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of sandstone and concrete. Sand is fine to coarse. Cobbles are angular fine to medium of concrete. (MADE GROUND)			
		0.60	B 3											
		0.60	ES 13											
		1.30 - 1.40	B 5											
		1.30	ES 14											
		1.50	D 7											
		1.50	B 6									Soft light brown CLAY. (OXFORD CLAY FORMATION)		
07 Dec 22	1300 Dry	2.20	D 9				2.00	+128.65			Firm light brown mottled grey CLAY. (OXFORD CLAY FORMATION)			
		2.20	B 8				(0.10)							
		2.20					2.10	+128.55			Stiff grey CLAY. (OXFORD CLAY FORMATION)			
		3.00	D 11				(0.90)							
07 Dec 22	1300 Dry	3.00	B 10							END OF EXPLORATORY HOLE				
07 Dec 22	1300 Dry	3.00				3.00	+127.65							

General Remarks Termination Reason: Trial pit complete.		Stability Stable. Shoring None. Weather Clear.		Groundwater Entries No. Depth Remarks Sealed	
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.		Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council		Status FINAL Scale 1:25 Printed 11 May 2023 14:02:05 © Copyright SOCOTEC UK Limited	
				Trial Pit ATKRD_TP01 Sheet 1 of 1	

Trial Pit Log



Checked [Redacted]	Depth 0.00 - 0.60	Dates 01 Nov 22 - 01 Nov 22	Method Hand dug inspection pit from 0.00m to 0.60m.	Equipment Insulated Hand Tools.	Crew WM	Logger KD	Logged 09 Nov 22	Dimensions and Orientation Width Length 	Depth 0.00 - 0.60	Remarks No groundwater encountered during excavation.	Depth Related Remarks	Ground Level Coordinates National Grid System	131.41 mOD E 401026.80 N 179720.43
Approved [Redacted]													

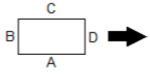
Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
01 Nov 22	0800	0.10 - 0.30	B 1				(0.30)	+131.11		Dark brown slightly clayey gravelly SAND. Gravel is subangular to subrounded fine to medium of flint and sandstone. Occasional plastic (<5mm). Frequent rootlets. (MADE GROUND/TOPSOIL)				
01 Nov 22	0900	0.35 - 0.40	B 2				(0.10)	+131.01		Soft dark grey sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of chalk. (Reworked OXFORD CLAY FORMATION)				
		0.45 - 0.60	B 3				(0.20)	+130.81		Firm orangish brown mottled grey silty CLAY. (OXFORD CLAY FORMATION)				
							0.60			END OF EXPLORATORY HOLE			0.60	

General Remarks Termination Reason: Inspection pit terminated at 0.60m due to no water encountered.	Stability Shoring Weather	Groundwater Entries No. Depth Remarks Sealed
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Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Status FINAL	Scale 1:10 Printed 11 May 2023 14:03:33 © Copyright SOCOTEC UK Limited	Trial Pit ATKRD_IP01 Sheet 1 of 1
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Trial Pit Log



Checked [Redacted]	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation Width 0.40 m Length 0.40 m 	Depth	Remarks	Depth Related Remarks	Ground Level Coordinates National Grid	System
	0.00 - 0.20	01 Nov 22 - 01 Nov 22	Hand dug inspection pit from 0.00m to 0.20m	Insulated Hand Tools.	WM	KD	01 Nov 22						
Approved [Redacted]													

Date	Time	Samples			Field Tests			Depth (Thickness)	Level	Legend	Strata Description		Water Entry	Backfill
		Depth	Type & No.	Records	Depth	Type	Records				Main	Detail		
01 Nov 22	0900										Dark brown slightly clayey gravelly SAND. Gravel is subangular to subrounded fine to medium of flint and sandstone. Occasional plastic (<5mm). Frequent rootlets. (MADE GROUND/TOPSOIL)			
01 Nov 22	0800						(0.20)							
		0.20	EW 1				0.20				END OF EXPLORATORY HOLE			0.20

General Remarks Termination Reason: Inspection pit undertaken to facilitate water sampling that was unable to be completed in ATKRD_IP01. Inspection pit terminated at 0.20m.										Stability Stable Shoring None Weather		Groundwater Entries <table border="1"> <tr> <th>No.</th> <th>Depth</th> <th>Remarks</th> </tr> <tr> <td>1</td> <td>0.20</td> <td>Seepage.</td> </tr> </table>		No.	Depth	Remarks	1	0.20	Seepage.	Sealed
No.	Depth	Remarks																		
1	0.20	Seepage.																		
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.				Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council				Status FINAL		Scale 1:10 Printed 11 May 2023 14:04:08 © Copyright SOCOTEC UK Limited		Trial Pit ATKRD_IP02 Sheet 1 of 1								

APPENDIX C FIELD TESTING

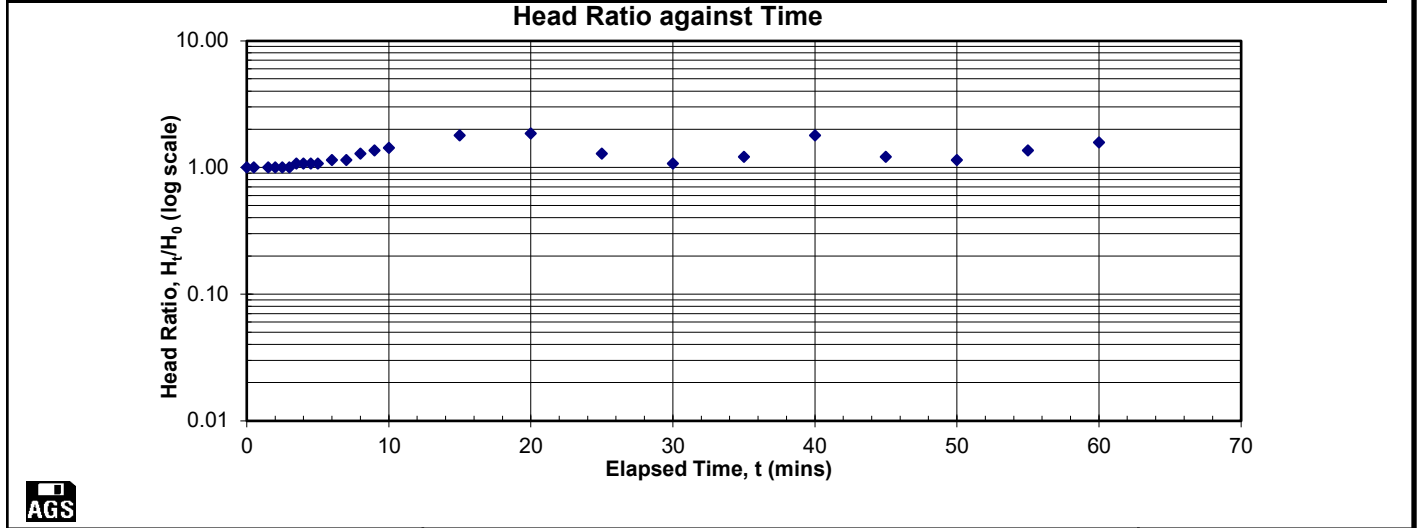
Variable Head Permeability Tests

ATK_BH05
ATK_BH09
ATK_BH10
ATK_BH14
ATK_BH17

Variable Head Permeability Test



<p>LOCATION TYPE Standpipe</p> <p>TEST TYPE Rising Head</p> <p>DETAILS OF TEST ZONE:</p> <p>Top of response zone 1.80 m BGL</p> <p>Base of response zone 4.60 m BGL</p> <p>Diameter of borehole (D) 93 mm</p> <p>Height of tubing above ground level (datum) 0.14 m</p> <p>Diameter of standpipe tubing 50 mm</p>	<p>BOREHOLE No. ATK_BH05</p> <p>TEST NUMBER 1</p> <p>Date of test 16-Feb-23</p> <p>Test operator HP/PB</p> <p>TEST ZONE CONDITIONS</p> <p>Diameter of response zone (D) 93 mm</p> <p>Length of response zone (L) 2800 mm</p> <p>Standpipe piezometer</p> <p>Shape factor (F) after Hvorslev (1951) 4.89 m</p>																																																																																																								
<p>TEST DATA</p> <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Elapsed time, t (minutes)</th> <th>Depth to water below datum (m)</th> <th>Head, H_t (m)</th> <th>Head Ratio H_t/H_0</th> </tr> </thead> <tbody> <tr><td>0</td><td>4.58</td><td>-0.14</td><td>1.00</td></tr> <tr><td>0.5</td><td>4.58</td><td>-0.14</td><td>1.00</td></tr> <tr><td>1.5</td><td>4.58</td><td>-0.14</td><td>1.00</td></tr> <tr><td>2</td><td>4.58</td><td>-0.14</td><td>1.00</td></tr> <tr><td>2.5</td><td>4.58</td><td>-0.14</td><td>1.00</td></tr> <tr><td>3</td><td>4.58</td><td>-0.14</td><td>1.00</td></tr> <tr><td>3.5</td><td>4.57</td><td>-0.15</td><td>1.07</td></tr> <tr><td>4</td><td>4.57</td><td>-0.15</td><td>1.07</td></tr> <tr><td>4.5</td><td>4.57</td><td>-0.15</td><td>1.07</td></tr> <tr><td>5</td><td>4.57</td><td>-0.15</td><td>1.07</td></tr> <tr><td>6</td><td>4.56</td><td>-0.16</td><td>1.14</td></tr> <tr><td>7</td><td>4.56</td><td>-0.16</td><td>1.14</td></tr> <tr><td>8</td><td>4.54</td><td>-0.18</td><td>1.29</td></tr> <tr><td>9</td><td>4.53</td><td>-0.19</td><td>1.36</td></tr> <tr><td>10</td><td>4.52</td><td>-0.20</td><td>1.43</td></tr> <tr><td>15</td><td>4.47</td><td>-0.25</td><td>1.79</td></tr> <tr><td>20</td><td>4.46</td><td>-0.26</td><td>1.86</td></tr> <tr><td>25</td><td>4.54</td><td>-0.18</td><td>1.29</td></tr> <tr><td>30</td><td>4.57</td><td>-0.15</td><td>1.07</td></tr> <tr><td>35</td><td>4.55</td><td>-0.17</td><td>1.21</td></tr> <tr><td>40</td><td>4.47</td><td>-0.25</td><td>1.79</td></tr> <tr><td>45</td><td>4.55</td><td>-0.17</td><td>1.21</td></tr> <tr><td>50</td><td>4.56</td><td>-0.16</td><td>1.14</td></tr> <tr><td>55</td><td>4.53</td><td>-0.19</td><td>1.36</td></tr> <tr><td>60</td><td>4.50</td><td>-0.22</td><td>1.57</td></tr> </tbody> </table>	Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0	0	4.58	-0.14	1.00	0.5	4.58	-0.14	1.00	1.5	4.58	-0.14	1.00	2	4.58	-0.14	1.00	2.5	4.58	-0.14	1.00	3	4.58	-0.14	1.00	3.5	4.57	-0.15	1.07	4	4.57	-0.15	1.07	4.5	4.57	-0.15	1.07	5	4.57	-0.15	1.07	6	4.56	-0.16	1.14	7	4.56	-0.16	1.14	8	4.54	-0.18	1.29	9	4.53	-0.19	1.36	10	4.52	-0.20	1.43	15	4.47	-0.25	1.79	20	4.46	-0.26	1.86	25	4.54	-0.18	1.29	30	4.57	-0.15	1.07	35	4.55	-0.17	1.21	40	4.47	-0.25	1.79	45	4.55	-0.17	1.21	50	4.56	-0.16	1.14	55	4.53	-0.19	1.36	60	4.50	-0.22	1.57	<p>GROUNDWATER CONDITIONS</p> <p>Depth to groundwater prior to test 4.58 m BGL</p> <p>Groundwater level for analysis 4.58 m BGL (Based on groundwater depth prior to test)</p> <p>CALCULATED VALUES</p> <p>Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)</p> <p>Differential head at start of test, H_0 -0.14 m</p> <p>Differential head at end of test, H_t -0.22 m</p> <p>Time elapsed at end of test 60 mins</p> <p>Proportion of test recovery -57 %</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin-top: 10px;"> <p>Permeability (k) = m/sec</p> </div> <p>REMARKS</p> <p>Raising head test could not be undertaken due to water draining faster than it can be added. Unable to assign a permeability value due to fluctuations in water level during testing.</p>
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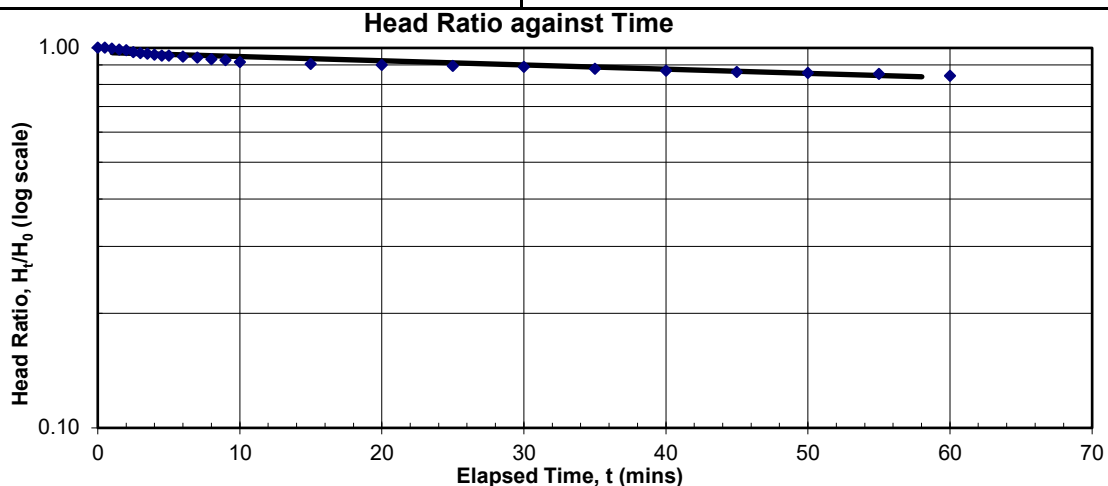
<p>Checked:</p> <p>Approved:</p>	<p>Notes:</p>	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Test ATK_BH05</p>
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Variable Head Permeability Test



<p>LOCATION TYPE Standpipe</p> <p>TEST TYPE Rising Head</p> <p>DETAILS OF TEST ZONE:</p> <p>Top of response zone 0.80 m BGL</p> <p>Base of response zone 7.70 m BGL</p> <p>Diameter of borehole (D) 108 mm</p> <p>Height of tubing above ground level (datum) 0.00 m</p> <p>Diameter of standpipe tubing 50 mm</p>	<p>BOREHOLE No. ATK_BH09</p> <p>TEST NUMBER 1</p> <p>Date of test 16-Feb-23</p> <p>Test operator HP</p> <p>TEST ZONE CONDITIONS</p> <p>Diameter of response zone (D) 108 mm</p> <p>Length of response zone (L) 6900 mm</p> <p>Standpipe piezometer</p> <p>Shape factor (F) after Hvorslev (1951) 10.22 m</p>																																																																																																												
<p>TEST DATA</p> <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Elapsed time, t (minutes)</th> <th>Depth to water below datum (m)</th> <th>Head, H_t (m)</th> <th>Head Ratio H_t/H₀</th> </tr> </thead> <tbody> <tr><td>0</td><td>6.27</td><td>1.91</td><td>1.00</td></tr> <tr><td>0.5</td><td>6.27</td><td>1.91</td><td>1.00</td></tr> <tr><td>1</td><td>6.26</td><td>1.90</td><td>0.99</td></tr> <tr><td>1.5</td><td>6.25</td><td>1.89</td><td>0.99</td></tr> <tr><td>2</td><td>6.24</td><td>1.88</td><td>0.98</td></tr> <tr><td>2.5</td><td>6.22</td><td>1.86</td><td>0.97</td></tr> <tr><td>3</td><td>6.21</td><td>1.85</td><td>0.97</td></tr> <tr><td>3.5</td><td>6.20</td><td>1.84</td><td>0.96</td></tr> <tr><td>4</td><td>6.19</td><td>1.83</td><td>0.96</td></tr> <tr><td>4.5</td><td>6.18</td><td>1.82</td><td>0.95</td></tr> <tr><td>5</td><td>6.18</td><td>1.82</td><td>0.95</td></tr> <tr><td>6</td><td>6.17</td><td>1.81</td><td>0.95</td></tr> <tr><td>7</td><td>6.16</td><td>1.80</td><td>0.94</td></tr> <tr><td>8</td><td>6.14</td><td>1.78</td><td>0.93</td></tr> <tr><td>9</td><td>6.13</td><td>1.77</td><td>0.93</td></tr> <tr><td>10</td><td>6.11</td><td>1.75</td><td>0.92</td></tr> <tr><td>15</td><td>6.09</td><td>1.73</td><td>0.91</td></tr> <tr><td>20</td><td>6.08</td><td>1.72</td><td>0.90</td></tr> <tr><td>25</td><td>6.07</td><td>1.71</td><td>0.90</td></tr> <tr><td>30</td><td>6.06</td><td>1.70</td><td>0.89</td></tr> <tr><td>35</td><td>6.04</td><td>1.68</td><td>0.88</td></tr> <tr><td>40</td><td>6.02</td><td>1.66</td><td>0.87</td></tr> <tr><td>45</td><td>6.01</td><td>1.65</td><td>0.86</td></tr> <tr><td>50</td><td>6.00</td><td>1.64</td><td>0.86</td></tr> <tr><td>55</td><td>5.99</td><td>1.63</td><td>0.85</td></tr> <tr><td>60</td><td>5.97</td><td>1.61</td><td>0.84</td></tr> </tbody> </table>	Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H _t (m)	Head Ratio H _t /H ₀	0	6.27	1.91	1.00	0.5	6.27	1.91	1.00	1	6.26	1.90	0.99	1.5	6.25	1.89	0.99	2	6.24	1.88	0.98	2.5	6.22	1.86	0.97	3	6.21	1.85	0.97	3.5	6.20	1.84	0.96	4	6.19	1.83	0.96	4.5	6.18	1.82	0.95	5	6.18	1.82	0.95	6	6.17	1.81	0.95	7	6.16	1.80	0.94	8	6.14	1.78	0.93	9	6.13	1.77	0.93	10	6.11	1.75	0.92	15	6.09	1.73	0.91	20	6.08	1.72	0.90	25	6.07	1.71	0.90	30	6.06	1.70	0.89	35	6.04	1.68	0.88	40	6.02	1.66	0.87	45	6.01	1.65	0.86	50	6.00	1.64	0.86	55	5.99	1.63	0.85	60	5.97	1.61	0.84	<p>GROUNDWATER CONDITIONS</p> <p>Depth to groundwater prior to test 4.36 m BGL</p> <p>Groundwater level for analysis 4.36 m BGL (Based on groundwater depth prior to test)</p> <p>CALCULATED VALUES</p> <p>Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)</p> <p>Differential head at start of test, H₀ 1.91 m</p> <p>Differential head at end of test, H_t 1.61 m</p> <p>Time elapsed at end of test 60 mins</p> <p>Proportion of test recovery 16 %</p> <p>Coordinates of best fit line to data:</p> <p style="margin-left: 40px;">t₁ = 1.0 mins H₁/H₀ = 0.970</p> <p style="margin-left: 40px;">t₂ = 58.0 mins H₂/H₀ = 0.840</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin-top: 10px;"> <p>Permeability (k) = 8.1E-09 m/sec</p> </div> <p>REMARKS</p> <p>Falling head test could not be undertaken due to water draining faster than it could be added. Response zone is not fully saturated and 75% recovery not achieved.</p>
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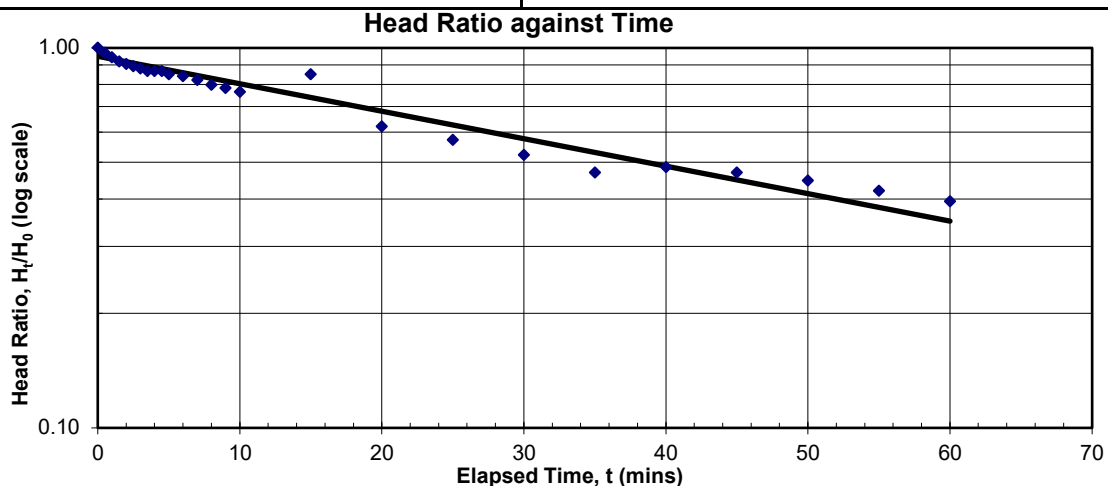


<p>Checked:</p> <p>Approved:</p>	<p>Notes:</p>	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Test ATK_BH09</p>
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Variable Head Permeability Test



<p>LOCATION TYPE Standpipe</p> <p>TEST TYPE Rising Head</p> <p>DETAILS OF TEST ZONE:</p> <p>Top of response zone 1.30 m BGL</p> <p>Base of response zone 8.20 m BGL</p> <p>Diameter of borehole (D) 150 mm</p> <p>Height of tubing above ground level (datum) 0.00 m</p> <p>Diameter of standpipe tubing 50 mm</p>	<p>BOREHOLE No. ATK_BH10</p> <p>TEST NUMBER 1</p> <p>Date of test 16-Feb-23</p> <p>Test operator HP</p> <p>TEST ZONE CONDITIONS</p> <p>Diameter of response zone (D) 150 mm</p> <p>Length of response zone (L) 6900 mm</p> <p>Standpipe piezometer</p> <p>Shape factor (F) after Hvorslev (1951) 10.95 m</p>																																																																																																												
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Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H _t (m)	Head Ratio H _t /H ₀																																																																																																										
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2	6.95	2.39	0.91																																																																																																										
2.5	6.92	2.36	0.89																																																																																																										
3	6.89	2.33	0.88																																																																																																										
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4	6.85	2.29	0.87																																																																																																										
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5	6.81	2.25	0.85																																																																																																										
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7	6.73	2.17	0.82																																																																																																										
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25	6.07	1.51	0.57																																																																																																										
30	5.94	1.38	0.52																																																																																																										
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40	5.84	1.28	0.48																																																																																																										
45	5.80	1.24	0.47																																																																																																										
50	5.74	1.18	0.45																																																																																																										
55	5.67	1.11	0.42																																																																																																										
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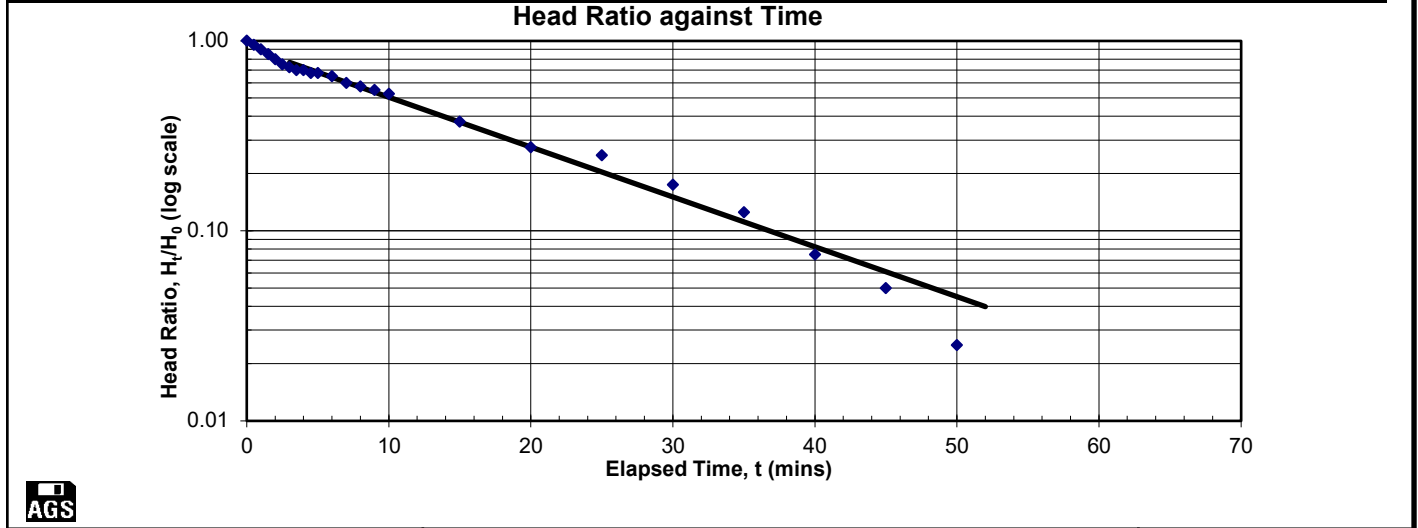


<p>Checked:</p> <p>Approved:</p>	<p>Notes:</p>	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Test ATK_BH10</p>
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Variable Head Permeability Test



<p>LOCATION TYPE Standpipe</p> <p>TEST TYPE Falling Head</p> <p>DETAILS OF TEST ZONE:</p> <p>Top of response zone 0.90 m BGL</p> <p>Base of response zone 3.00 m BGL</p> <p>Diameter of borehole (D) 178 mm</p> <p>Height of tubing above ground level (datum) 0.00 m</p> <p>Diameter of standpipe tubing 50 mm</p>	<p>BOREHOLE No. ATK_BH14</p> <p>TEST NUMBER 1</p> <p>Date of test 16-Feb-23</p> <p>Test operator HP</p> <p>TEST ZONE CONDITIONS</p> <p>Diameter of response zone (D) 178 mm</p> <p>Length of response zone (L) 2100 mm</p> <p>Standpipe piezometer</p> <p>Shape factor (F) after Hvorslev (1951) 4.73 m</p>																																																																																																												
<p>TEST DATA</p> <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Elapsed time, t (minutes)</th> <th>Depth to water below datum (m)</th> <th>Head, H_t (m)</th> <th>Head Ratio H_t/H₀</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.00</td><td>0.40</td><td>1.00</td></tr> <tr><td>0.5</td><td>0.02</td><td>0.38</td><td>0.95</td></tr> <tr><td>1</td><td>0.04</td><td>0.36</td><td>0.90</td></tr> <tr><td>1.5</td><td>0.06</td><td>0.34</td><td>0.85</td></tr> <tr><td>2</td><td>0.08</td><td>0.32</td><td>0.80</td></tr> <tr><td>2.5</td><td>0.10</td><td>0.30</td><td>0.75</td></tr> <tr><td>3</td><td>0.11</td><td>0.29</td><td>0.73</td></tr> <tr><td>3.5</td><td>0.12</td><td>0.28</td><td>0.70</td></tr> <tr><td>4</td><td>0.12</td><td>0.28</td><td>0.70</td></tr> <tr><td>4.5</td><td>0.13</td><td>0.27</td><td>0.68</td></tr> <tr><td>5</td><td>0.13</td><td>0.27</td><td>0.68</td></tr> <tr><td>6</td><td>0.14</td><td>0.26</td><td>0.65</td></tr> <tr><td>7</td><td>0.16</td><td>0.24</td><td>0.60</td></tr> <tr><td>8</td><td>0.17</td><td>0.23</td><td>0.58</td></tr> <tr><td>9</td><td>0.18</td><td>0.22</td><td>0.55</td></tr> <tr><td>10</td><td>0.19</td><td>0.21</td><td>0.53</td></tr> <tr><td>15</td><td>0.25</td><td>0.15</td><td>0.38</td></tr> <tr><td>20</td><td>0.29</td><td>0.11</td><td>0.28</td></tr> <tr><td>25</td><td>0.30</td><td>0.10</td><td>0.25</td></tr> <tr><td>30</td><td>0.33</td><td>0.07</td><td>0.18</td></tr> <tr><td>35</td><td>0.35</td><td>0.05</td><td>0.13</td></tr> <tr><td>40</td><td>0.37</td><td>0.03</td><td>0.08</td></tr> <tr><td>45</td><td>0.38</td><td>0.02</td><td>0.05</td></tr> <tr><td>50</td><td>0.39</td><td>0.01</td><td>0.03</td></tr> <tr><td>55</td><td>0.40</td><td>0.00</td><td>0.00</td></tr> <tr><td>60</td><td>0.40</td><td>0.00</td><td>0.00</td></tr> </tbody> </table>	Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H _t (m)	Head Ratio H _t /H ₀	0	0.00	0.40	1.00	0.5	0.02	0.38	0.95	1	0.04	0.36	0.90	1.5	0.06	0.34	0.85	2	0.08	0.32	0.80	2.5	0.10	0.30	0.75	3	0.11	0.29	0.73	3.5	0.12	0.28	0.70	4	0.12	0.28	0.70	4.5	0.13	0.27	0.68	5	0.13	0.27	0.68	6	0.14	0.26	0.65	7	0.16	0.24	0.60	8	0.17	0.23	0.58	9	0.18	0.22	0.55	10	0.19	0.21	0.53	15	0.25	0.15	0.38	20	0.29	0.11	0.28	25	0.30	0.10	0.25	30	0.33	0.07	0.18	35	0.35	0.05	0.13	40	0.37	0.03	0.08	45	0.38	0.02	0.05	50	0.39	0.01	0.03	55	0.40	0.00	0.00	60	0.40	0.00	0.00	<p>GROUNDWATER CONDITIONS</p> <p>Depth to groundwater prior to test 0.40 m BGL</p> <p>Groundwater level for analysis 0.40 m BGL (Based on groundwater depth prior to test)</p> <p>CALCULATED VALUES</p> <p>Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)</p> <p>Differential head at start of test, H₀ 0.40 m</p> <p>Differential head at end of test, H_f 0.00 m</p> <p>Time elapsed at end of test 60 mins</p> <p>Proportion of test recovery 100 %</p> <p>Coordinates of best fit line to data:</p> <p style="margin-left: 40px;">t₁ = 3.0 mins H₁/H₀ = 0.770</p> <p style="margin-left: 40px;">t₂ = 52.0 mins H₂/H₀ = 0.040</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin-top: 10px;"> <p>Permeability (k) = 4.2E-07 m/sec</p> </div> <p>REMARKS</p>
Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H _t (m)	Head Ratio H _t /H ₀																																																																																																										
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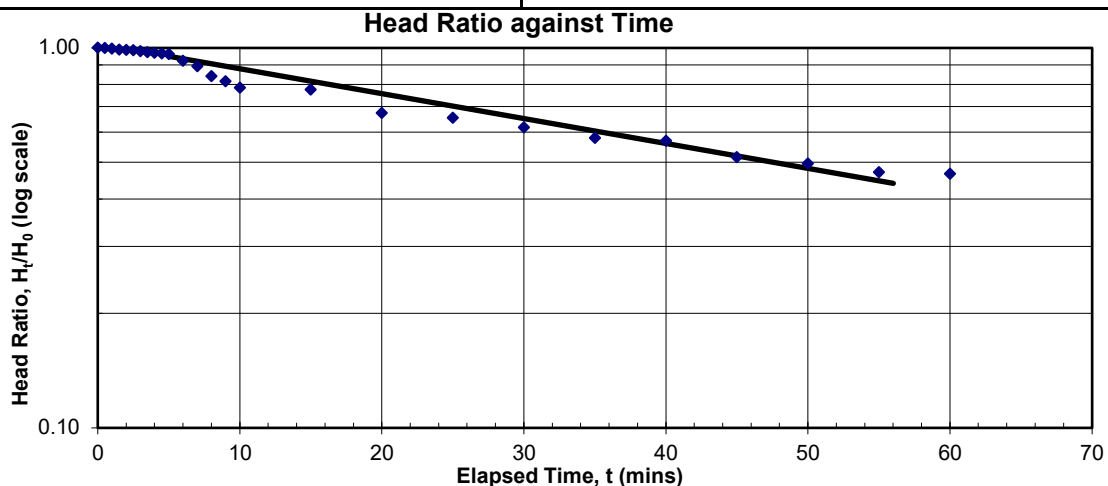
<p>Checked:</p> <p>Approved:</p>	<p>Notes:</p>	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Test</p> <p style="text-align: center; font-size: 1.2em;">ATK_BH14</p>
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Variable Head Permeability Test



<p>LOCATION TYPE Standpipe</p> <p>TEST TYPE Rising Head</p> <p>DETAILS OF TEST ZONE:</p> <p>Top of response zone 2.00 m BGL</p> <p>Base of response zone 8.00 m BGL</p> <p>Diameter of borehole (D) 127 mm</p> <p>Height of tubing above ground level (datum) 0.18 m</p> <p>Diameter of standpipe tubing 50 mm</p>	<p>BOREHOLE No. ATK_BH17</p> <p>TEST NUMBER 1</p> <p>Date of test 16-Feb-23</p> <p>Test operator HP</p> <p>TEST ZONE CONDITIONS</p> <p>Diameter of response zone (D) 127 mm</p> <p>Length of response zone (L) 6000 mm</p> <p>Standpipe piezometer</p> <p>Shape factor (F) after Hvorslev (1951) 9.46 m</p>																																																																																																												
<p>TEST DATA</p> <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Elapsed time, t (minutes)</th> <th>Depth to water below datum (m)</th> <th>Head, H_t (m)</th> <th>Head Ratio H_t/H₀</th> </tr> </thead> <tbody> <tr><td>0</td><td>7.16</td><td>4.68</td><td>1.00</td></tr> <tr><td>0.5</td><td>7.15</td><td>4.67</td><td>1.00</td></tr> <tr><td>1</td><td>7.13</td><td>4.65</td><td>0.99</td></tr> <tr><td>1.5</td><td>7.11</td><td>4.63</td><td>0.99</td></tr> <tr><td>2</td><td>7.10</td><td>4.62</td><td>0.99</td></tr> <tr><td>2.5</td><td>7.09</td><td>4.61</td><td>0.99</td></tr> <tr><td>3</td><td>7.06</td><td>4.58</td><td>0.98</td></tr> <tr><td>3.5</td><td>7.04</td><td>4.56</td><td>0.97</td></tr> <tr><td>4</td><td>7.02</td><td>4.54</td><td>0.97</td></tr> <tr><td>4.5</td><td>7.00</td><td>4.52</td><td>0.97</td></tr> <tr><td>5</td><td>6.98</td><td>4.50</td><td>0.96</td></tr> <tr><td>6</td><td>6.80</td><td>4.32</td><td>0.92</td></tr> <tr><td>7</td><td>6.66</td><td>4.18</td><td>0.89</td></tr> <tr><td>8</td><td>6.42</td><td>3.94</td><td>0.84</td></tr> <tr><td>9</td><td>6.30</td><td>3.82</td><td>0.82</td></tr> <tr><td>10</td><td>6.15</td><td>3.67</td><td>0.78</td></tr> <tr><td>15</td><td>6.11</td><td>3.63</td><td>0.78</td></tr> <tr><td>20</td><td>5.63</td><td>3.15</td><td>0.67</td></tr> <tr><td>25</td><td>5.54</td><td>3.06</td><td>0.65</td></tr> <tr><td>30</td><td>5.37</td><td>2.89</td><td>0.62</td></tr> <tr><td>35</td><td>5.19</td><td>2.71</td><td>0.58</td></tr> <tr><td>40</td><td>5.14</td><td>2.66</td><td>0.57</td></tr> <tr><td>45</td><td>4.89</td><td>2.41</td><td>0.51</td></tr> <tr><td>50</td><td>4.80</td><td>2.32</td><td>0.50</td></tr> <tr><td>55</td><td>4.68</td><td>2.20</td><td>0.47</td></tr> <tr><td>60</td><td>4.66</td><td>2.18</td><td>0.47</td></tr> </tbody> </table>	Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H _t (m)	Head Ratio H _t /H ₀	0	7.16	4.68	1.00	0.5	7.15	4.67	1.00	1	7.13	4.65	0.99	1.5	7.11	4.63	0.99	2	7.10	4.62	0.99	2.5	7.09	4.61	0.99	3	7.06	4.58	0.98	3.5	7.04	4.56	0.97	4	7.02	4.54	0.97	4.5	7.00	4.52	0.97	5	6.98	4.50	0.96	6	6.80	4.32	0.92	7	6.66	4.18	0.89	8	6.42	3.94	0.84	9	6.30	3.82	0.82	10	6.15	3.67	0.78	15	6.11	3.63	0.78	20	5.63	3.15	0.67	25	5.54	3.06	0.65	30	5.37	2.89	0.62	35	5.19	2.71	0.58	40	5.14	2.66	0.57	45	4.89	2.41	0.51	50	4.80	2.32	0.50	55	4.68	2.20	0.47	60	4.66	2.18	0.47	<p>GROUNDWATER CONDITIONS</p> <p>Depth to groundwater prior to test 2.30 m BGL</p> <p>Groundwater level for analysis 2.30 m BGL (Based on groundwater depth prior to test)</p> <p>CALCULATED VALUES</p> <p>Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)</p> <p>Differential head at start of test, H₀ 4.68 m</p> <p>Differential head at end of test, H_t 2.18 m</p> <p>Time elapsed at end of test 60 mins</p> <p>Proportion of test recovery 53 %</p> <p>Coordinates of best fit line to data:</p> <p style="margin-left: 40px;">t₁ = 5.0 mins H₁/H₀ = 0.950</p> <p style="margin-left: 40px;">t₂ = 56.0 mins H₂/H₀ = 0.440</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin-top: 10px;"> <p>Permeability (k) = 5.2E-08 m/sec</p> </div> <p>REMARKS</p> <p>Falling ghead test unable to be undertaken due to water flowing out faster than water being added. Response zone not fully saturated. Testing has not achieved 75% recovery from initial datum. Data presented in draft format.</p>
Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H _t (m)	Head Ratio H _t /H ₀																																																																																																										
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<p>Checked:</p> <p>Approved:</p>	<p>Notes:</p>	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Test ATK_BH17</p>
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APPENDIX D
INSTRUMENTATION AND MONITORING

Monitoring Installations Summary	Table D1
Vibrating Wire Piezometer Installations Summary	Table D2
Inclinometer Installation Summary	Table D3
Groundwater Monitoring Summary	Table D4
Groundwater Datalogger Results	Figure D5 to D7

Monitoring Installations (Standpipes) Summary



Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
ATK_BH05 (50)	SP	07/11/2022	50	4.60	2.00 to 4.60	Gas tap	Raised Cover	
ATK_BH09 (50)	SP	17/11/2022	50	7.50	1.00 to 7.50	Gas tap	Flush Cover	
ATK_BH10 (50)	SP	08/11/2022	50	8.20	1.50 to 8.20	Gas tap	Flush Cover	
ATK_BH14 (50)	SP	26/10/2022	50	2.80	1.00 to 2.80	Gas tap	Raised Cover	
ATK_BH17 (50)	SP	14/12/2022	50	7.80	2.00 to 7.50	Gas tap	Raised Cover	

Notes: Type: SP - Standpipe



Project Lyneham Banks
Project No. H2060-22
Carried out for Wiltshire Council

Table

D1

Monitoring Installations (Vibrating Wire Piezometer) Summary



Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Instrument Base, mbgl	Headworks	Remarks
ATK_BH01 (1)	EPIE	14/12/2022	6.00	Raised Cover	
ATK_BH01 (2)	EPIE	14/12/2022	3.00	Raised Cover	
ATK_BH01 (3)	EPIE	14/12/2022	1.00	Raised Cover	
ATK_BH03 (1)	EPIE	26/10/2022	19.00	Raised Cover	
ATK_BH03 (2)	EPIE	26/10/2022	9.00	Raised Cover	
ATK_BH03 (3)	EPIE	26/10/2022	2.00	Raised Cover	
ATK_BH12 (1)	EPIE	21/11/2022	8.00	Raised Cover	
ATK_BH12 (2)	EPIE	21/11/2022	6.00	Raised Cover	
ATK_BH12 (3)	EPIE	21/11/2022	1.00	Raised Cover	
ATK_BH13 (1)	EPIE	04/11/2022	10.00	Raised cover	
ATK_BH13 (2)	EPIE	04/11/2022	3.00	Raised cover	
ATK_BH13 (3)	EPIE	04/11/2022	1.00	Raised cover	
ATKRD_BH02 (1)	EPIE	13/12/2023	10.00	Raised Cover	
ATKRD_BH02 (2)	EPIE	13/12/2023	7.50	Raised Cover	
ATKRD_BH02 (3)	EPIE	13/12/2023	3.00	Raised Cover	
ATKRD_BH04 (1)	EPIE	14/12/2022	10.00	Flush cover	
ATKRD_BH04 (2)	EPIE	14/12/2022	6.00	Flush cover	
ATKRD_BH04 (3)	EPIE	14/12/2022	3.50	Flush cover	
ATKRD_BH06 (1)	EPIE	15/12/2023	8.00	Raised Cover	
ATKRD_BH06 (2)	EPIE	15/12/2023	4.00	Raised Cover	
ATKRD_BH06 (3)	EPIE	15/12/2023	1.70	Raised Cover	

Notes: Type: EPIE - Vibrating Wire Piezometer



Project Lyneham Banks
 Project No. H2060-22
 Carried out for Wiltshire Council

Table

D2

Monitoring Installations (Vibrating Wire Piezometer) Summary



Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Instrument Base, mbgl	Headworks	Remarks
ATKRD_BH08 (1)	EPIE	14/12/2022	12.00	Flush Cover	
ATKRD_BH08 (2)	EPIE	14/12/2022	7.50	Flush Cover	
ATKRD_BH08 (3)	EPIE	14/12/2022	4.00	Flush Cover	
ATKRD_BH10 (1)	EPIE	14/12/2022	6.00	Flush Cover	
ATKRD_BH10 (2)	EPIE	14/12/2022	3.00	Flush Cover	
ATKRD_BH10 (3)	EPIE	14/12/2022	1.50	Flush Cover	

Notes: Type: EPIE - Vibrating Wire Piezometer



Project Lyneham Banks
Project No. H2060-22
Carried out for Wiltshire Council

Table

D2

Inclination Installation Details



SOCOTEC

Hole No	Instrument ID	Installation Type	Date of Installation	Orientation of keyway 'A0' (degrees)	Headworks	Remarks
ATK_BH02A		ICE	18/11/2022		Raised Cover	
ATK_BH04		ICE	23/11/2022		Raised Cover	
ATK_BH07		ICE	02/12/2022		Raised Cover	
ATK_BH11		ICE	02/11/2022		Flush Cover	
ATK_BH12A		ICE	08/11/2022		Raised Cover	
ATK_BH15		ICE	30/11/2022		Raised Cover	
ATKRD_BH01		ICE	23/11/2022		Flush Cover	
ATKRD_BH03		ICE	06/01/2023		Flush Cover	
ATKRD_BH07		ICE	14/12/2022		Flush Cover	
ATKRD_BH11		ICE	19/01/2023		Flush Cover	

Notes: Type: ICE/ICM - Inclinator



Project Lyneham Banks
 Project No. H2060-22
 Carried out for Wiltshire Council

Table

D3

Groundwater Monitoring



Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Result (m)	Comments
ATK_BH05 (50)	SP	4.60	18/01/2023 00:00:00	2.51	
ATK_BH05 (50)	SP	4.60	16/02/2023 10:30:00	3.76	
ATK_BH05 (50)	SP	4.60	24/02/2023 09:40:00	4.36	Pre diver
ATK_BH05 (50)	SP	4.60	24/02/2023 09:42:00	4.36	Diver out
ATK_BH05 (50)	SP	4.60	24/02/2023 10:12:00	4.36	Diver in
ATK_BH09 (50)	SP	7.50	18/01/2023 00:00:00	3.24	
ATK_BH09 (50)	SP	7.50	16/02/2023 08:30:00	4.36	
ATK_BH09 (50)	SP	7.50	24/02/2023 10:17:00	4.56	Pre diver
ATK_BH09 (50)	SP	7.50	24/02/2023 10:19:00	4.58	Diver out
ATK_BH09 (50)	SP	7.50	24/02/2023 10:25:00	4.57	Diver in
ATK_BH10 (50)	SP	8.20	18/01/2023 00:00:00	7.67	
ATK_BH10 (50)	SP	8.20	16/02/2023 13:00:00	4.60	
ATK_BH10 (50)	SP	8.20	24/02/2023 09:21:00	4.60	Pre diver
ATK_BH10 (50)	SP	8.20	24/02/2023 09:23:00	4.61	Diver out
ATK_BH10 (50)	SP	8.20	24/02/2023 09:32:00	4.61	Diver in
ATK_BH14 (50)	SP	2.80	18/01/2023 00:00:00	0.16	
ATK_BH14 (50)	SP	2.80	16/02/2023 14:00:00	0.32	
ATK_BH14 (50)	SP	2.80	24/02/2023 10:33:00	0.23	Pre diver
ATK_BH14 (50)	SP	2.80	24/02/2023 10:34:00	0.27	Diver out
ATK_BH14 (50)	SP	2.80	24/02/2023 10:55:00	0.22	Diver in
ATK_BH17 (50)	SP	7.80	18/01/2023 00:00:00	5.01	
ATK_BH17 (50)	SP	7.80	16/02/2023 11:00:00	2.30	
ATK_BH17 (50)	SP	7.80	24/02/2023 08:53:00	2.35	Pre diver
ATK_BH17 (50)	SP	7.80	24/02/2023 08:55:00	2.37	Diver out
ATK_BH17 (50)	SP	7.80	24/02/2023 09:08:00	2.36	Diver in

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well

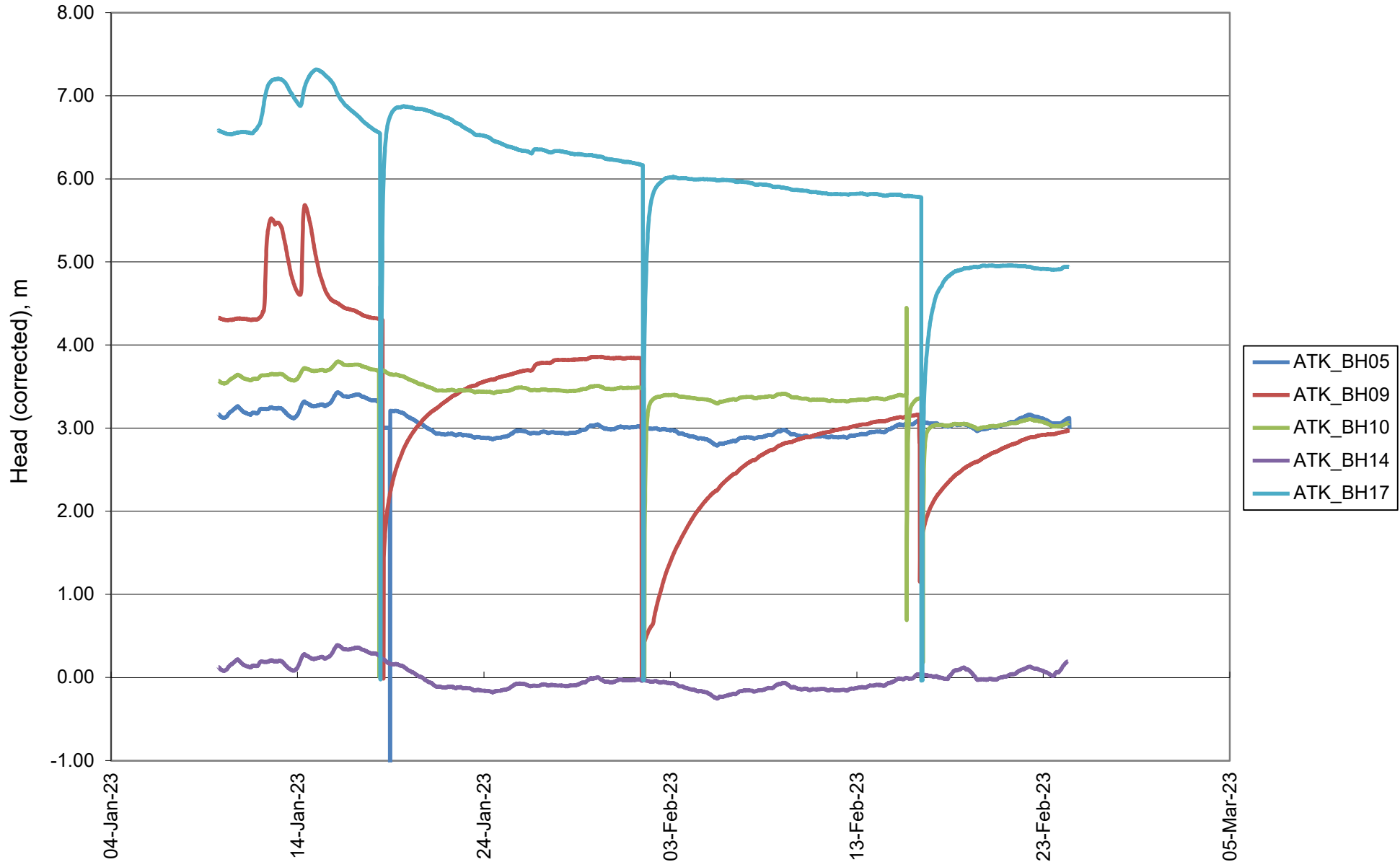


Project Lyneham Banks
Project No. H2060-22
Carried out for Wiltshire Council

Table

D4

Baro-compensated Head



Notes:

Project Lyneham Banks Landslip
 Project No. H2060-22
 Carried out for Atkins

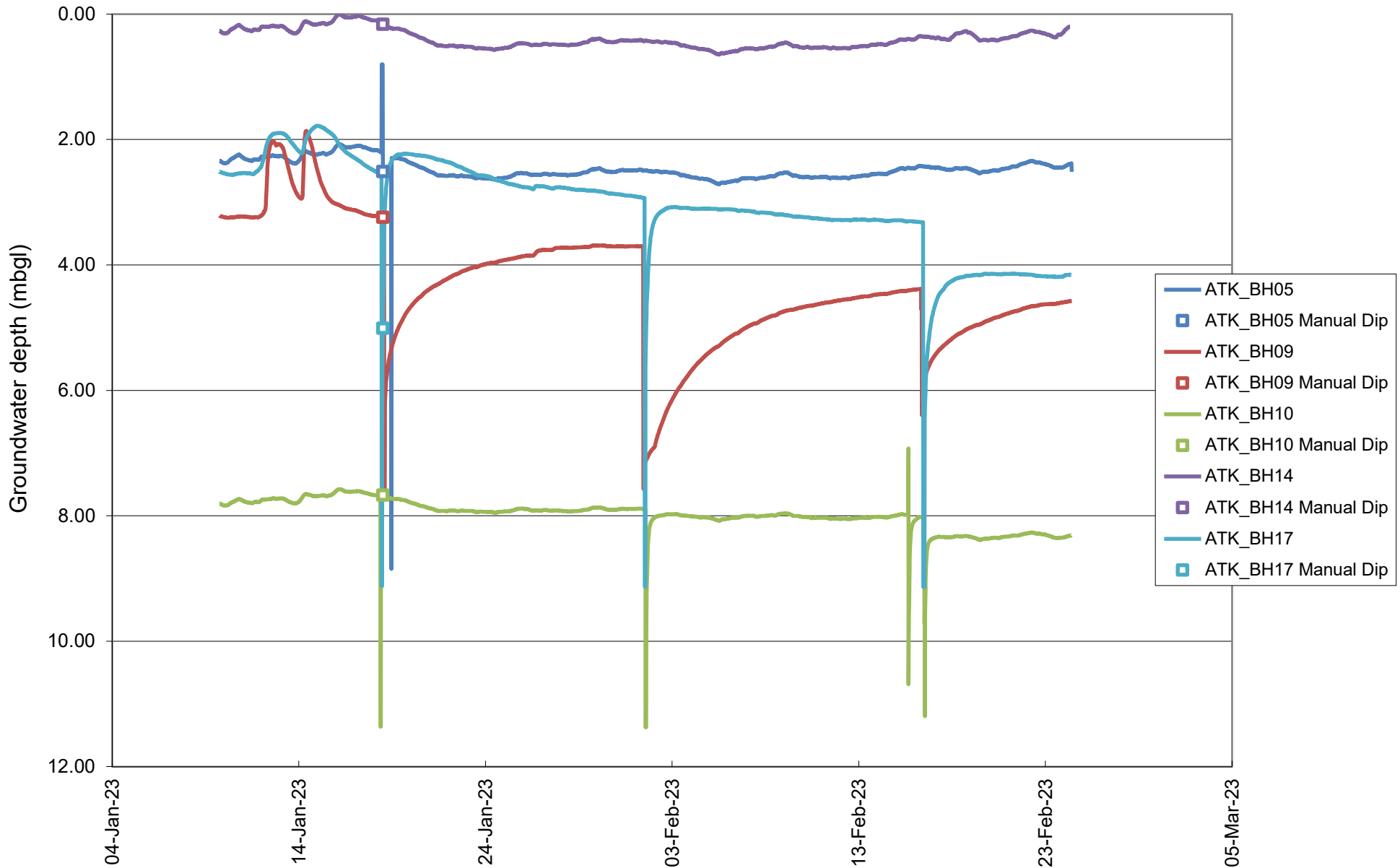
Figure

D5

Groundwater Monitoring Results



Groundwater Depth



Notes:

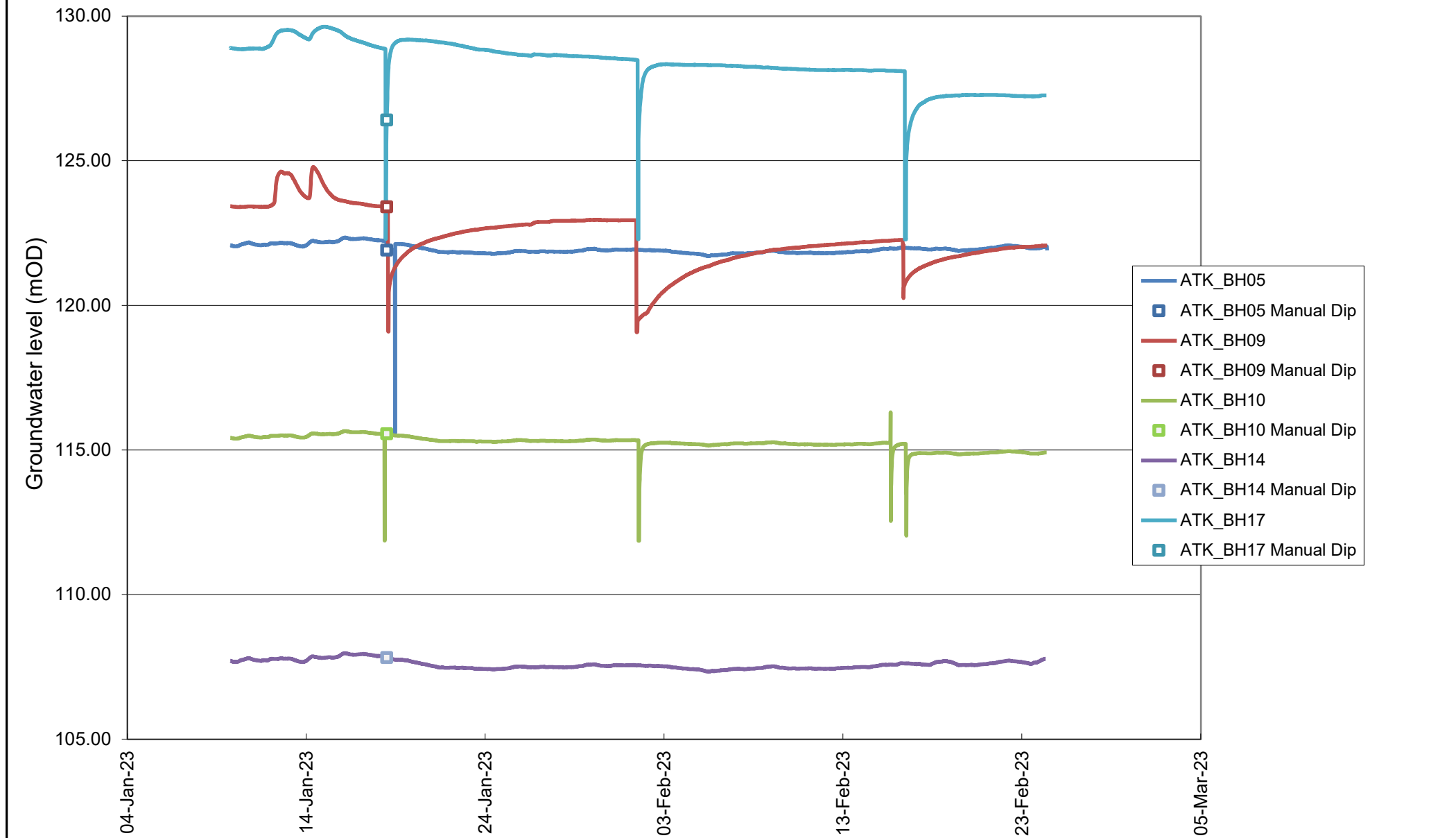
Project Lyneham Banks Landslip
 Project No. H2060-22
 Carried out for Atkins

Figure **D6**

Groundwater Monitoring Results



Groundwater Elevation



- ATK_BH05
- ATK_BH05 Manual Dip
- ATK_BH09
- ATK_BH09 Manual Dip
- ATK_BH10
- ATK_BH10 Manual Dip
- ATK_BH14
- ATK_BH14 Manual Dip
- ATK_BH17
- ATK_BH17 Manual Dip

Notes:

Project Lyneham Banks Landfill
 Project No. H2060-22
 Carried out for Atkins

Figure **D7**

APPENDIX E

GEOTECHNICAL LABORATORY TEST RESULTS

Geotechnical Site and Testing Laboratories (GSTL)	62787, 62917, 63583, 63955 and 64154
Direct Ring Shear Tests – Project No	GEO / 37073
Certificate of Analysis – Chemical Tests (pH and Sulphate Contents)	22-44672, 22-45009, 22-45224, 22-48947, 23-00589, 23-01312, 23-02351



2788

Laboratory Report



Contract Number: 62787

Client Ref: **H2060-22**

Client PO:

Date Received: **18-11-2022**

Date Completed: **09-12-2022**

Report Date: **09-12-2022**

Client: **SOCOTEC**

Unit 15

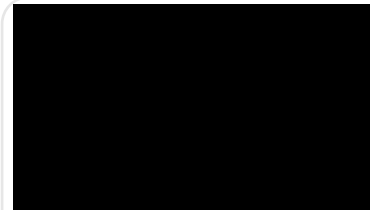
Crosby Yard Industrial Estate

Wildmill

Bridgend

CF31 1JZ

This report has been checked and approved by:



Director

Contract Title: **Lyneham Banks**

For the attention of:

Test Description	Qty
Samples Received - @ Non Accredited Test	38
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	22
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	22
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	22
PSD: Sedimentation by pipette carried out with Wet Sieve (Wet Sieve must also be selected) BS 1377:1990 - Part 2 : 9.4 - * UKAS	22
Disposal of samples for job	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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 test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (Human Resources/ Health and Safety Coordinator)

GEO Site & Testing Services Ltd

Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

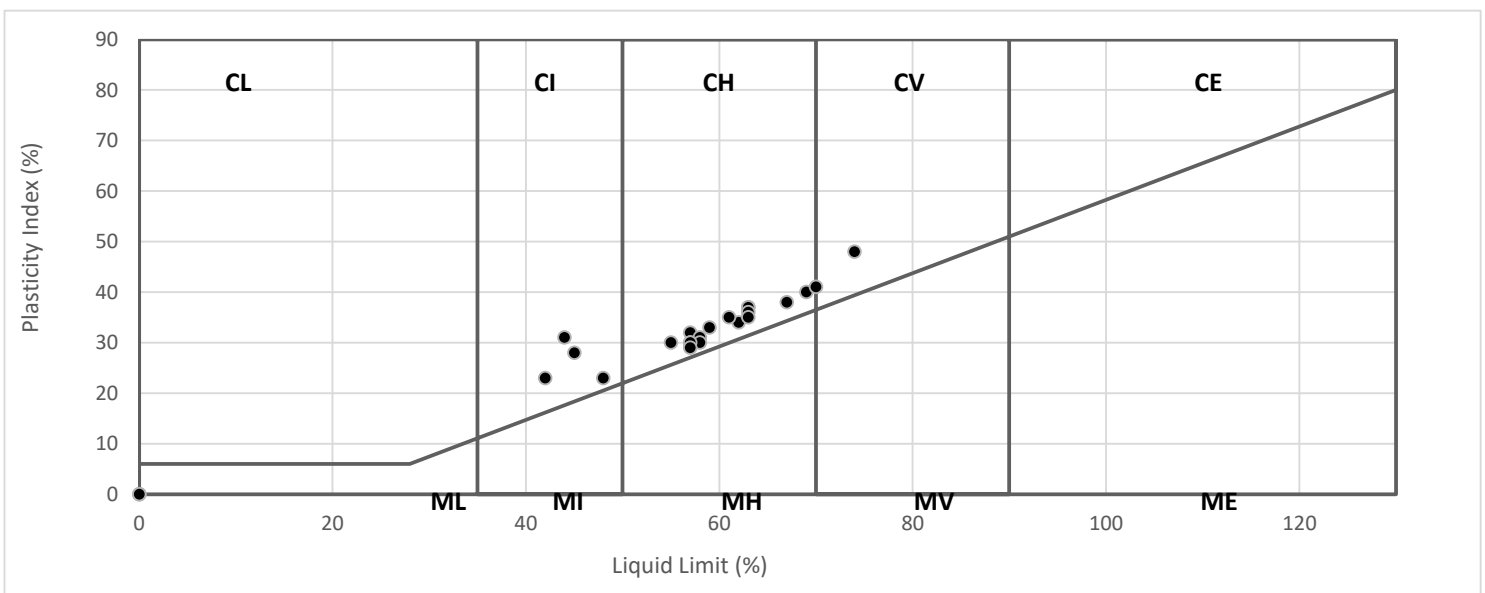
**NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)**

Contract Number	62787
Project Name	Lyneham Banks
Date Tested	05/12/2022

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
ATK_TP01	7	D	1.50	-		22	42	19	23	64	CI Intermediate Plasticity
ATK_TP01	11	D	3.00	-		28	57	25	32	100	CH High Plasticity
ATK_TP02	9	D	2.00	-		36	62	28	34	90	CH High Plasticity
ATK_TP02	14	D	3.50	-		30	58	27	31	100	CH High Plasticity
ATK_TP03	10	D	2.00	-		28	63	26	37	100	CH High Plasticity
ATK_TP03	14	D	3.50	-		28	59	26	33	93	CH High Plasticity
ATK_TP04	8	D	1.50	-		34	57	27	30	90	CH High Plasticity
ATK_TP04	13	D	3.00	-		34	63	26	37	90	CH High Plasticity
ATK_TP04	16	D	4.00	-		32	58	28	30	94	CH High Plasticity
ATK_TP05	12	D	2.50	-		15	44	13	31	82	CI Intermediate Plasticity
ATK_TP05	15	D	3.50	-		36	63	27	36	90	CH High Plasticity
ATK_TP06	12	D	3.00	-		34	61	26	35	95	CH High Plasticity
ATK_TP07A	105	D	1.50	-		34	57	27	30	92	CH High Plasticity
ATK_TP07A	109	D	3.50	-		38	74	26	48	100	CV Very High Plasticity
ATK_TP10	104	D	1.00	-		39	69	29	40	92	CH High Plasticity
ATK_TP10	108	D	3.00	-		21	45	17	28	99	CI Intermediate Plasticity
ATK_TP11	103	D	1.00	-		41	70	29	41	90	CH/V High/HighPlasticity
ATK_TP11	109	D	3.80	-		41	67	29	38	95	CH High Plasticity
ATK_TP13	8	D	1.50	-		28	55	25	30	90	CH High Plasticity
ATK_TP13	14	D	3.50	-		30	57	28	29	90	CH High Plasticity
ATK_TP17	8	D	1.50	-		40	63	28	35	87	CH High Plasticity
ATK_TP17	13	D	3.00	-		27	48	25	23	100	CI Intermediate Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

**PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:2015+A1:2020**



Operator
██████████

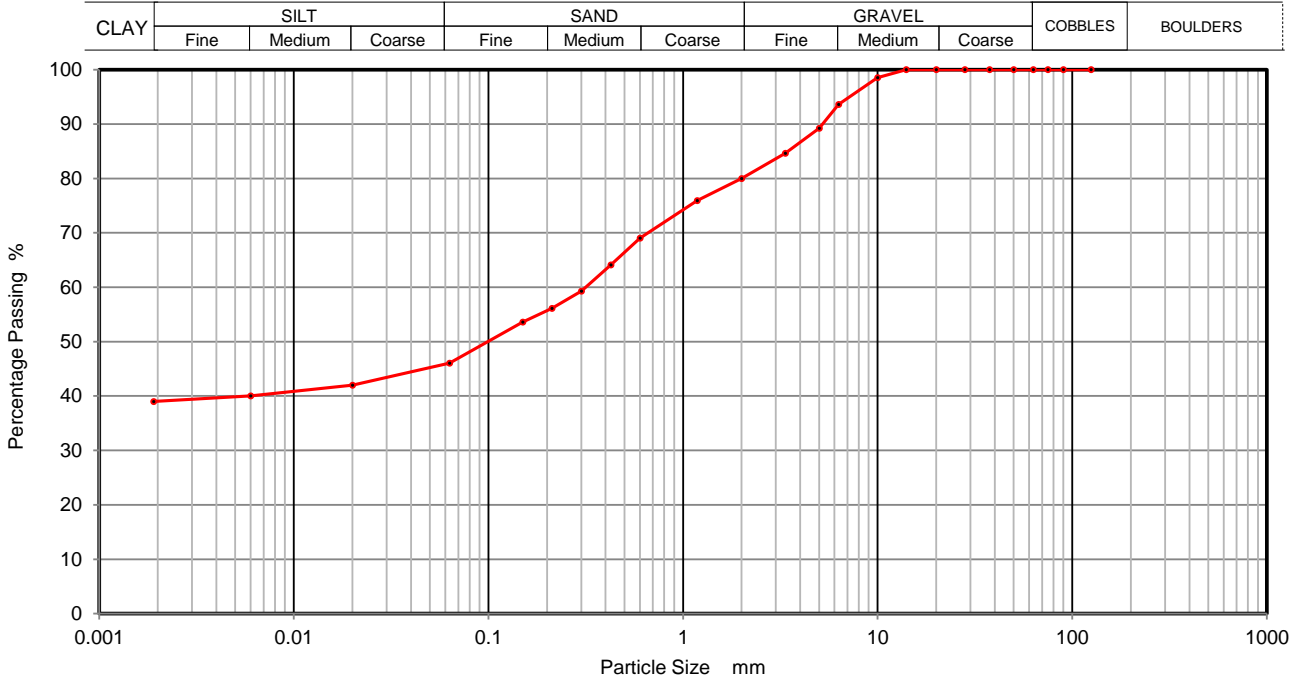




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP01
Sample No.	7
Depth Top	1.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	42
90	100	0.0060	40
75	100	0.0020	39
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	94		
5	89		
3.35	85		
2	80		
1.18	76		
0.6	69		
0.425	64		
0.3	59		
0.212	56		
0.15	54		
0.063	46		

Sample Proportions	% dry mass
Cobbles	0
Gravel	20
Sand	34
Silt	7
Clay	39

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

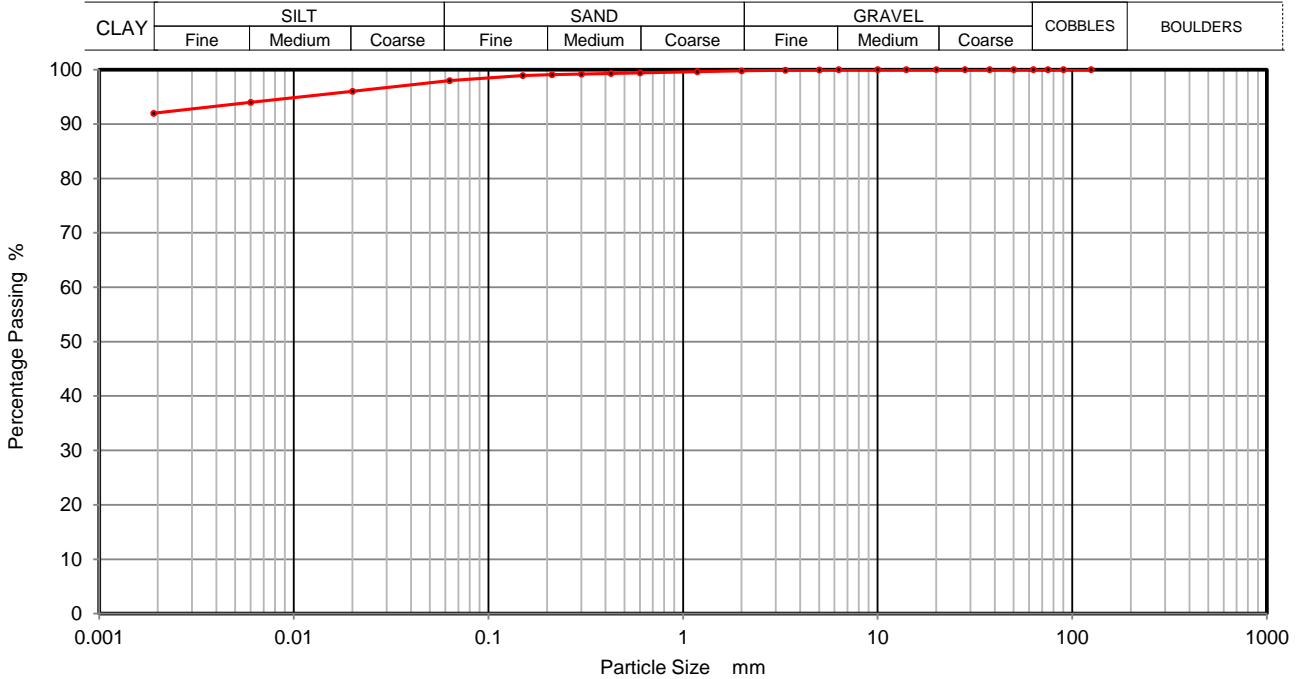




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	62787
Borehole/Pit No.	ATK_TP01
Sample No.	12
Depth Top	3.00
Depth Base	3.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Grey slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	96
90	100	0.0060	94
75	100	0.0020	92
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Silt	6
Clay	92

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]

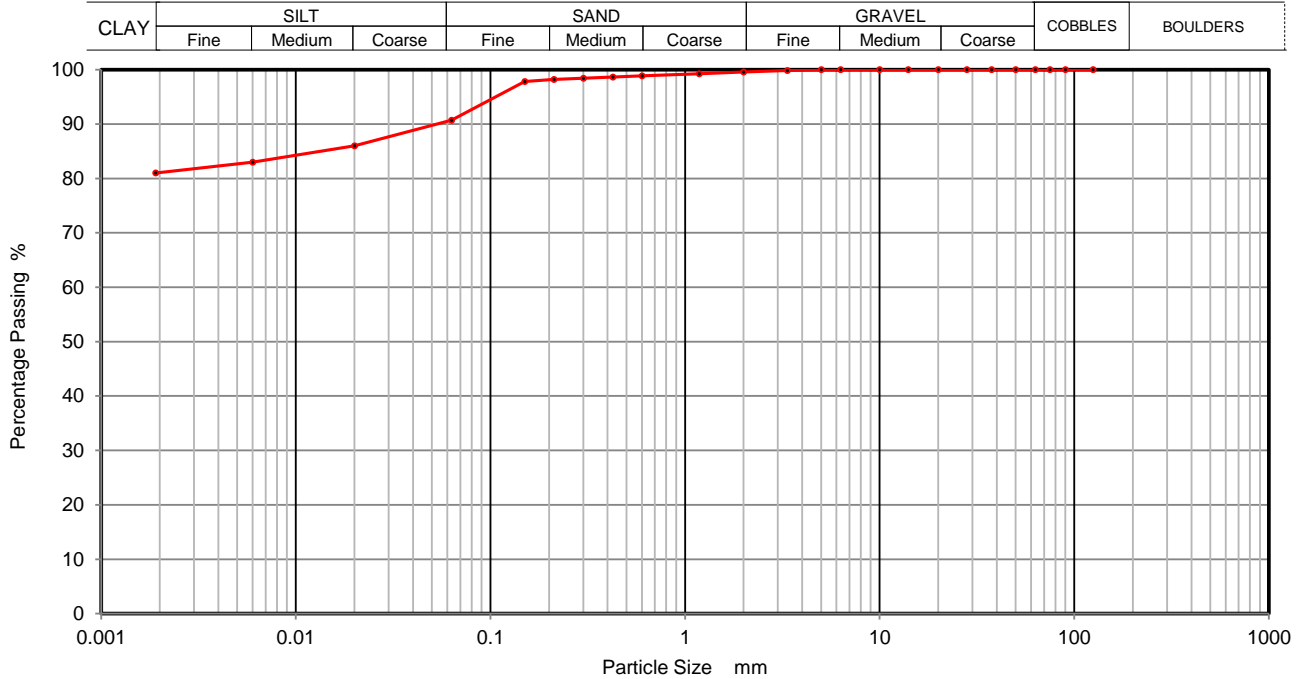




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	62787
Borehole/Pit No.	ATK_TP02
Sample No.	10
Depth Top	2.00
Depth Base	2.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	86
90	100	0.0060	83
75	100	0.0020	81
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	99		
0.3	98		
0.212	98		
0.15	98		
0.063	91		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	9
Silt	10
Clay	81

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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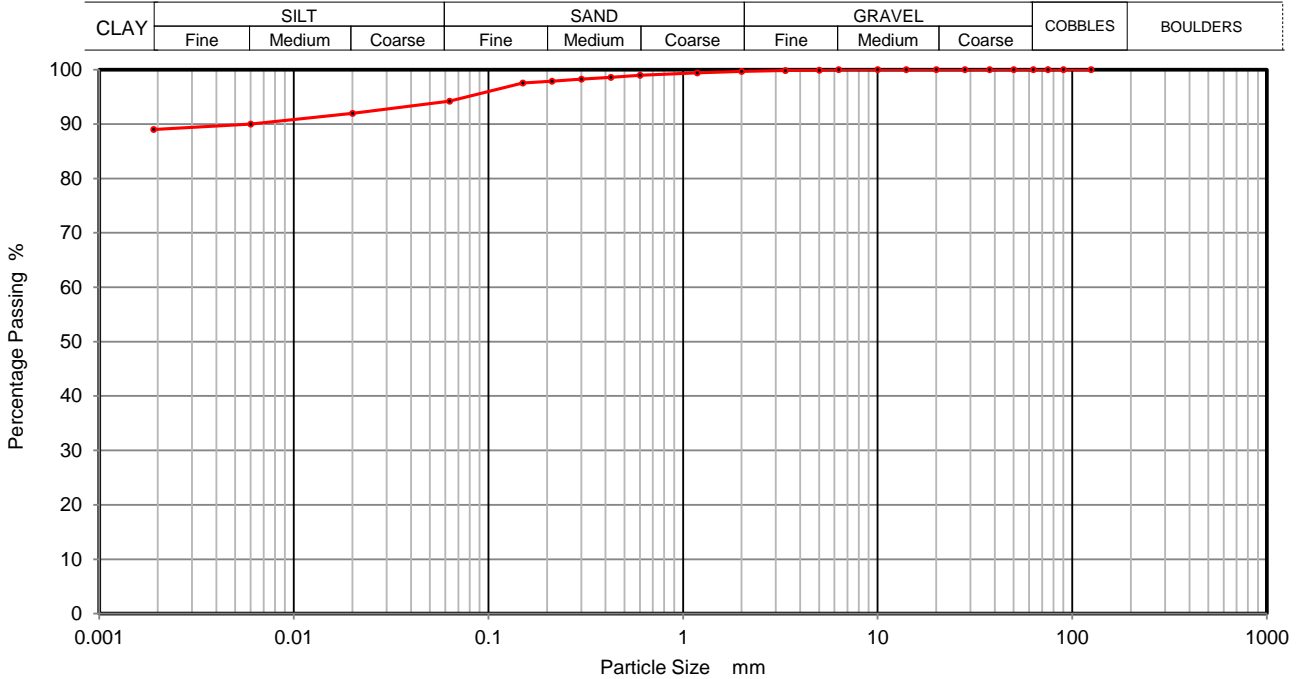




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP02
Sample No.	15
Depth Top	3.50
Depth Base	4.00
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Grey slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	92
90	100	0.0060	90
75	100	0.0020	89
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	99		
0.3	98		
0.212	98		
0.15	98		
0.063	94		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	6
Silt	5
Clay	89

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator

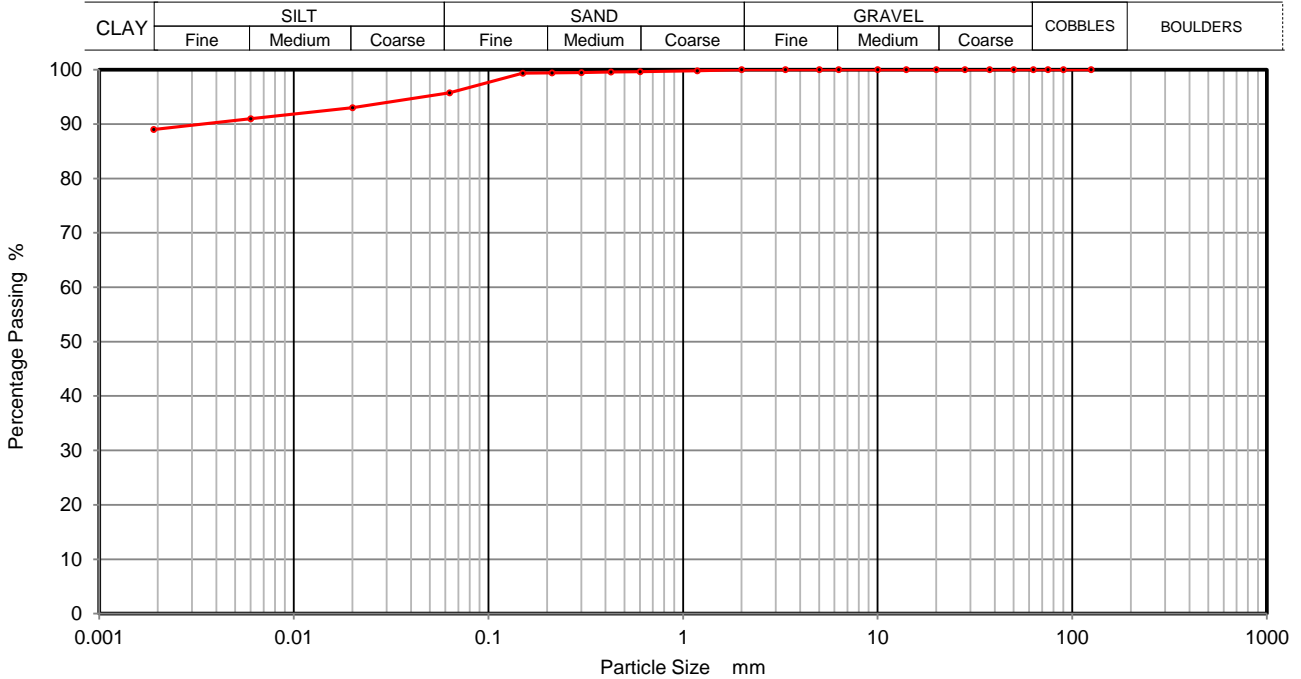




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	62787
Borehole/Pit No.	ATK_TP03
Sample No.	8
Depth Top	1.80
Depth Base	2.00
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	93
90	100	0.0060	91
75	100	0.0020	89
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	99		
0.15	99		
0.063	96		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	4
Silt	7
Clay	89

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

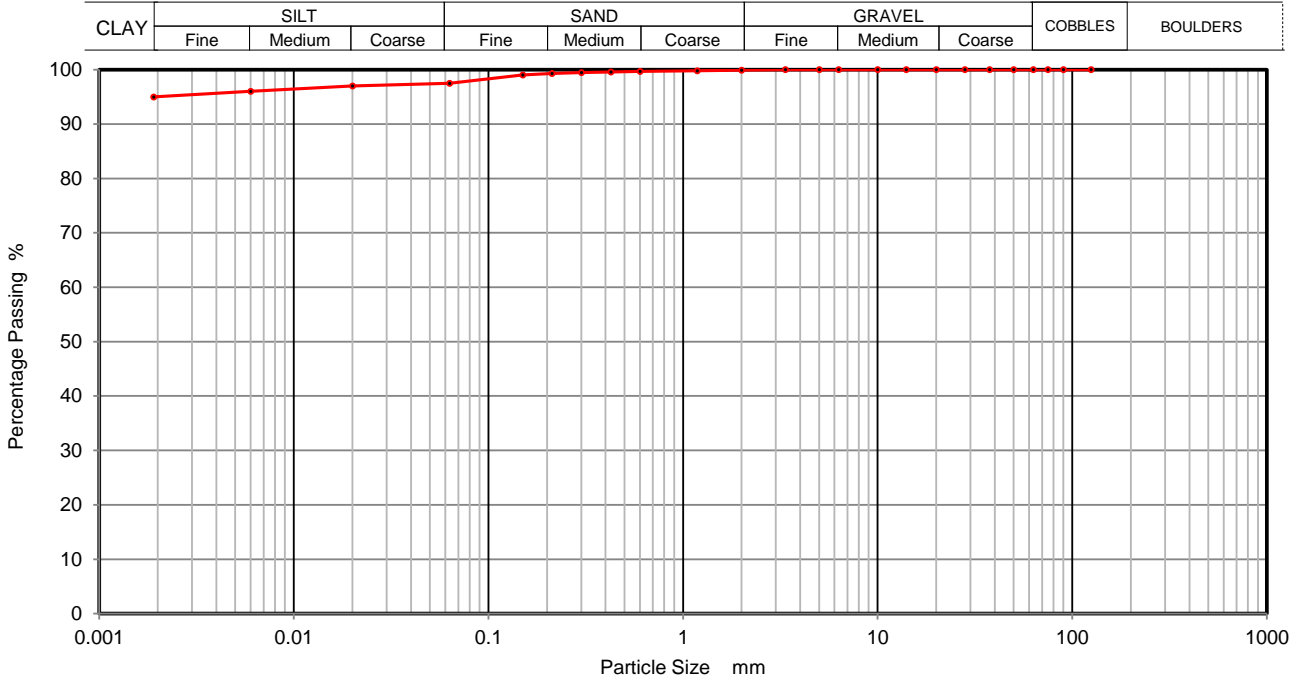




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP03
Sample No.	13
Depth Top	3.00
Depth Base	3.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	97
90	100	0.0060	96
75	100	0.0020	95
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	99		
0.15	99		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Silt	3
Clay	95

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

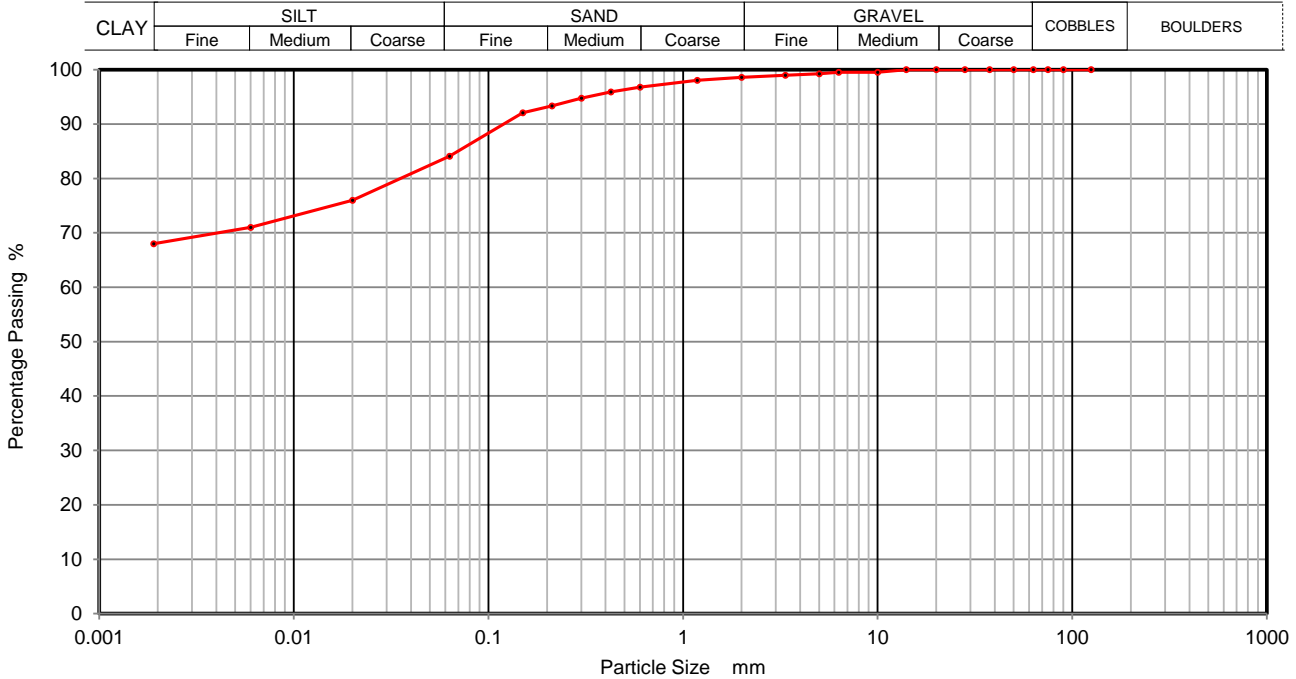




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	62787
Borehole/Pit No.	ATK_TP04
Sample No.	10
Depth Top	1.70
Depth Base	2.00
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown slightly gravelly fine to coarse sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	76
90	100	0.0060	71
75	100	0.0020	68
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	99		
2	99		
1.18	98		
0.6	97		
0.425	96		
0.3	95		
0.212	93		
0.15	92		
0.063	84		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	15
Silt	16
Clay	68

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

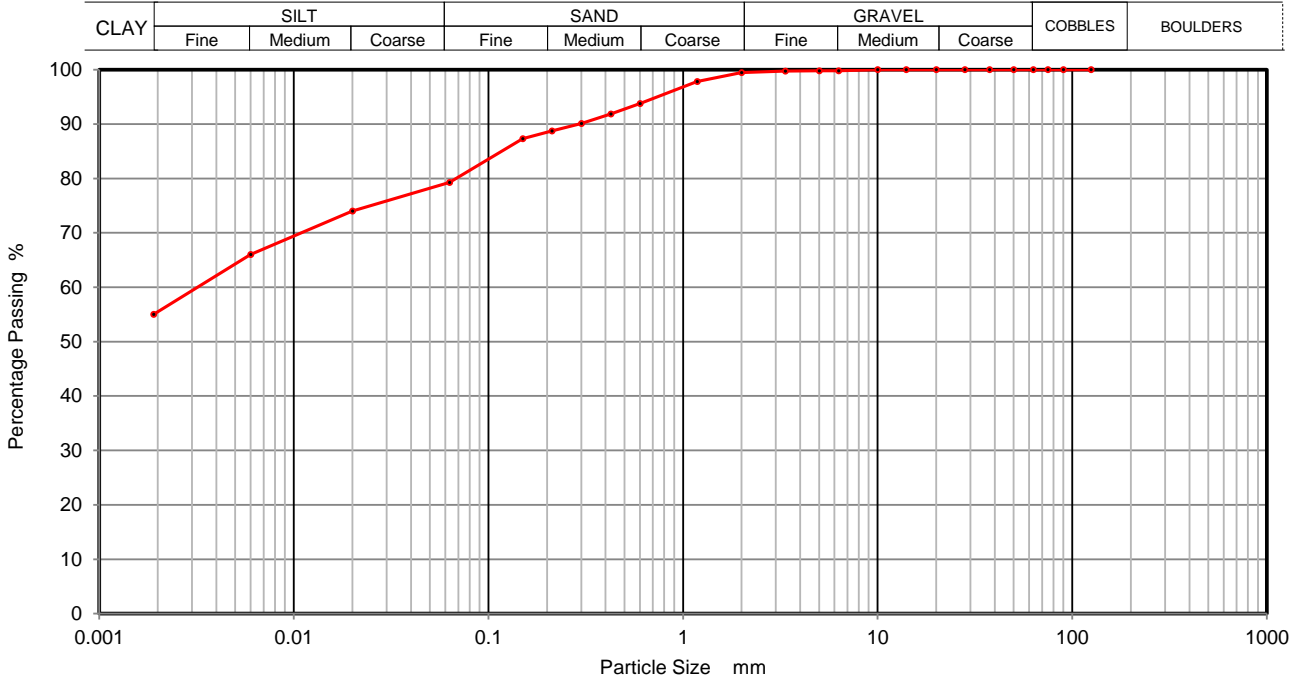




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP04
Sample No.	14
Depth Top	3.00
Depth Base	3.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	74
90	100	0.0060	66
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	98		
0.6	94		
0.425	92		
0.3	90		
0.212	89		
0.15	87		
0.063	79		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	20
Silt	24
Clay	55

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

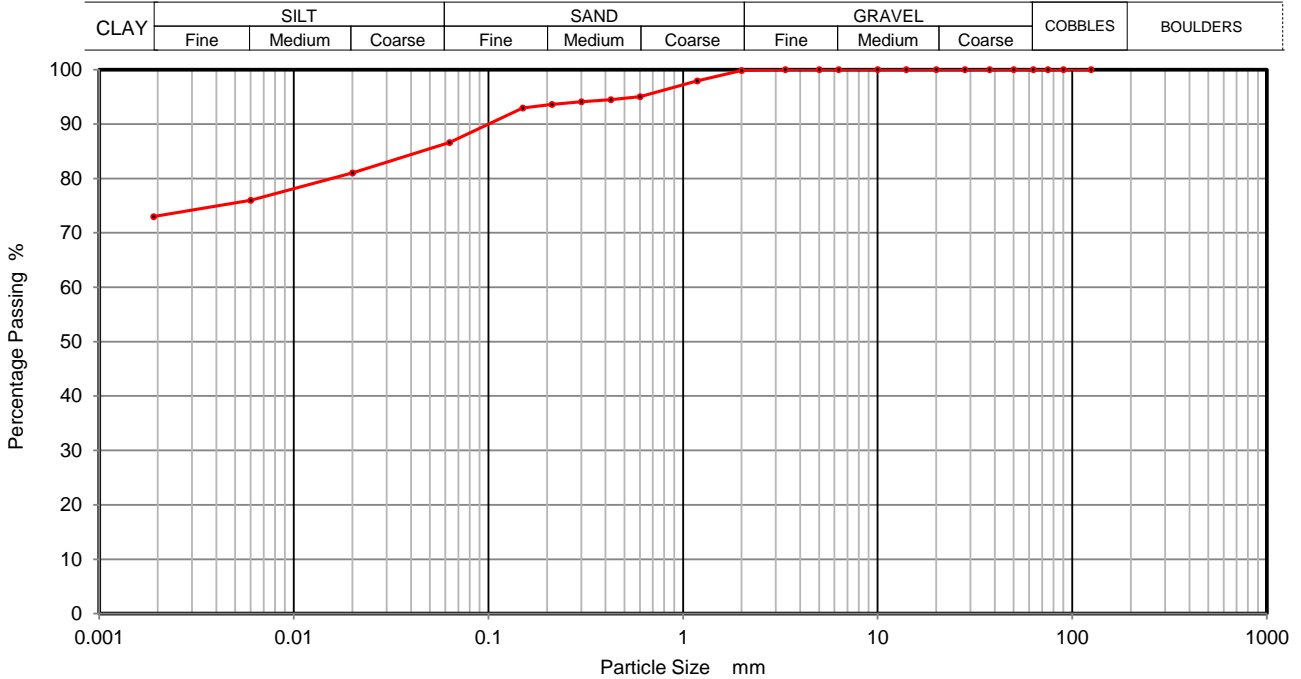




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP04
Sample No.	16
Depth Top	4.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	81
90	100	0.0060	76
75	100	0.0020	73
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	98		
0.6	95		
0.425	94		
0.3	94		
0.212	94		
0.15	93		
0.063	87		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	13
Silt	14
Clay	73

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator

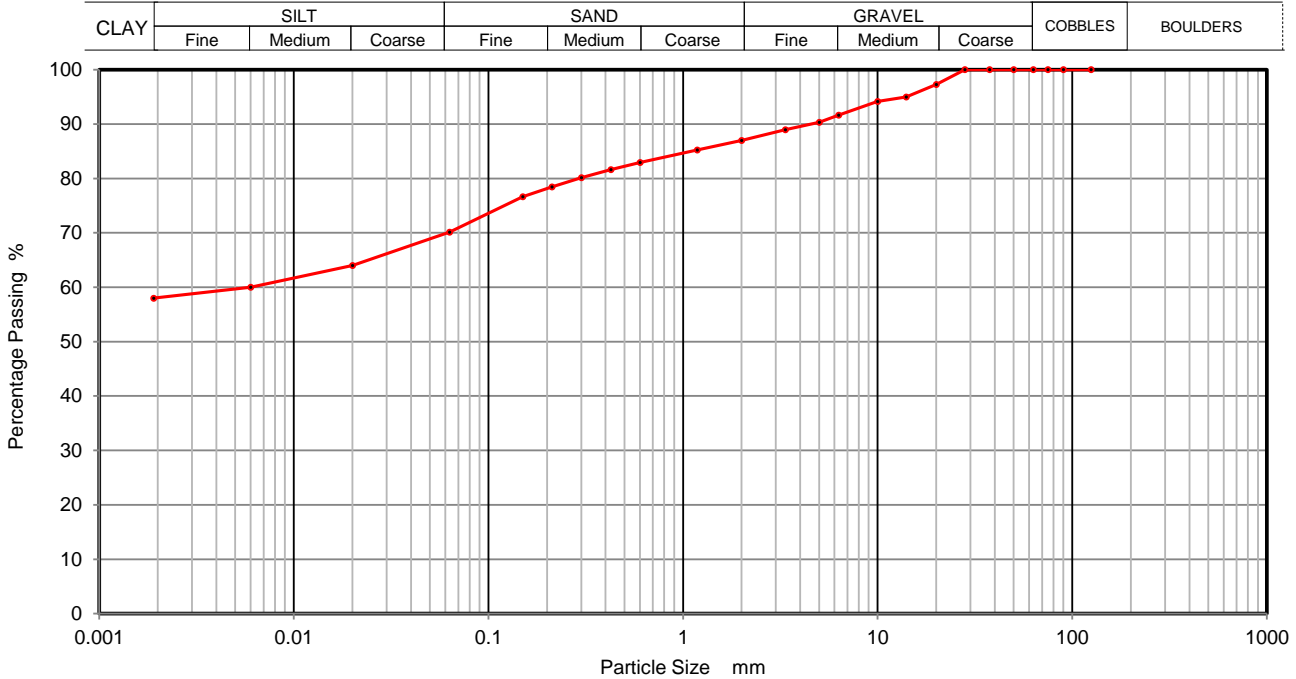




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP05
Sample No.	12
Depth Top	2.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	64
90	100	0.0060	60
75	100	0.0020	58
63	100		
50	100		
37.5	100		
28	100		
20	97		
14	95		
10	94		
6.3	92		
5	90		
3.35	89		
2	87		
1.18	85		
0.6	83		
0.425	82		
0.3	80		
0.212	78		
0.15	77		
0.063	70		

Sample Proportions	% dry mass
Cobbles	0
Gravel	13
Sand	17
Silt	12
Clay	58

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]

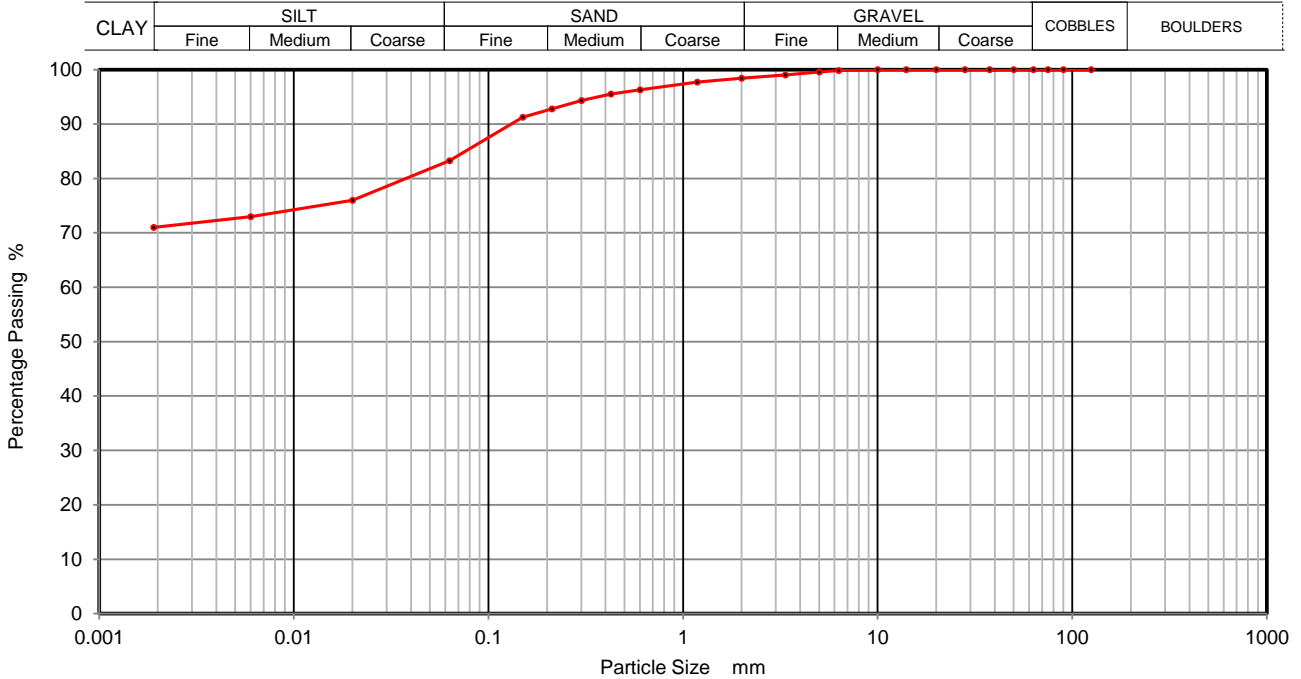




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP05
Sample No.	16
Depth Top	3.80
Depth Base	4.00
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown/ black slightly gravelly fine to coarse sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	76
90	100	0.0060	73
75	100	0.0020	71
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	98		
1.18	98		
0.6	96		
0.425	96		
0.3	94		
0.212	93		
0.15	91		
0.063	83		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	15
Silt	12
Clay	71

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

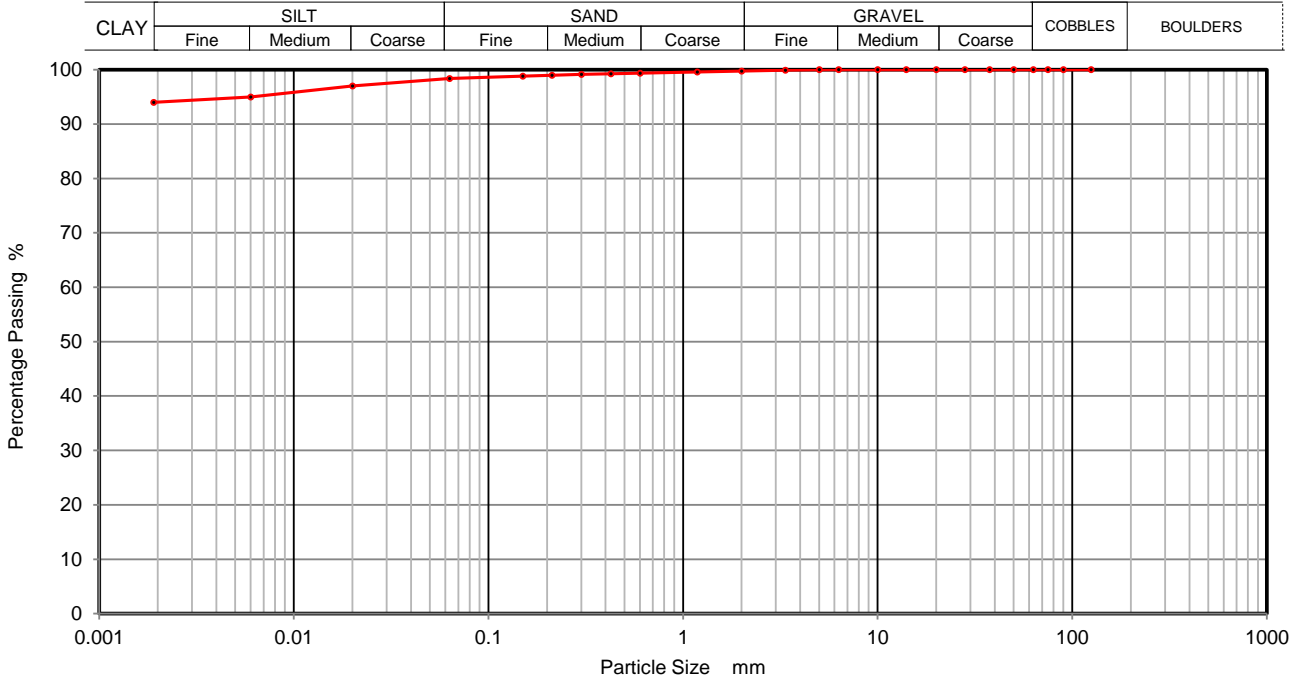




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP06
Sample No.	13
Depth Top	3.00
Depth Base	3.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Grey slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	97
90	100	0.0060	95
75	100	0.0020	94
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Silt	4
Clay	94

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator

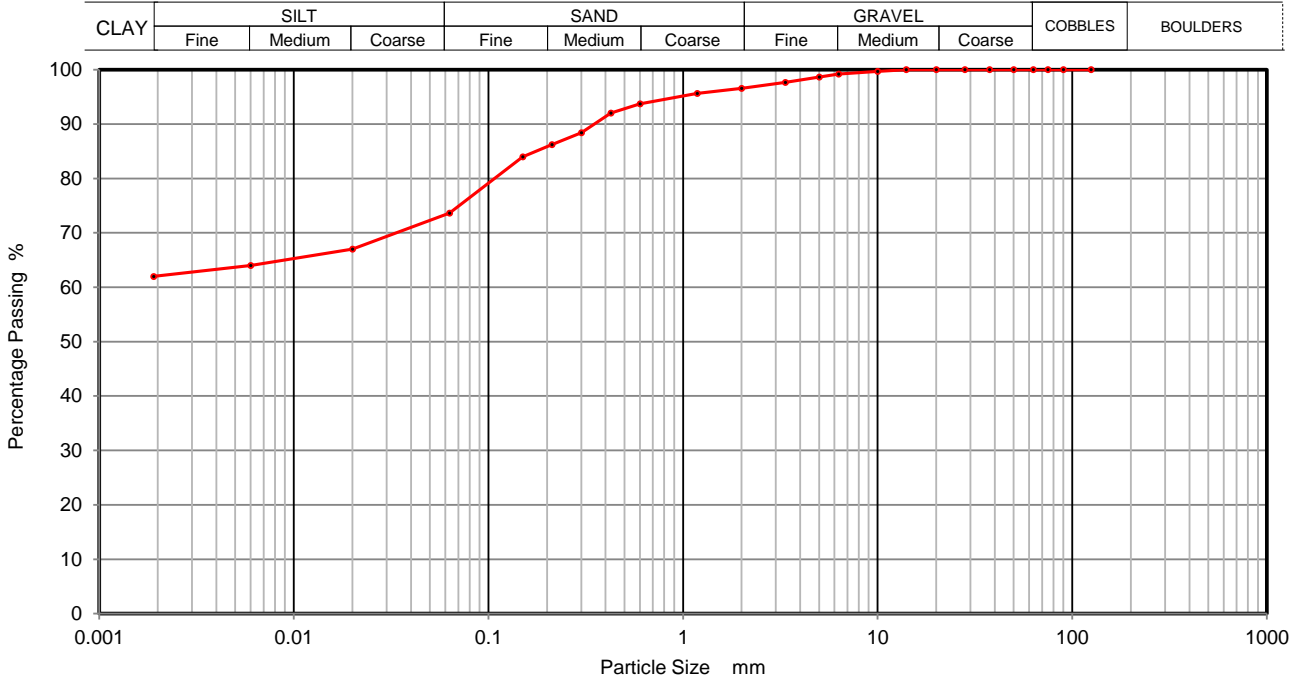




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	62787
Borehole/Pit No.	ATK_TP07A
Sample No.	105
Depth Top	1.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	67
90	100	0.0060	64
75	100	0.0020	62
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	98		
2	97		
1.18	96		
0.6	94		
0.425	92		
0.3	88		
0.212	86		
0.15	84		
0.063	74		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	23
Silt	12
Clay	62

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

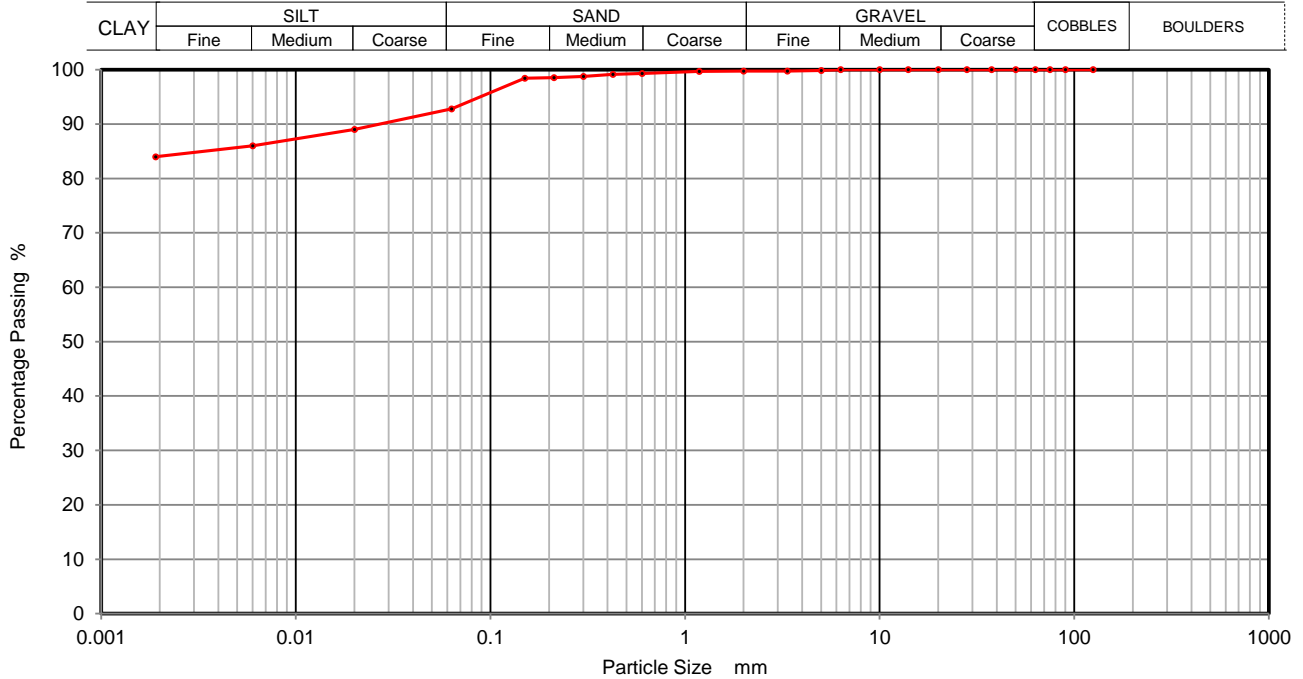




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP07A
Sample No.	4
Depth Top	3.30
Depth Base	3.80
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	89
90	100	0.0060	86
75	100	0.0020	84
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	98		
0.063	93		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	7
Silt	9
Clay	84

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]

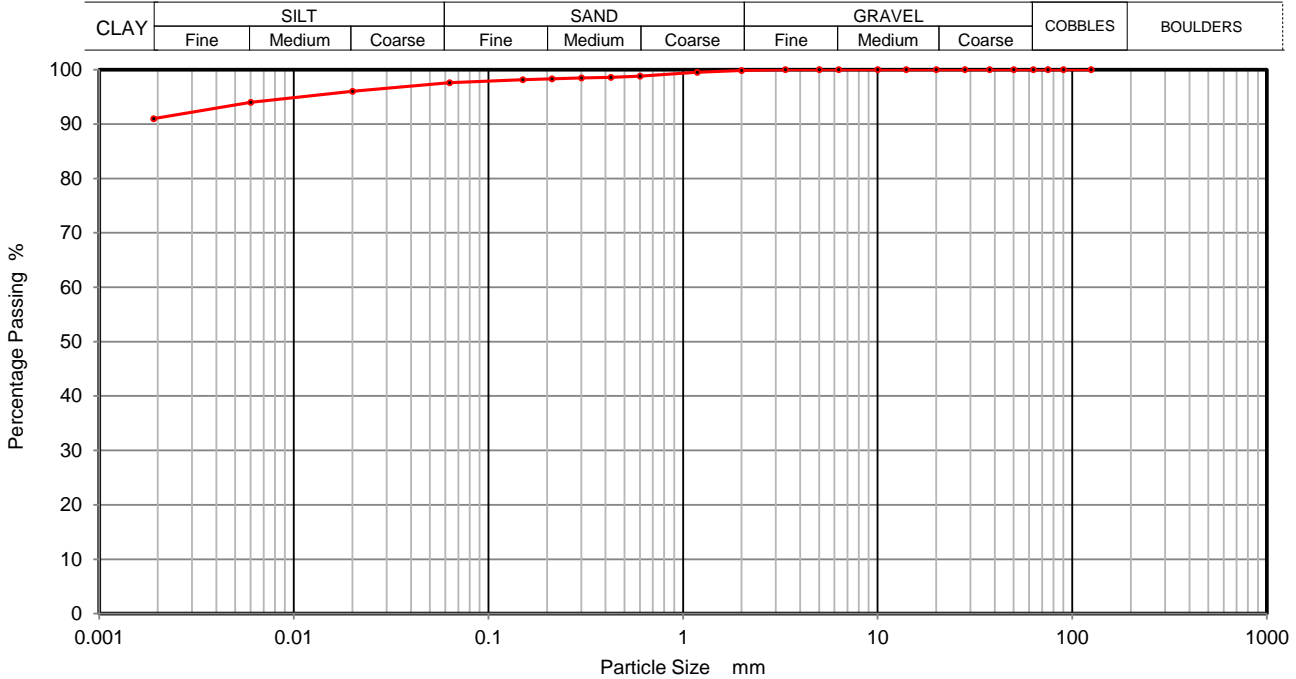




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP10
Sample No.	2
Depth Top	1.10
Depth Base	2.50
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Grey/ brown slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	96
90	100	0.0060	94
75	100	0.0020	91
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	98		
0.212	98		
0.15	98		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Silt	7
Clay	91

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

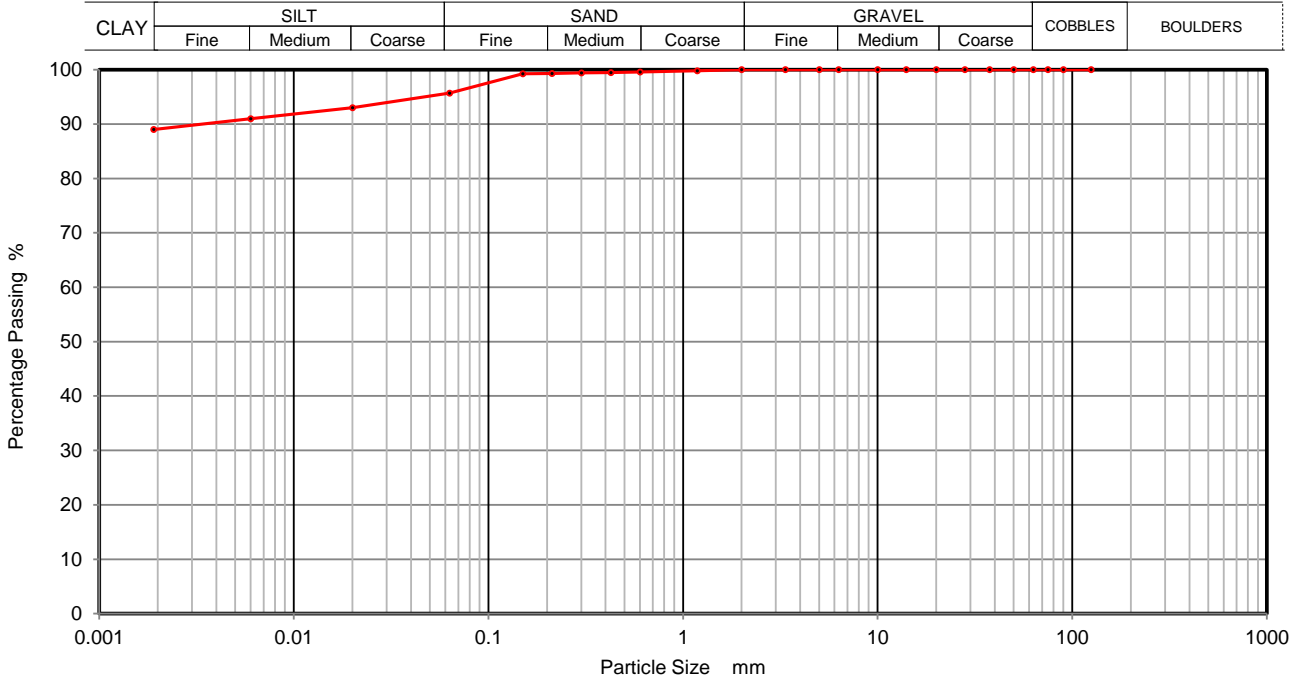




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP10
Sample No.	108
Depth Top	3.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	93
90	100	0.0060	91
75	100	0.0020	89
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	96		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	4
Silt	7
Clay	89

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

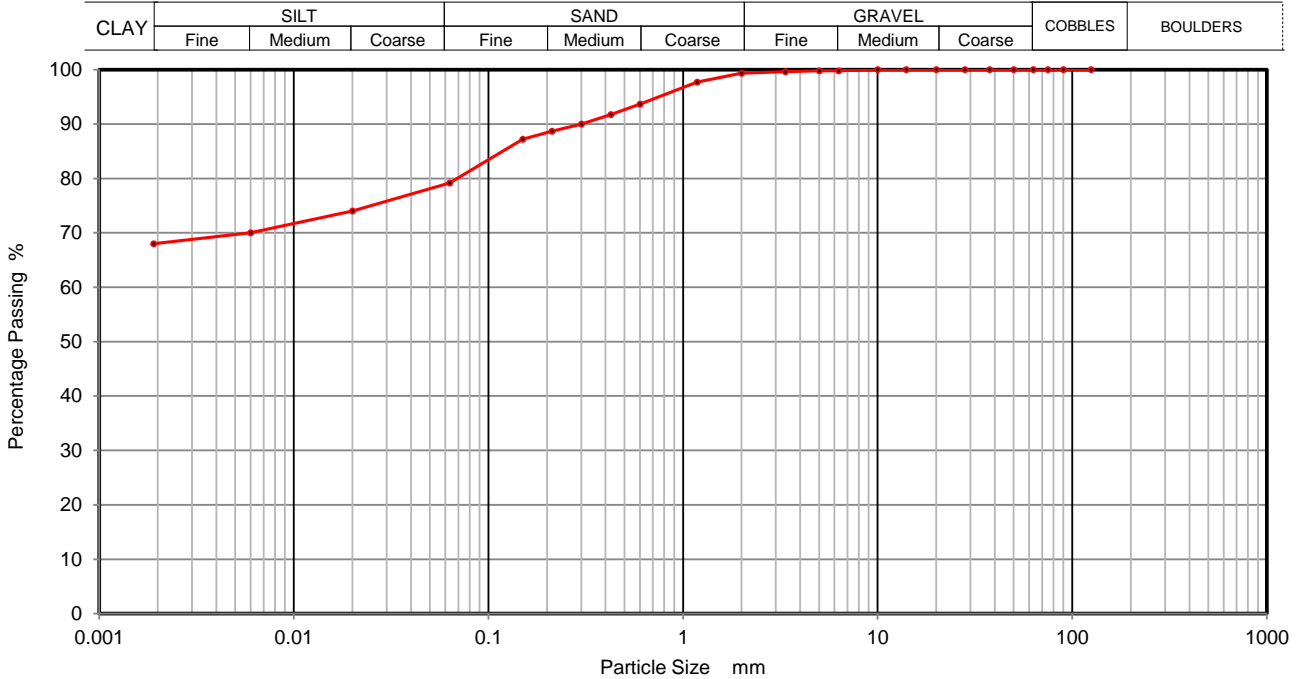




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP03
Sample No.	14
Depth Top	3.00
Depth Base	3.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown slightly gravelly fine to coarse sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	74
90	100	0.0060	70
75	100	0.0020	68
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	98		
0.6	94		
0.425	92		
0.3	90		
0.212	89		
0.15	87		
0.063	79		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	20
Silt	11
Clay	68

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

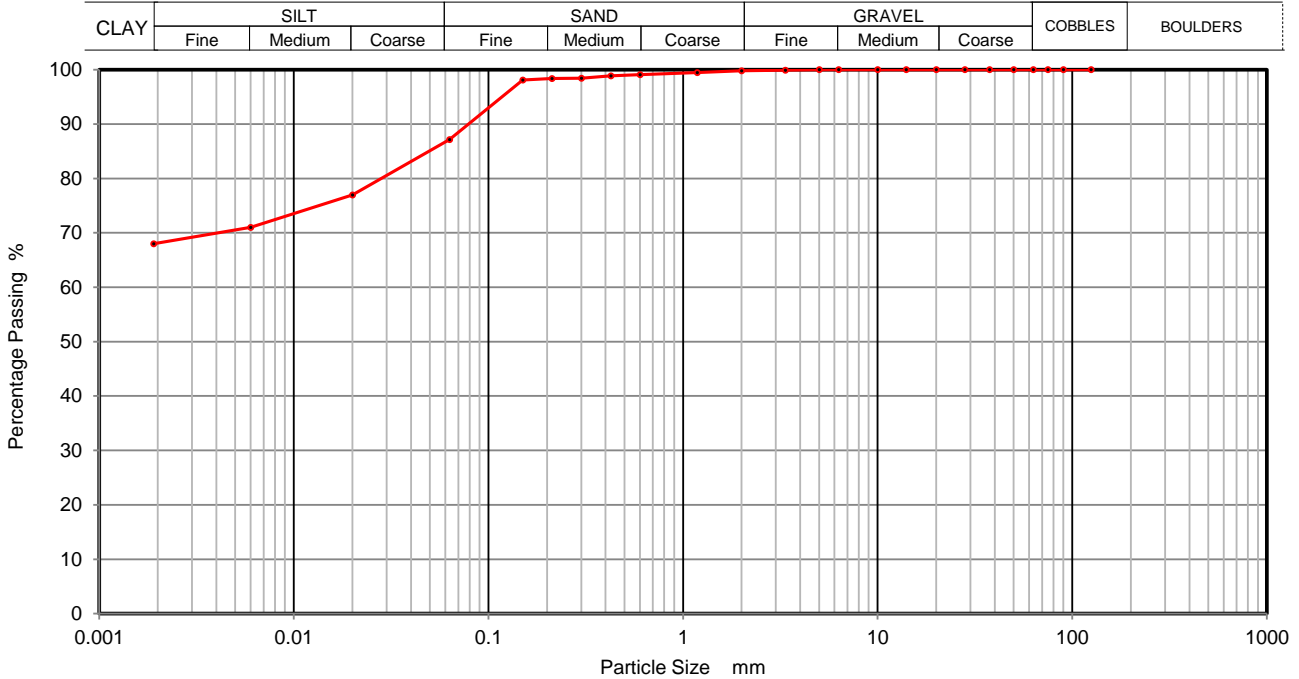




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP11
Sample No.	4
Depth Top	3.30
Depth Base	3.60
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown fine to coarse sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	77
90	100	0.0060	71
75	100	0.0020	68
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	99		
0.3	98		
0.212	98		
0.15	98		
0.063	87		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	13
Silt	19
Clay	68

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

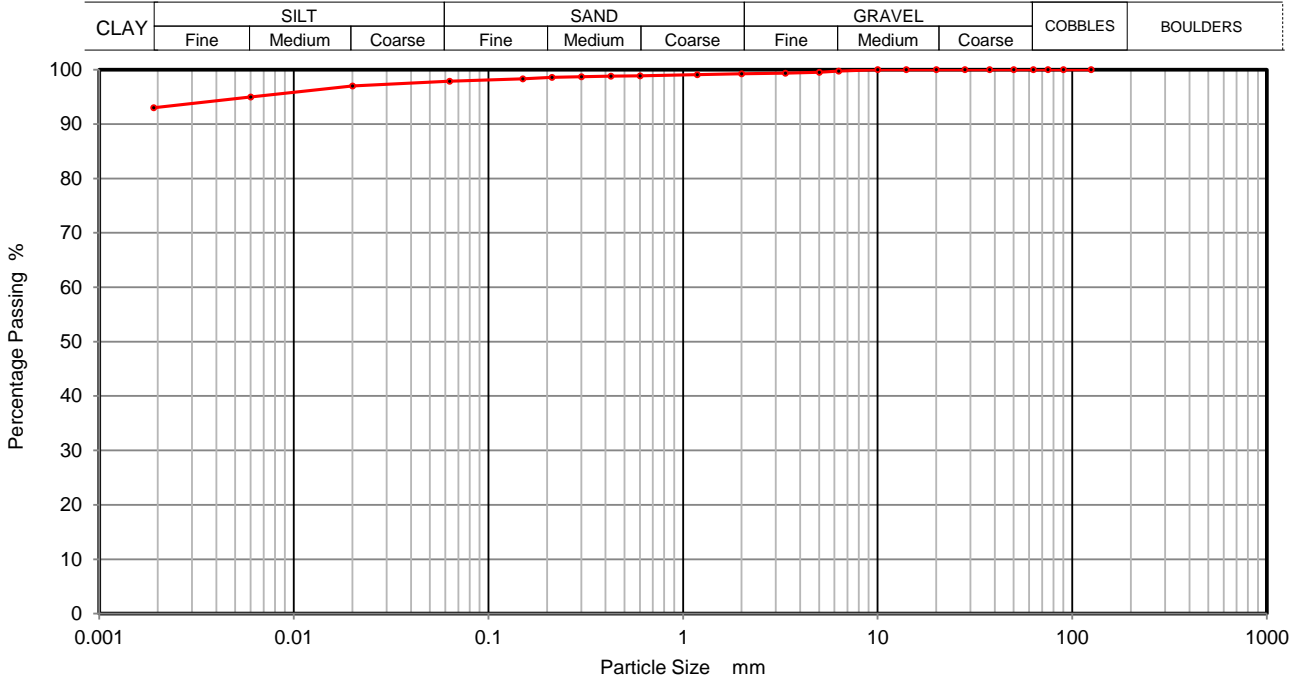




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	62787
Borehole/Pit No.	ATK_TP13
Sample No.	10
Depth Top	2.00
Depth Base	2.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Brown slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	97
90	100	0.0060	95
75	100	0.0020	93
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	99		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	98		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	1
Silt	5
Clay	93

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]

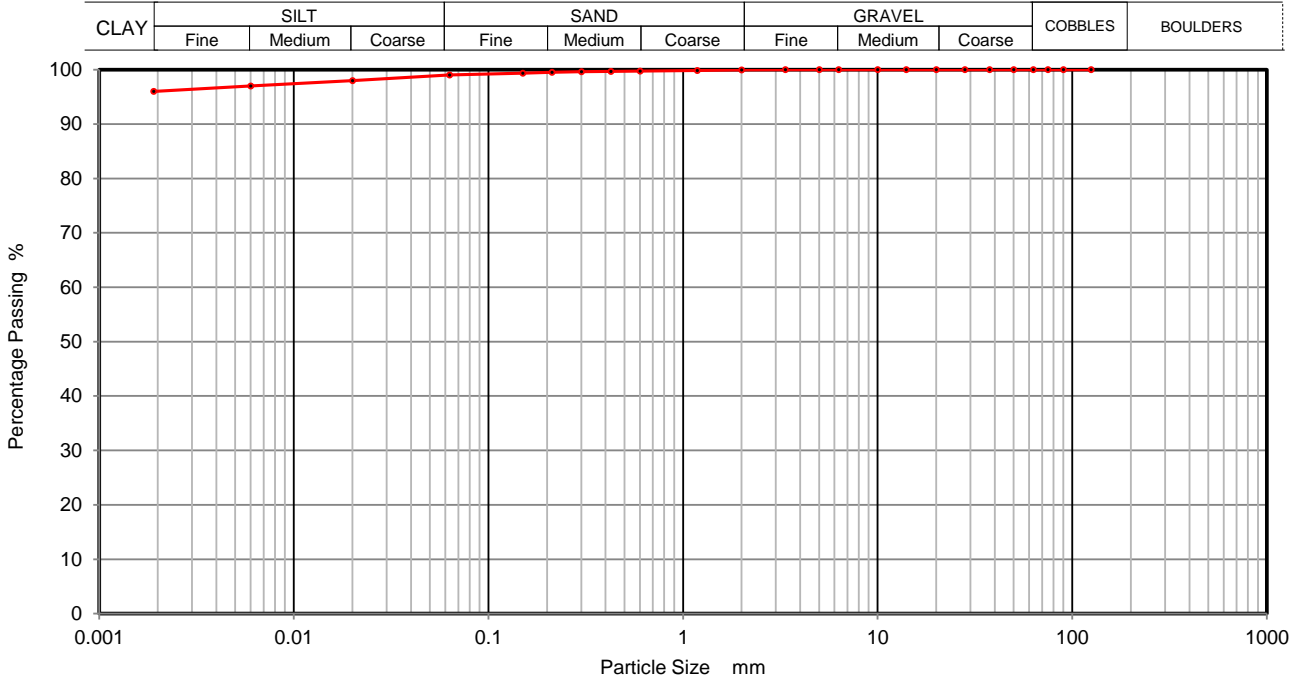




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP13
Sample No.	15
Depth Top	3.80
Depth Base	4.00
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Grey slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	98
90	100	0.0060	97
75	100	0.0020	96
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	99		
0.063	99		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	1
Silt	3
Clay	96

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]

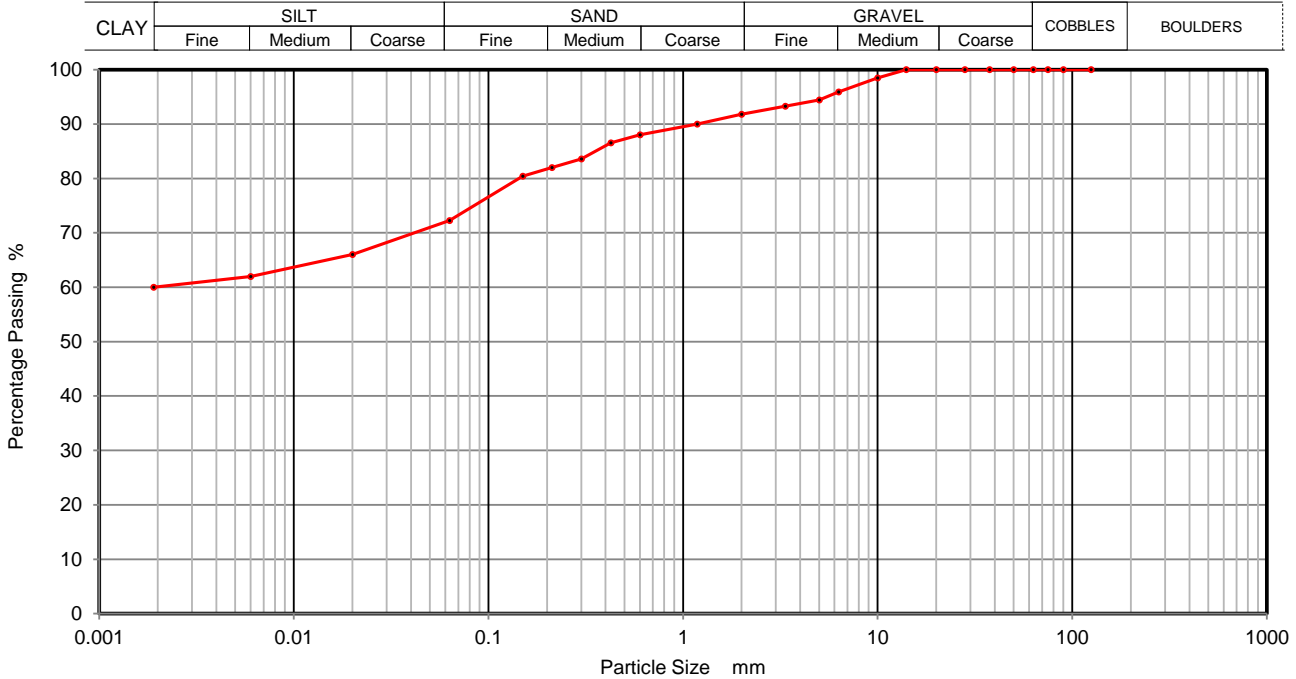




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP17
Sample No.	8
Depth Top	1.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	66
90	100	0.0060	62
75	100	0.0020	60
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	98		
6.3	96		
5	94		
3.35	93		
2	92		
1.18	90		
0.6	88		
0.425	87		
0.3	84		
0.212	82		
0.15	80		
0.063	72		

Sample Proportions	% dry mass
Cobbles	0
Gravel	8
Sand	20
Silt	12
Clay	60

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]

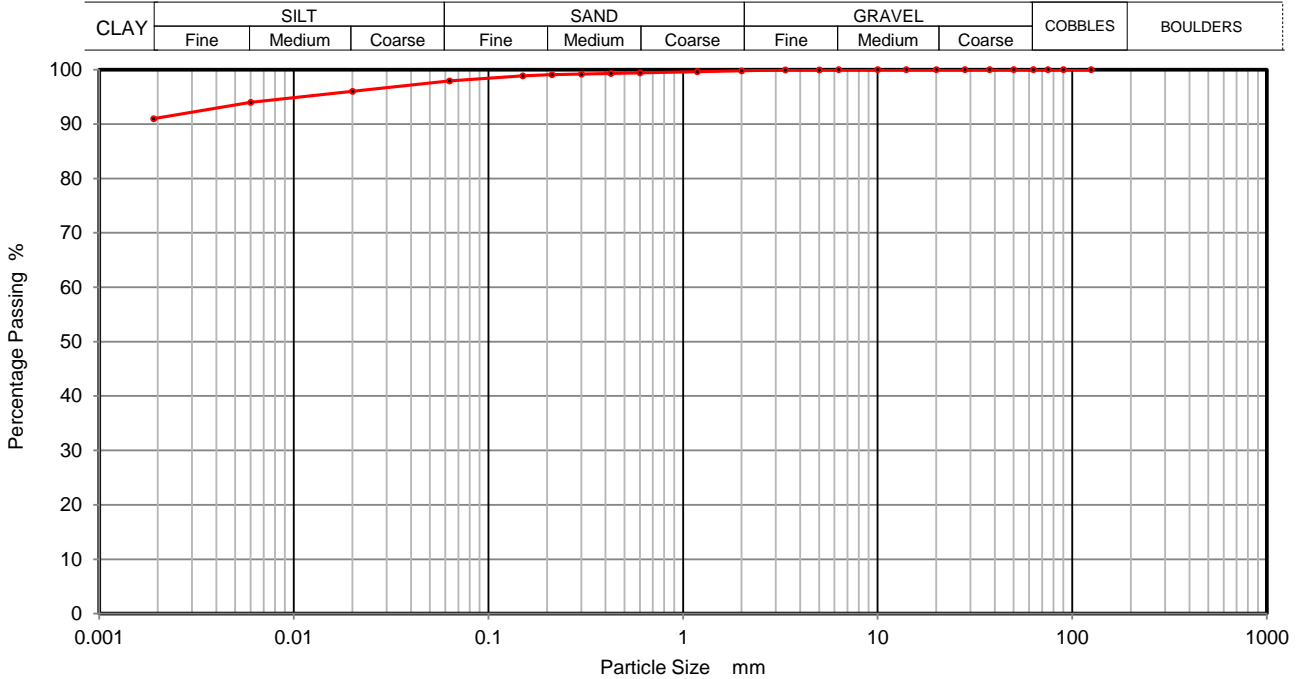




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62787
Borehole/Pit No.	ATK_TP17
Sample No.	14
Depth Top	3.30
Depth Base	3.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	Grey slightly sandy silty CLAY
Date Tested	07/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	96
90	100	0.0060	94
75	100	0.0020	91
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Silt	7
Clay	91

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]





2788

Laboratory Report



Contract Number: 62917

Client Ref: **H2060-22**

Client PO:

Date Received: **24-11-2022**

Date Completed: **23-12-2022**

Report Date: **23-12-2022**

Client: **SOCOTEC**

Unit 15

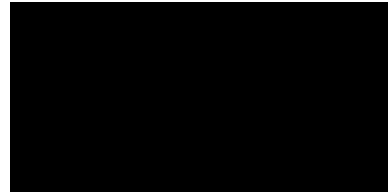
Crosby Yard Industrial Estate

Wildmill

Bridgend

CF31 1JZ

This report has been checked and approved by:



Quality/Technical Manager

Contract Title: **Lyneham Banks**

For the attention of:

Test Description	Qty
Samples Received - @ Non Accredited Test	17
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	9
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	9
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	9
PSD: Sedimentation by pipette carried out with Wet Sieve (Wet Sieve must also be selected) BS 1377:1990 - Part 2 : 9.4 - * UKAS	9
Quick Undrained Triaxial Compression test - single specimen at one confining pressure (100mm or 38mm diameter) BS 1377:1990 - Part 7 : 8 - * UKAS	6
Unconfined Compressive Strength on a single soil specimen BS 1377:1990 - Part 7 : 7 - @ Non Accredited Test	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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 test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (Human Resources/ Health and Safety Coordinator)

GEO Site & Testing Services Ltd

Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk



2788

Laboratory Report



Contract Number: 62917

Test Description	Qty
CUT 100mm Consolidated undrained triaxial compression test on a Single Specimen with Multistage Loading with the measurement of pore water pressure including saturation and consolidation, test duration FOUR days. PLEASE NOTE IT IS LIKELY THIS TEST WILL INCUR EXTRA OVER DAY CHARGES. BS 1377:1990 - Part 8 : 7 - * UKAS	1
Extra over items for test duration in excess of four days.	20
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

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Wayne Honey (Human Resources/ Health and Safety Coordinator)

GEO Site & Testing Services Ltd

Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

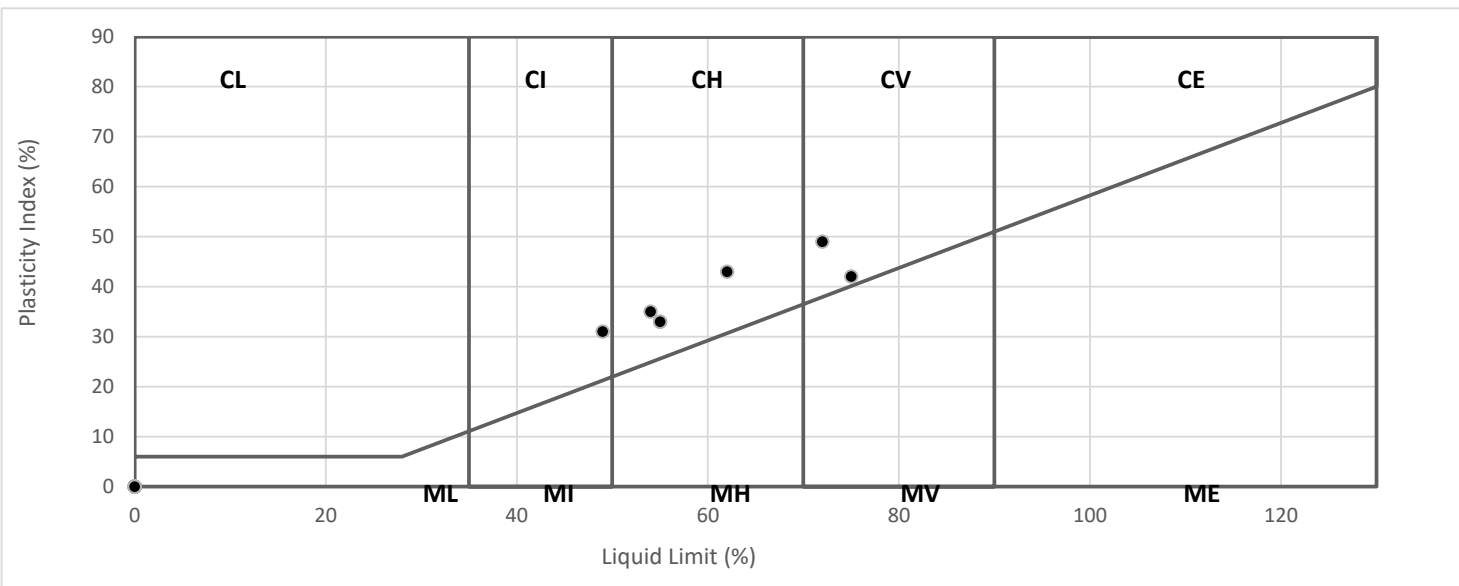
**NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND
PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)**

Contract Number	62917	
Project Name	Lyneham Banks	
Date Tested	08/11/2022	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
ATK_BH03	103	D	2.00	-		32	72	23	49	78	CV Very High Plasticity
ATK_BH03	109	D	4.70	-		32	55	22	33	98	CH High Plasticity
ATK_BH03	118	D	12.60	-		22	62	19	43	99	CH High Plasticity
ATK_BH14	102	D	1.00	-		44	55	22	33	99	CH High Plasticity
ATK_BH14	103	D	2.00	-		51	75	33	42	99	CV Very High Plasticity
ATK_BH14	108	D	6.00	-		26	54	19	35	66	CH High Plasticity
ATK_BH14	113	D	10.20	-		19	49	18	31	99	CI Intermediate Plasticity
				-							
				-							
				-							
				-							
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				-							
				-							
				-							
				-							
				-							
				-							

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

**PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:2015+A1:2020**



Operator
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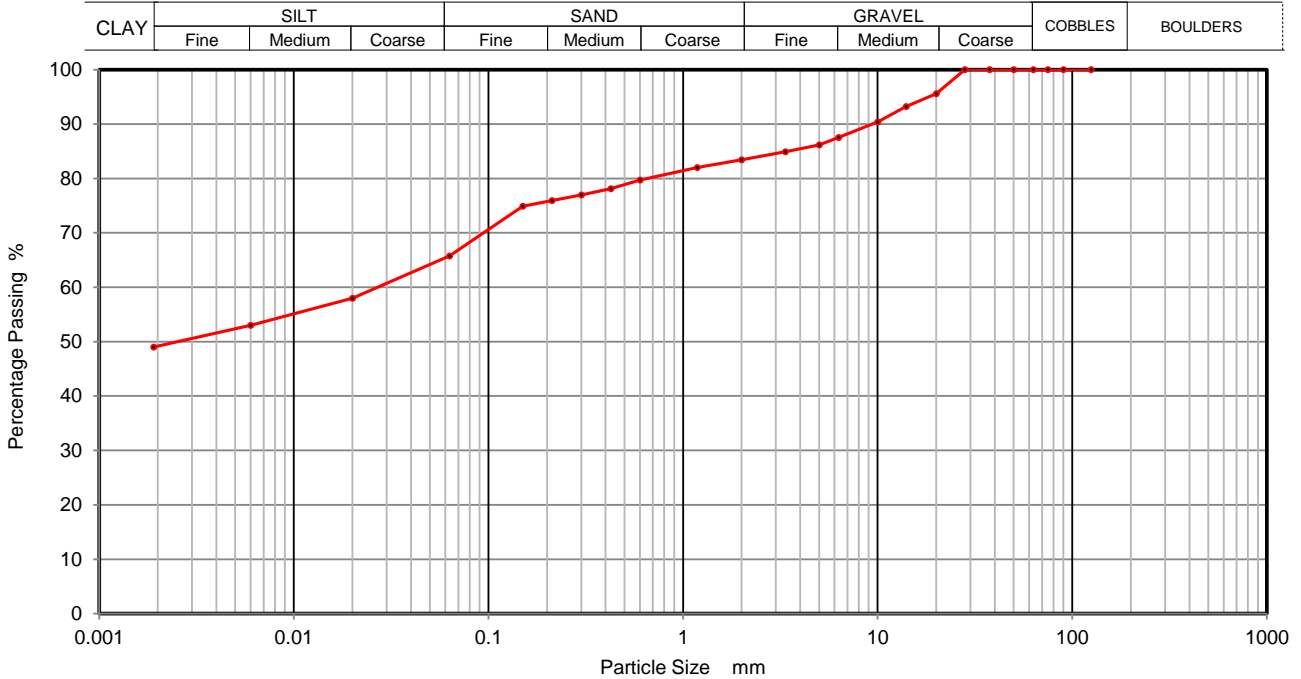




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62917
Borehole/Pit No.	ATK_BH03
Sample No.	103
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	12/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	58
90	100	0.0060	53
75	100	0.0020	49
63	100		
50	100		
37.5	100		
28	100		
20	96		
14	93		
10	90		
6.3	88		
5	86		
3.35	85		
2	83		
1.18	82		
0.6	80		
0.425	78		
0.3	77		
0.212	76		
0.15	75		
0.063	66		

Sample Proportions	% dry mass
Cobbles	0
Gravel	17
Sand	17
Silt	17
Clay	49

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]

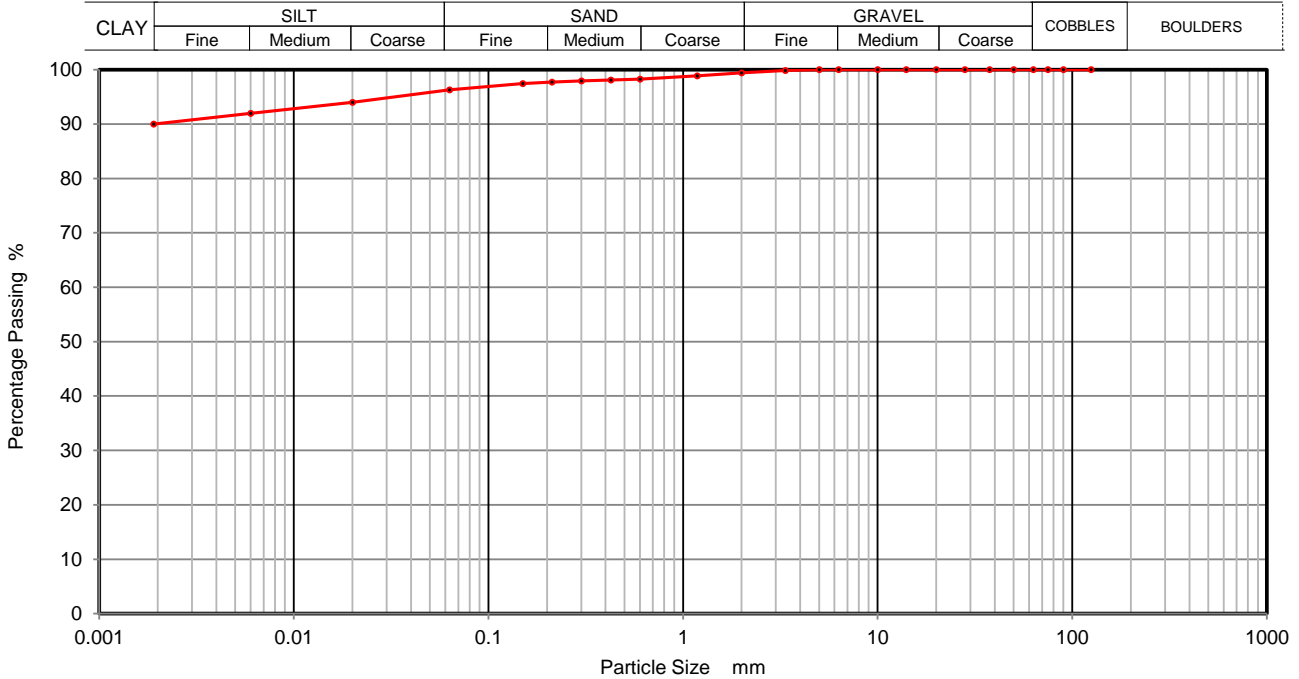




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	62917
Borehole/Pit No.	ATK_BH03
Sample No.	109
Depth Top	4.70
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	12/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	94
90	100	0.0060	92
75	100	0.0020	90
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.6	98		
0.425	98		
0.3	98		
0.212	98		
0.15	97		
0.063	96		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	3
Silt	6
Clay	90

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

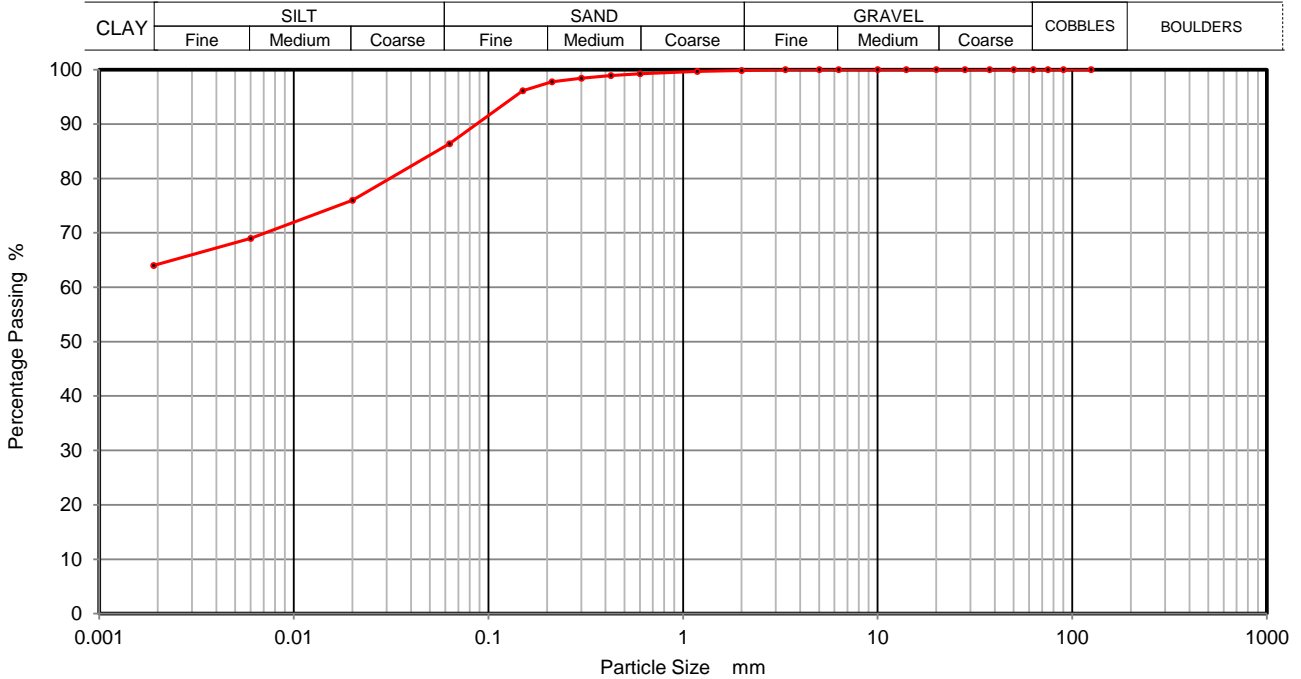




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62917
Borehole/Pit No.	ATK_BH03
Sample No.	118
Depth Top	12.60
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	12/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	76
90	100	0.0060	69
75	100	0.0020	64
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	98		
0.212	98		
0.15	96		
0.063	86		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	14
Silt	22
Clay	64

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

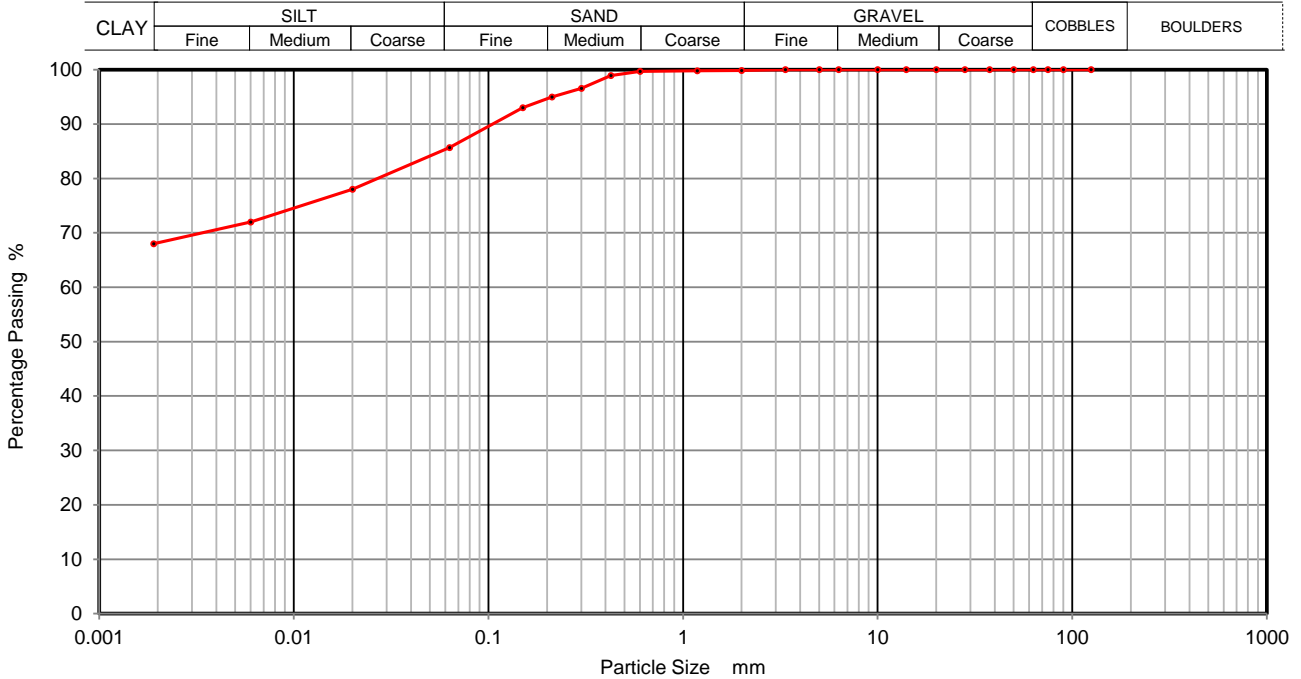




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	62917
Borehole/Pit No.	ATK_BH14
Sample No.	102
Depth Top	1.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	12/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	78
90	100	0.0060	72
75	100	0.0020	68
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	97		
0.212	95		
0.15	93		
0.063	86		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	14
Silt	18
Clay	68

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████

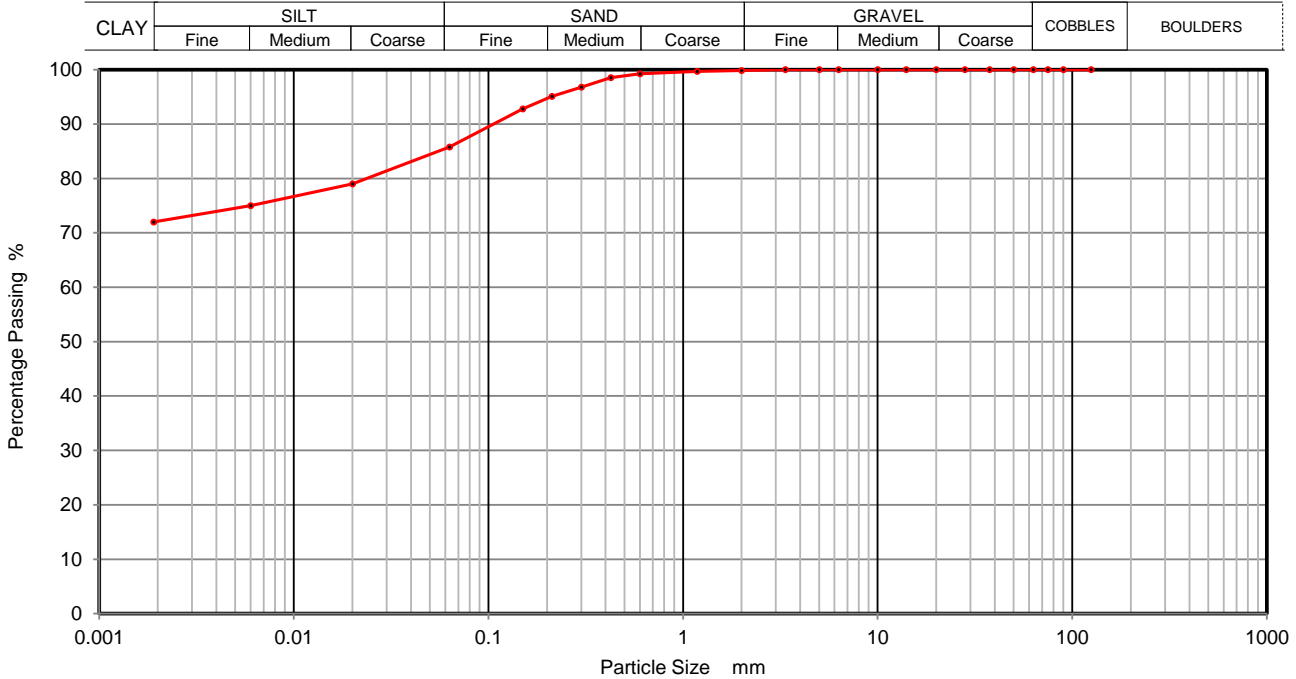




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62917
Borehole/Pit No.	ATK_BH14
Sample No.	103
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	12/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	79
90	100	0.0060	75
75	100	0.0020	72
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	97		
0.212	95		
0.15	93		
0.063	86		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	14
Silt	14
Clay	72

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]

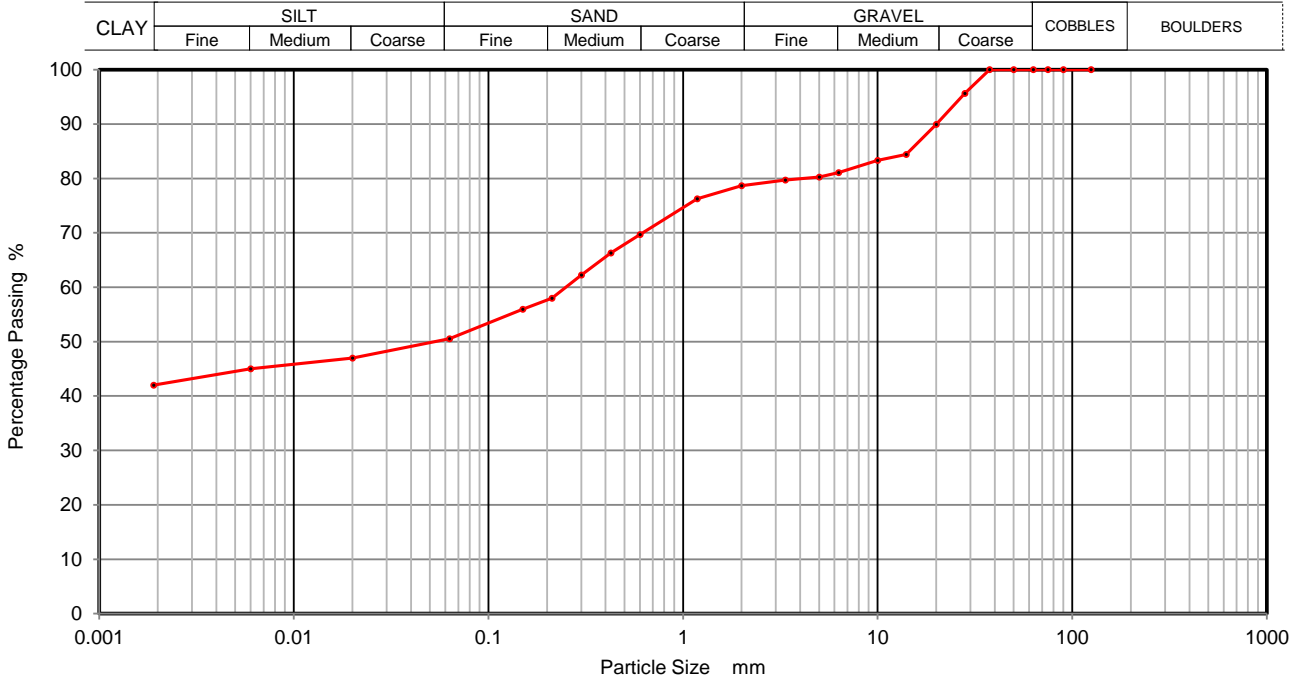




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62917
Borehole/Pit No.	ATK_BH14
Sample No.	108
Depth Top	6.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	12/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	47
90	100	0.0060	45
75	100	0.0020	42
63	100		
50	100		
37.5	100		
28	96		
20	90		
14	84		
10	83		
6.3	81		
5	80		
3.35	80		
2	79		
1.18	76		
0.6	70		
0.425	66		
0.3	62		
0.212	58		
0.15	56		
0.063	51		

Sample Proportions	% dry mass
Cobbles	0
Gravel	21
Sand	28
Silt	9
Clay	42

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]

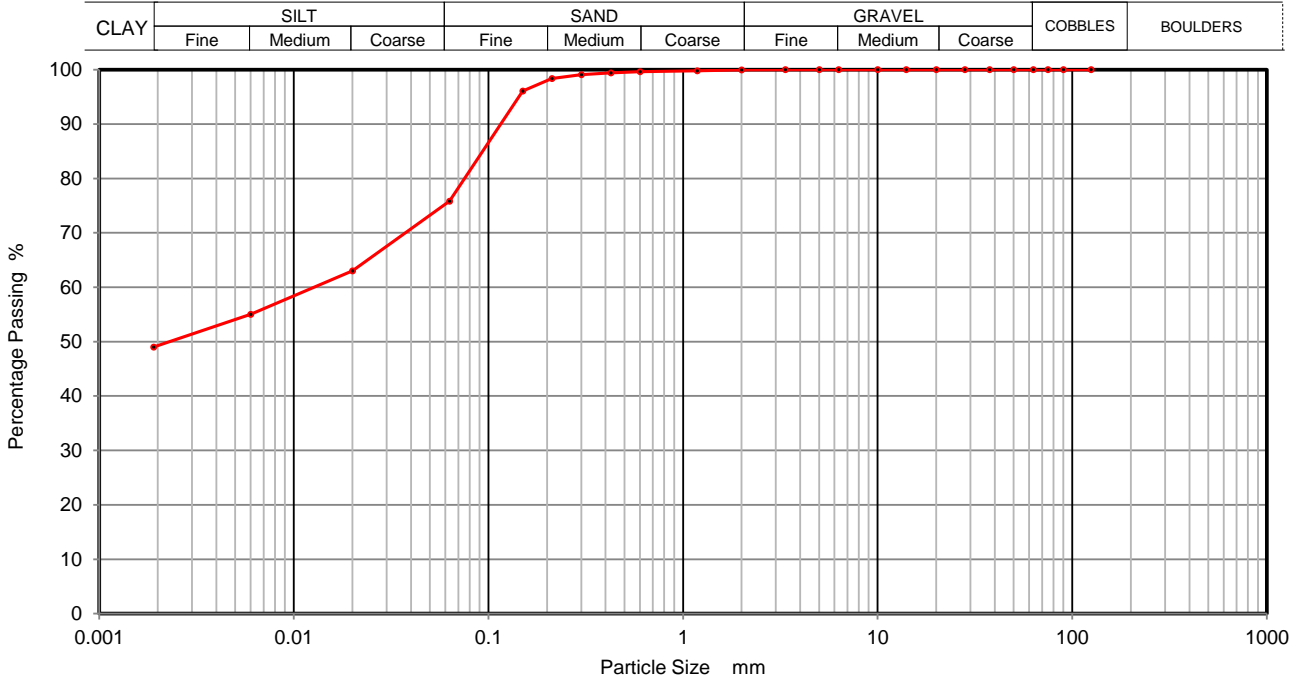




PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	62917
Borehole/Pit No.	ATK_BH14
Sample No.	113
Depth Top	10.20
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	12/12/2022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	63
90	100	0.0060	55
75	100	0.0020	49
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	99		
0.212	98		
0.15	96		
0.063	76		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	24
Silt	27
Clay	49

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]

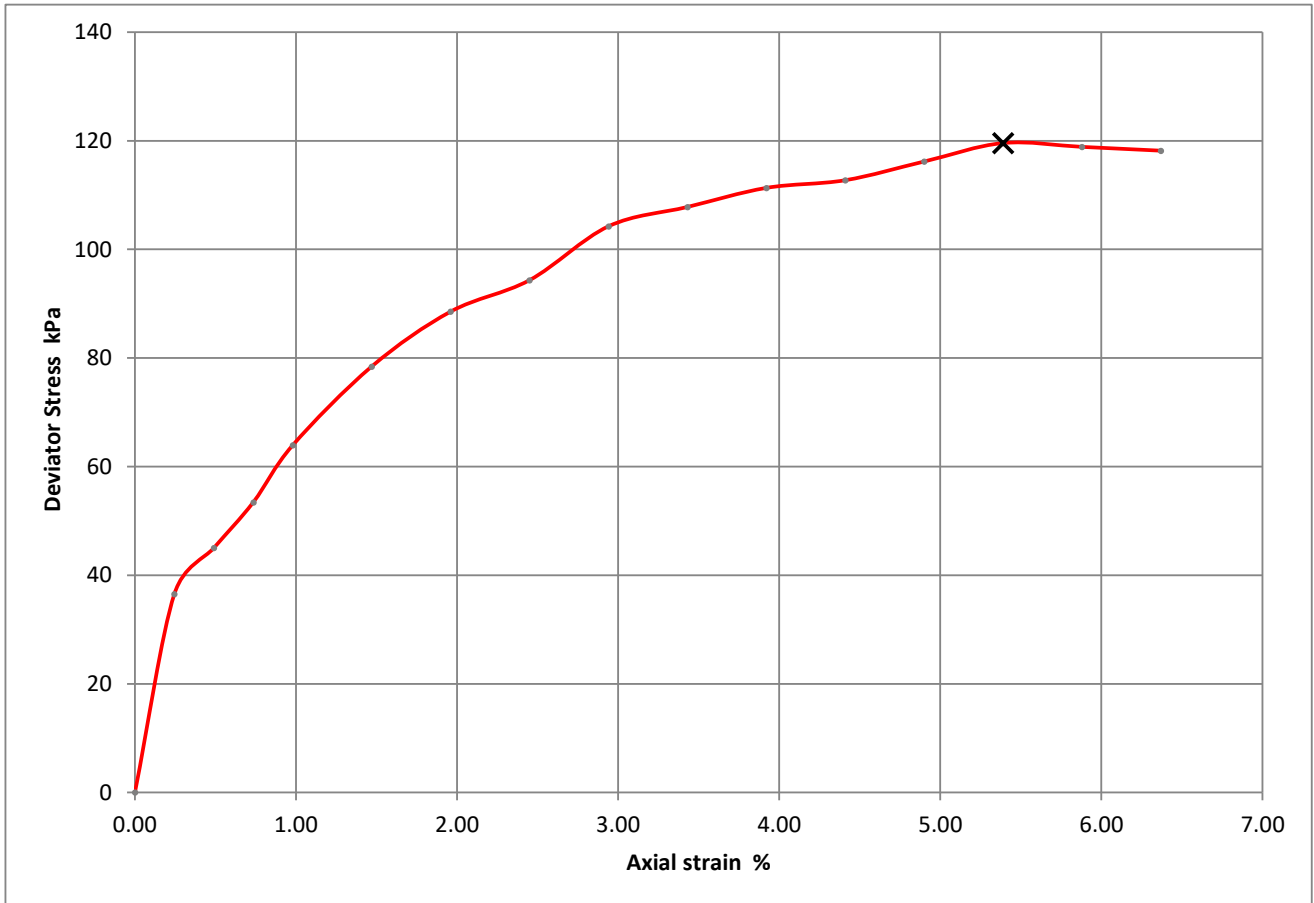




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	62917
Borehole/Pit No.	ATK_BH03
Sample No.	107
Depth Top (m)	3.50
Depth Base (m)	3.90
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	*See Sample Description Sheet
Date Tested	05/12/2022



Moisture Content (%)	34
Bulk Density (Mg/m ³)	1.90
Dry Density (Mg/m ³)	1.41
Specimen Length (mm)	204.1
Specimen Diameter (mm)	97.7
Cell Pressure (kPa)	60
Deviator Stress (kPa)	120
Undrained Shear Strength (kPa)	60
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.47

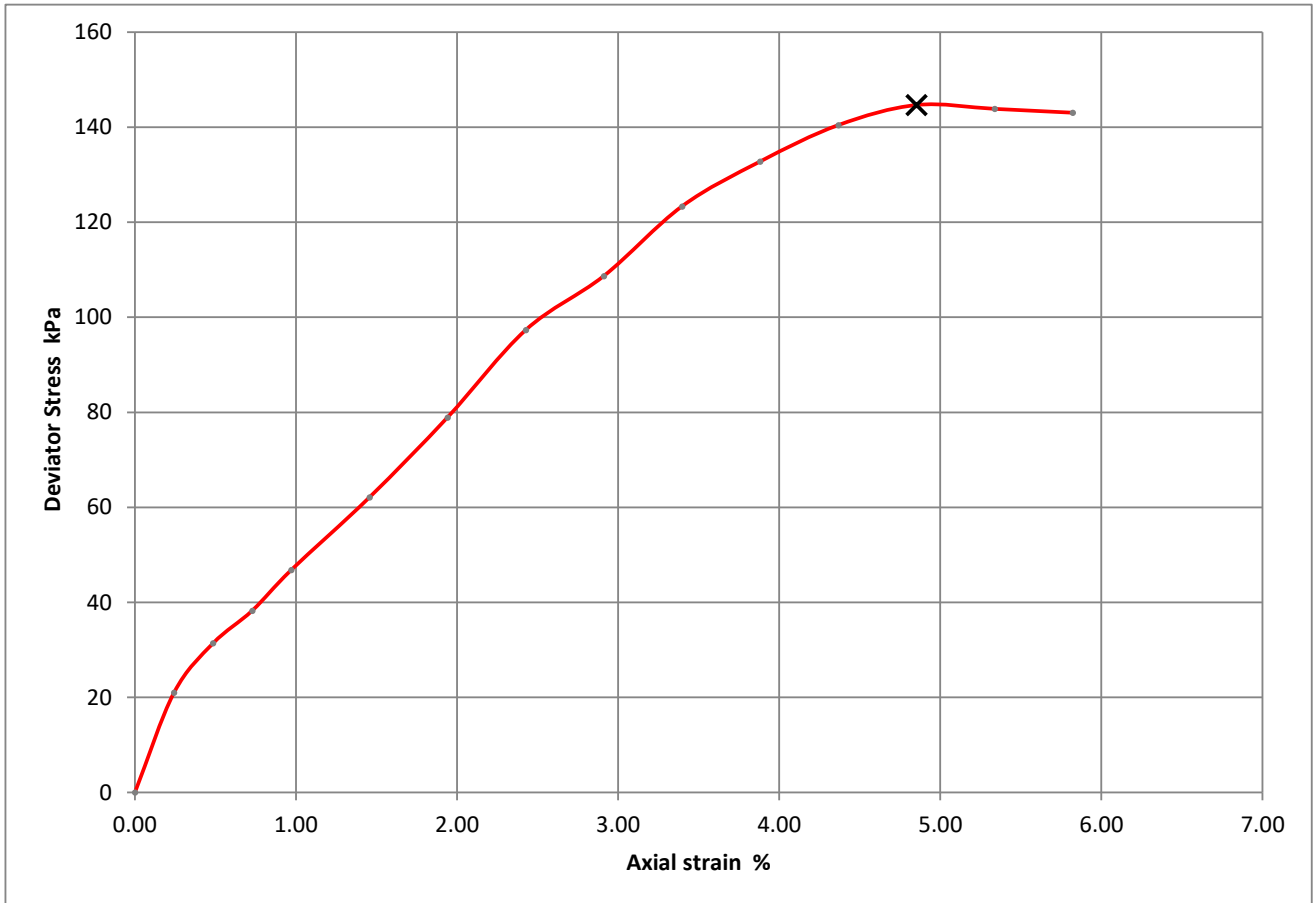




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	62917
Borehole/Pit No.	ATK_BH03
Sample No.	115
Depth Top (m)	8.60
Depth Base (m)	9.00
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	*See Sample Description Sheet
Date Tested	05/12/2022



Moisture Content (%)	21
Bulk Density (Mg/m ³)	2.07
Dry Density (Mg/m ³)	1.71
Specimen Length (mm)	206.1
Specimen Diameter (mm)	108.3
Cell Pressure (kPa)	160
Deviator Stress (kPa)	145
Undrained Shear Strength (kPa)	72
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.46

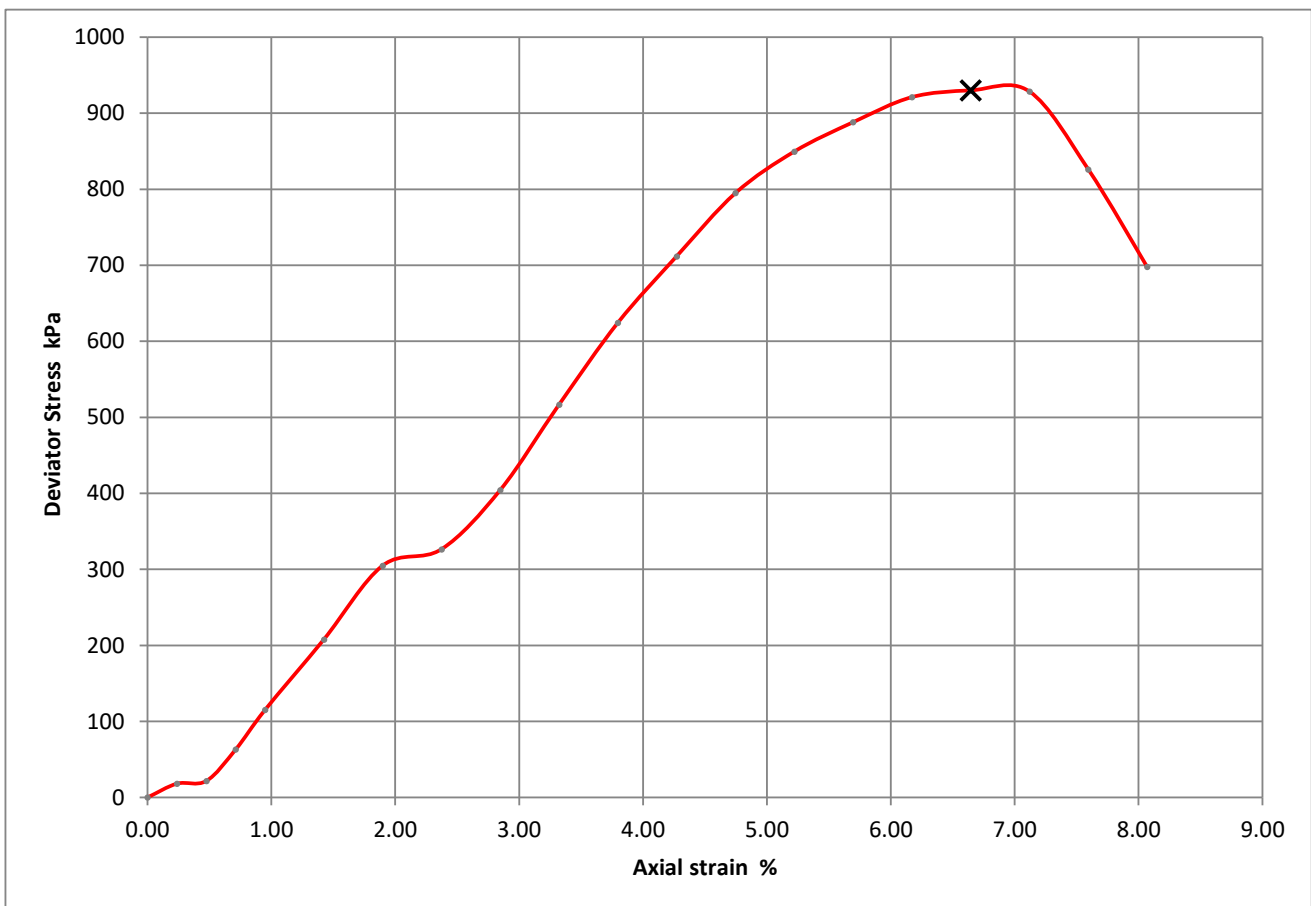




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	62917
Borehole/Pit No.	ATK_BH03
Sample No.	127
Depth Top (m)	15.60
Depth Base (m)	15.90
Sample Type	CS
Operator	██████████

Project Name	Lyneham Banks
Soil Description	*See Sample Description Sheet
Date Tested	05/12/2022



Moisture Content (%)	14
Bulk Density (Mg/m ³)	2.24
Dry Density (Mg/m ³)	1.96
Specimen Length (mm)	210.7
Specimen Diameter (mm)	106.4
Cell Pressure (kPa)	300
Deviator Stress (kPa)	930
Undrained Shear Strength (kPa)	465
Failure Strain (%)	7
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42

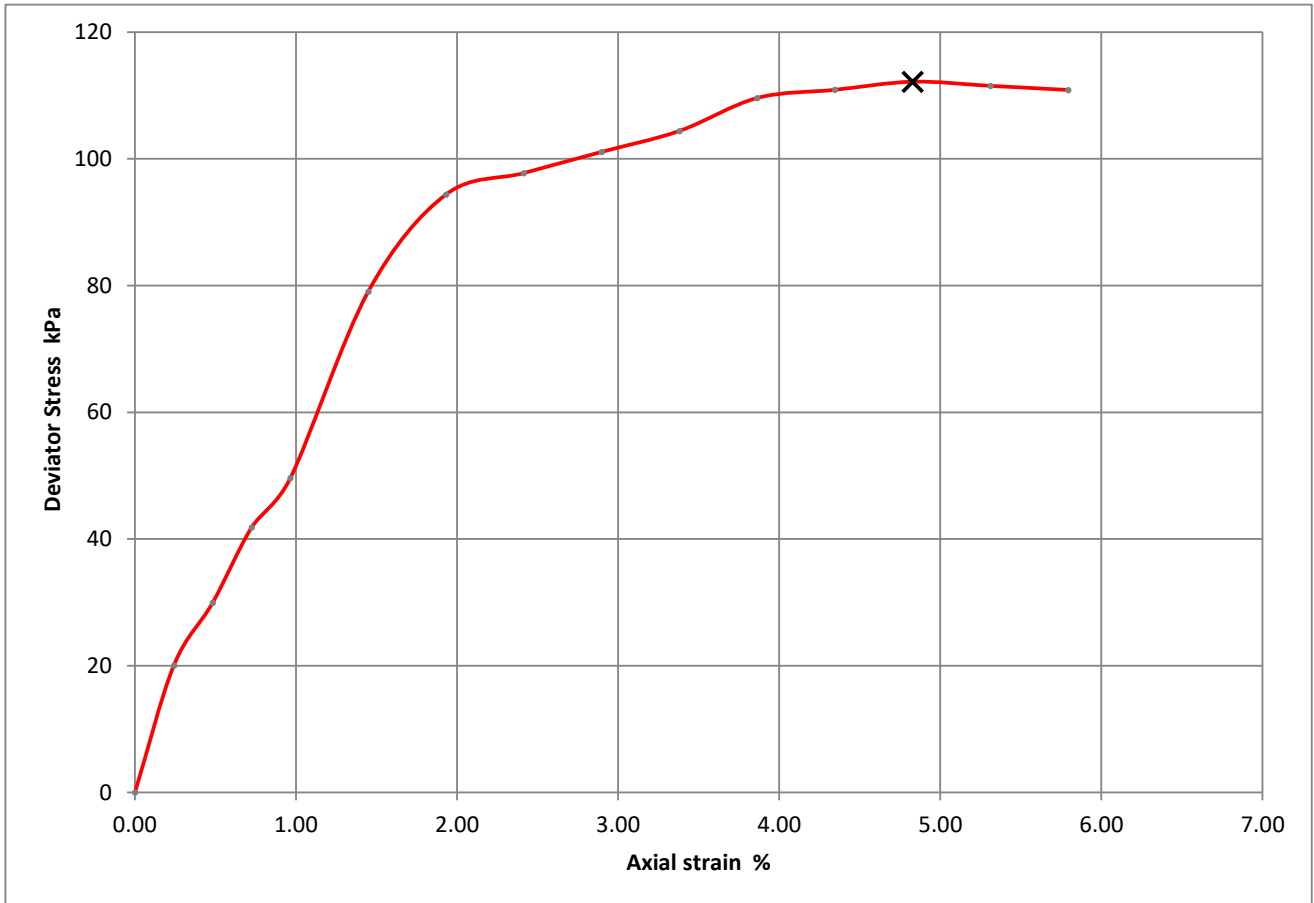




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	62917
Borehole/Pit No.	ATK_BH14
Sample No.	112
Depth Top (m)	9.60
Depth Base (m)	9.90
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	*See Sample Description Sheet
Date Tested	05/12/2022



Moisture Content (%)	25
Bulk Density (Mg/m ³)	2.05
Dry Density (Mg/m ³)	1.64
Specimen Length (mm)	207.1
Specimen Diameter (mm)	101.2
Cell Pressure (kPa)	200
Deviator Stress (kPa)	112
Undrained Shear Strength (kPa)	56
Failure Strain (%)	5
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.45

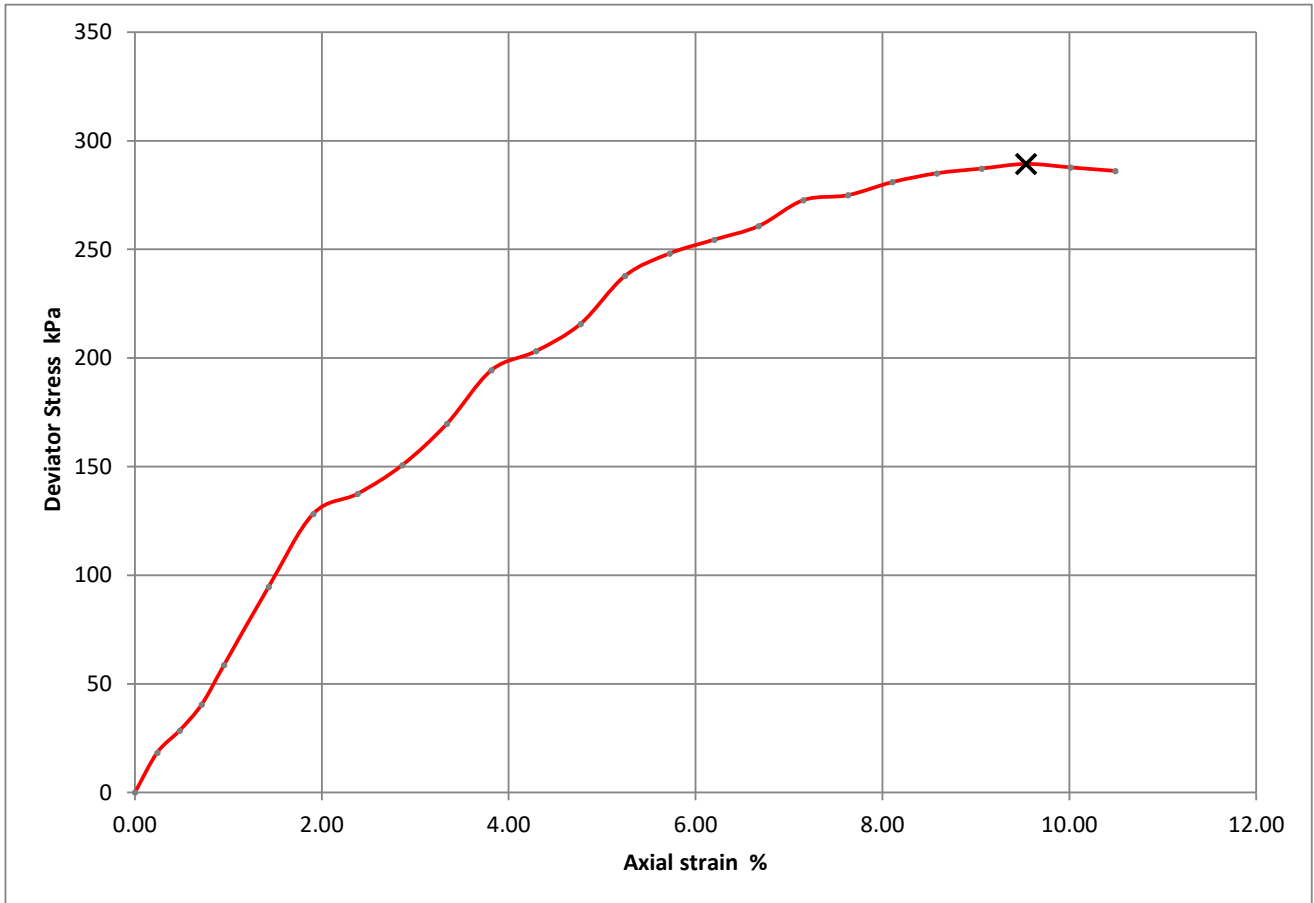




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	62917
Borehole/Pit No.	ATK_BH14
Sample No.	118
Depth Top (m)	13.80
Depth Base (m)	14.10
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	*See Sample Description Sheet
Date Tested	05/12/2022



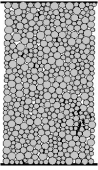
Moisture Content (%)	19
Bulk Density (Mg/m ³)	2.09
Dry Density (Mg/m ³)	1.75
Specimen Length (mm)	209.7
Specimen Diameter (mm)	100.3
Cell Pressure (kPa)	250
Deviator Stress (kPa)	289
Undrained Shear Strength (kPa)	145
Failure Strain (%)	10
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



Effective Stress Triaxial Compression

Consolidated Undrained


Summary Report

Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">10.95-11.30</td> </tr> <tr> <td>Description</td> <td colspan="3">Grey, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">CS</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>210.9</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>101.7</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3411.4</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.99</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	10.95-11.30			Description	Grey, CLAY			Type	CS			Initial Sample Length	L_0	(mm)	210.9	Initial Sample Diameter	D_0	(mm)	101.7	Initial Sample Weight	W_0	(gr)	3411.4	Initial Bulk Density	ρ_0	(Mg/m ³)	1.99	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	10.95-11.30																																
Description	Grey, CLAY																																
Type	CS																																
Initial Sample Length	L_0	(mm)	210.9																														
Initial Sample Diameter	D_0	(mm)	101.7																														
Initial Sample Weight	W_0	(gr)	3411.4																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.99																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	400	500	700	
Initial Back Pressure	U_{bi}	(kPa)	300	300	300	
Strain Rate	m_s	(mm/min)	0.00696	0.00780	0.09990	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	w_i	(%)	23			
Initial Dry Density	ρ_{di}	(Mg/m ³)	1.62			
Initial Voids Ratio	e_i	.	0.636			
Initial Degree of Saturation	S_i	(%)	96			
B Value	B	.	1.00			

Final Conditions			Stage 1	2	3	4
Final Moisture	w_f	(%)	23			
Final Dry Density	ρ_{df}	(Mg/m ³)	1.75			
Final Voids Ratio	e_f	.	0.516			
Final Degree of Saturation	S_f	(%)	100.0			
Failure Criteria	.	.	Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)	3.26	5.07	6.40	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)	126.7	160.4	250.7	
Minor Stress At Failure	σ_3'	(kPa)	45.6	78.0	157.5	
Major Stress At Failure	σ_1'	(kPa)	172.3	238.4	408.2	
Principal Stress At Failure	σ_1' / σ_3'		3.776	3.056	2.592	
PwP At Failure Criteria	u_f		354.4	422.0	542.5	

Notes				 Compound
Side Drains Used During Test				
	1	2	3	
Side Drain Correction at Failure (kpa)	3.44	3.44	3.44	
Membrane Correction at Failure (kpa)	0.35	0.56	0.65	

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	29/11/2022	
	Site Reference		Borehole	ATK_BH03	
	Jobfile	62917	Sample	124	
	Client	SOCOTEC	Depth	10.95-11.30	
Operator	██████████	Checked	██████████	Approved	██████████



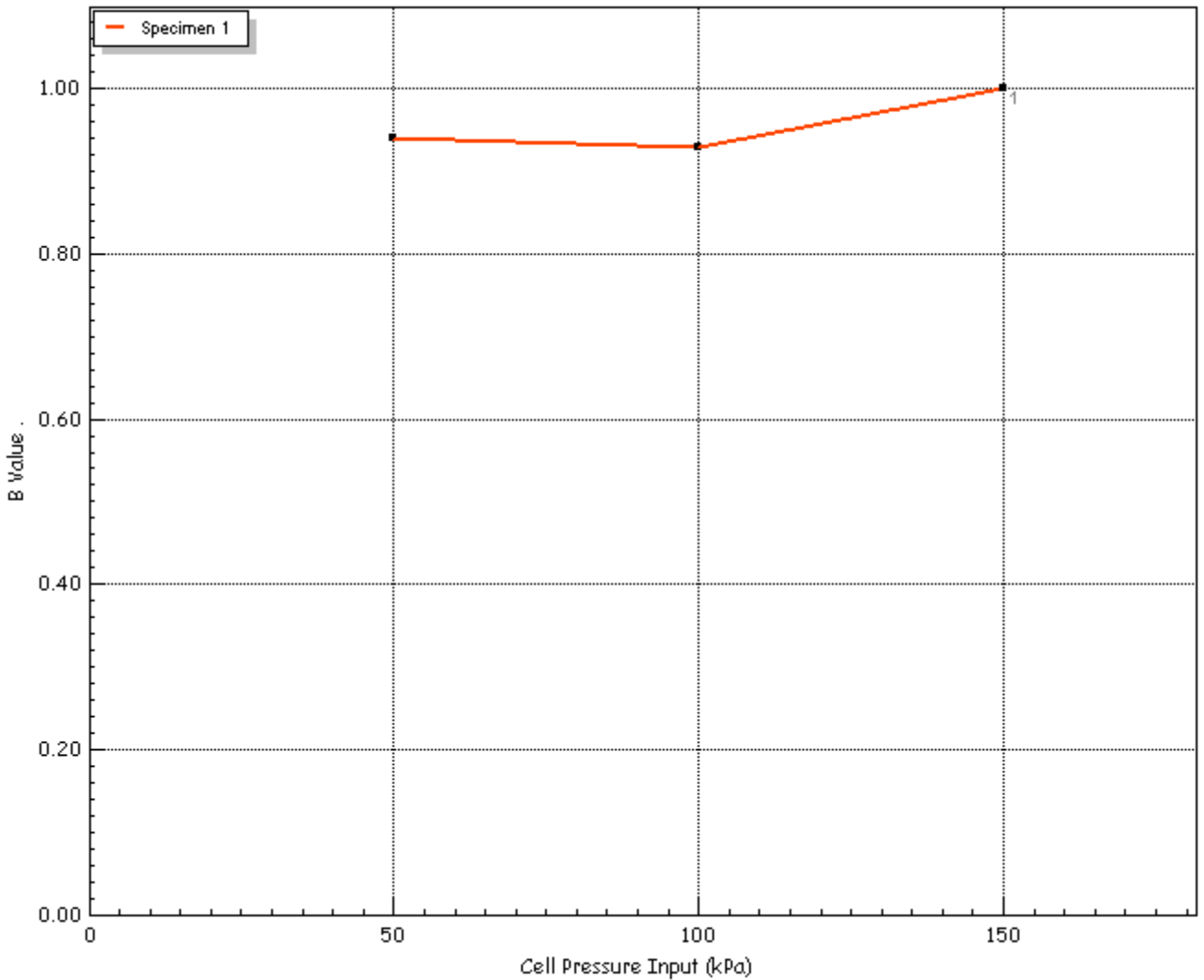
Effective Stress Triaxial Compression


Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	150
Pore Water Pressure Input	u_{pwp}	(kPa)	138
B Value	B	.	1.00



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	29/11/2022	
	Site Reference		Borehole	ATK_BH03	
	Jobfile	62917	Sample	124	
	Client	SOCOTEC	Depth	10.95-11.30	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

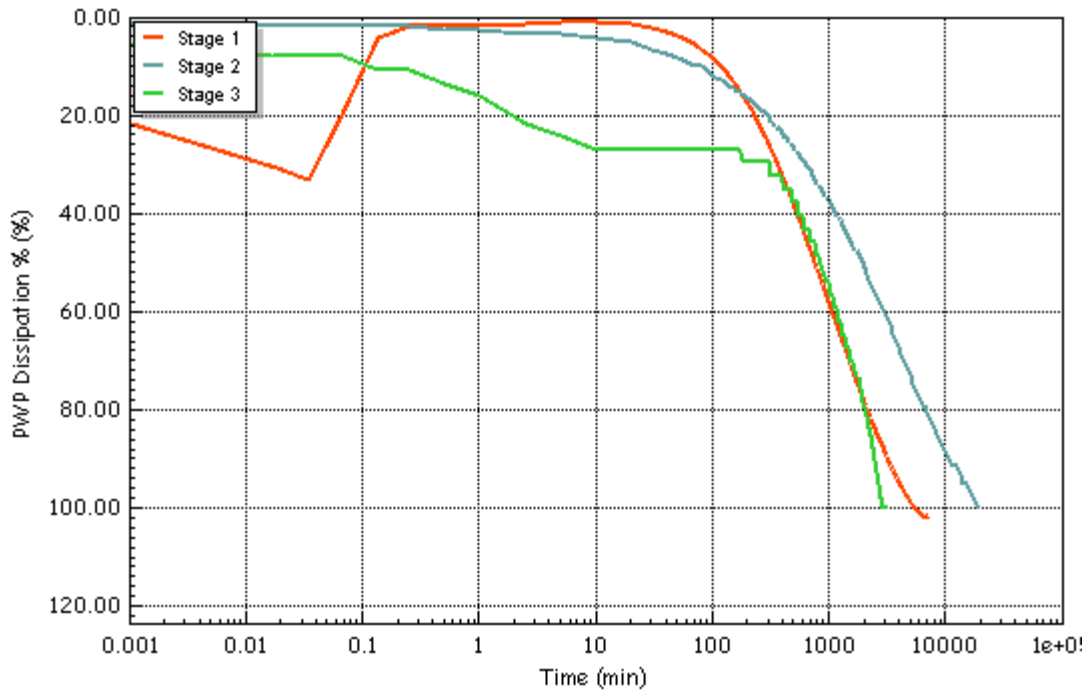
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	400	500	700
Initial Back Pressure	u_{bi}	(kPa)	300	300	300
Pore Water Pressure Input	u_{pwp}	(kPa)	388	418	337
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	101.80	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	5.57	2.01	0.69
Corrected Length	L_c	(mm)	207.0	198.8	193.5
Corrected Area	A_c	(cm ²)	78.22	79.65	81.23
Corrected Volume	V_c	(cc)	1617.841	1583.486	1571.654
t100	t_{100}	(min)	826.15	7105.95	3299.60
Consolidation	c_v	(m ² /year)	0.002	0.000	0.001
Compressibility	m_v	(m ² /MN)	0.62	0.17	0.19
Test Time	t_F	(h:m:s)	24:47:04	213:10:43	98:59:16
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.00696	0.00078	0.00163

Notes

Side Drains Used During Test



GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	29/11/2022	
	Site Reference		Borehole	ATK_BH03	
	Jobfile	62917	Sample	124	
Client	SOCOTEC	Depth	10.95-11.30		
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

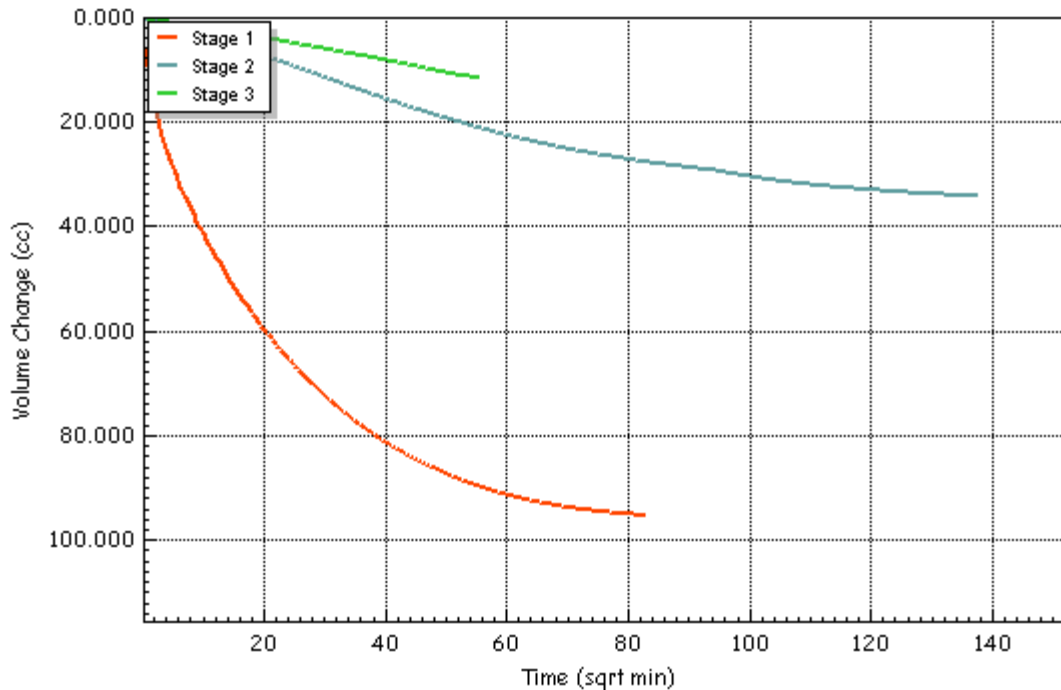
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	400	500	700
Initial Back Pressure	u_{bi}	(kPa)	300	300	300
Pore Water Pressure Input	u_{pwp}	(kPa)	388	418	337
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	101.80	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	5.57	2.01	0.69
Corrected Length	L_c	(mm)	207.0	198.8	193.5
Corrected Area	A_c	(cm ²)	78.22	79.65	81.23
Corrected Volume	V_c	(cc)	1617.841	1583.486	1571.654
t100	t_{100}	(min)	826.15	7105.95	3299.60
Consolidation	c_v	(m ² /year)	0.002	0.000	0.001
Compressibility	m_v	(m ² /MN)	0.62	0.17	0.19
Test Time	t_F	(h:m:s)	24:47:04	213:10:43	98:59:16
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.00696	0.00078	0.00163

Notes

Side Drains Used During Test



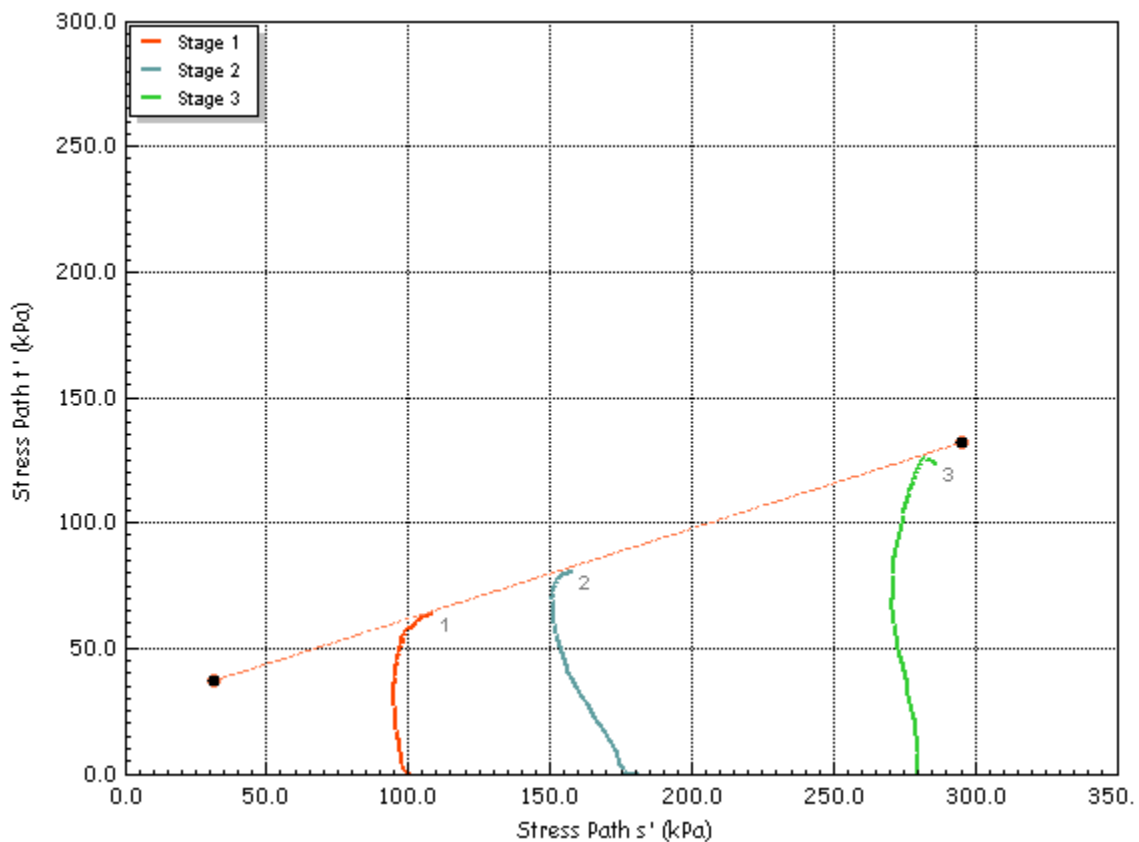
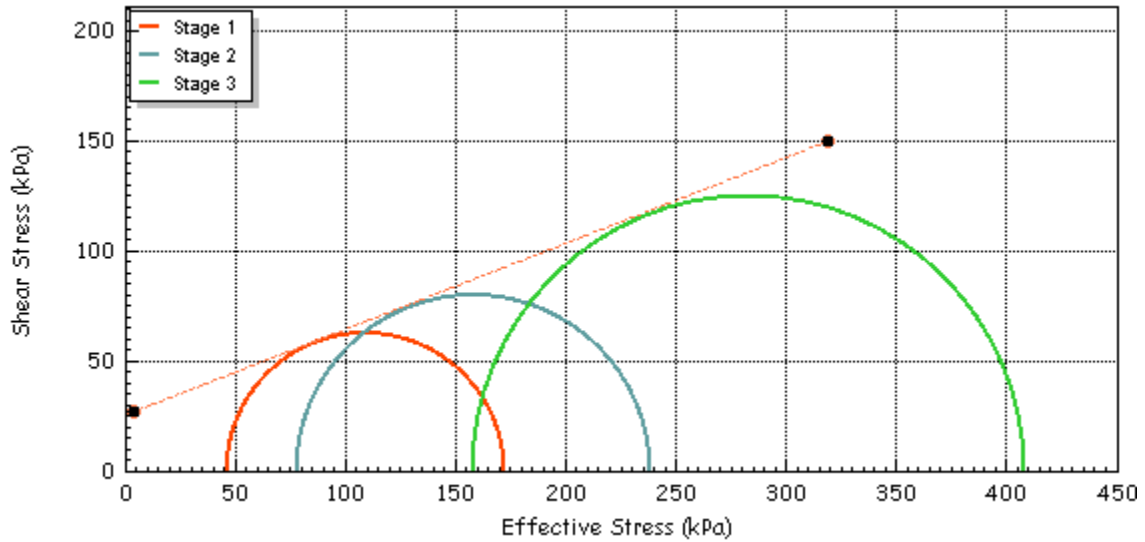
	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	29/11/2022	
	Site Reference		Borehole	ATK_BH03	
	Jobfile	62917	Sample	124	
	Client	SOCOTEC	Depth	10.95-11.30	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	25.02	Effective Cohesion c'	(kPa)	27.46
Effective Friction ϕ'	(deg)	21.4	Effective Friction ϕ'	(deg)	21.2

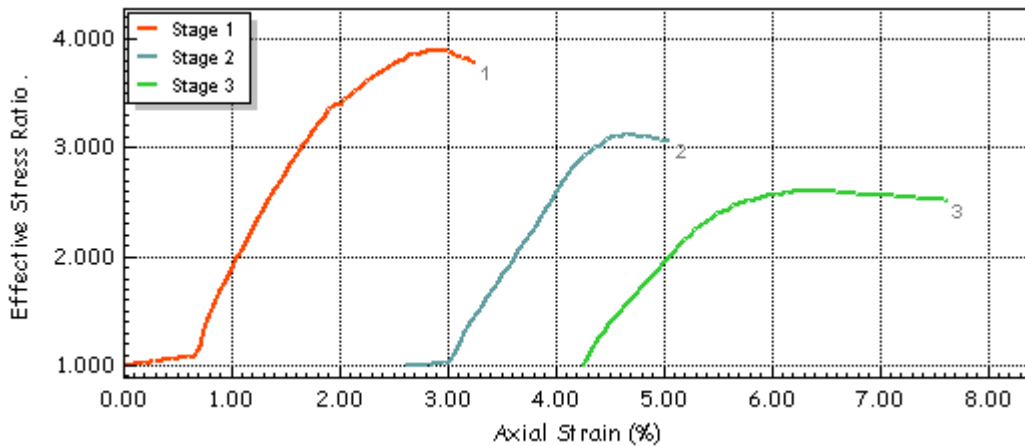
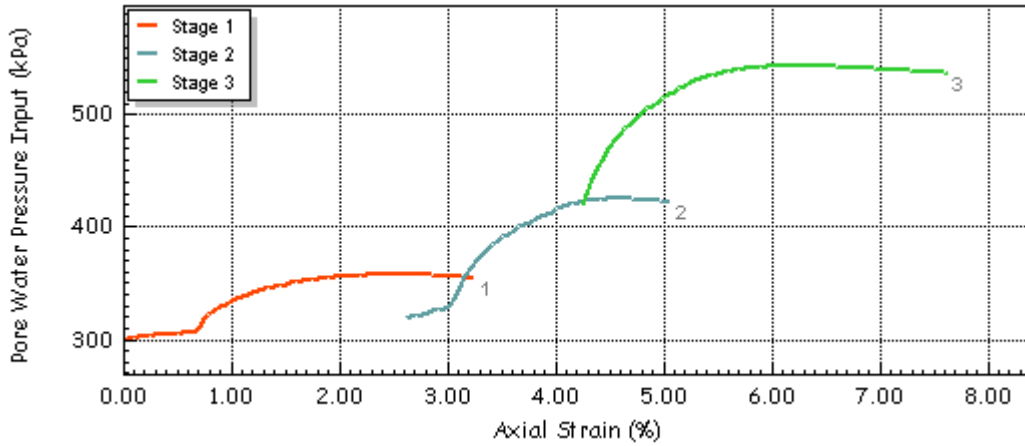
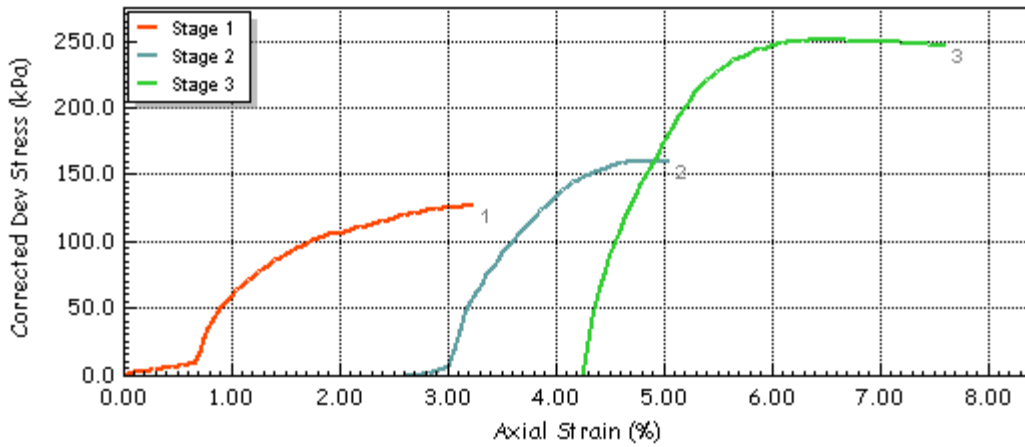


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	29/11/2022	
	Site Reference		Borehole	ATK_BH03	
	Jobfile	62917	Sample	124	
	Client	SOCOTEC	Depth	10.95-11.30	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	29/11/2022	
	Site Reference		Borehole	ATK_BH03	
	Jobfile	62917	Sample	124	
	Client	SOCOTEC	Depth	10.95-11.30	
Operator	██████████	Checked	██████████	Approved	██████████



2788

Laboratory Report



Contract Number: 63583

Client Ref: **H2060-22**

Client PO:

Date Received: **22-12-2022**

Date Completed: **23-02-2023**

Report Date: **23-02-2023**

Client: **SOCOTEC**

Unit 15

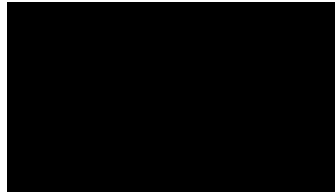
Crosby Yard Industrial Estate

Wildmill

Bridgend

CF31 1JZ

This report has been checked and approved by:



Director

Contract Title: **Lyneham Banks**

For the attention of:

Test Description	Qty
Determination of water content BS EN ISO 17892-1:2014 - * UKAS	42
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	42
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	42
PSD: Sedimentation by pipette carried out with Wet Sieve (Wet Sieve must also be selected) BS 1377:1990 - Part 2 : 9.4 - * UKAS	40
Quick Undrained Triaxial Compression test - single specimen at one confining pressure (100mm or 38mm diameter) BS 1377:1990 - Part 7 : 8 - * UKAS	27
One-dimensional Consolidation 75mm or 50mm diameter specimens (up to 5 stages/days) BS 1377:1990 - Part 5 : 3 - * UKAS	10
As 5.01, 5.03 & 5.04 each extra additional stage/day BS 1377:1990 - Part 5 : 3	20

Notes: **Observations and Interpretations are outside the UKAS Accreditation**

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (Human Resources/ Health and Safety Manager)

GEO Site & Testing Services Ltd

Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk



2788

Laboratory Report



Contract Number: 63583

Test Description	Qty
CUT 100mm Consolidated undrained triaxial compression test on a Single Specimen with Multistage Loading with the measurement of pore water pressure including saturation and consolidation, test duration FOUR days. PLEASE NOTE IT IS LIKELY THIS TEST WILL INCUR EXTRA OVER DAY CHARGES. BS 1377:1990 - Part 8 : 7 - * UKAS	6
Extra over items for test duration in excess of four days.	231
Samples Received - @ Non Accredited Test	66
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

- * - denotes test included in laboratory scope of accreditation
- # - denotes test carried out by approved contractor
- @ - denotes non accredited tests

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 test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

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 Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)
 Wayne Honey (Human Resources/ Health and Safety Manager)

**Determination of Water Content
BS EN ISO 17892-1:2014**

Contract Number	63583
Project Name	Lyneham Banks
Date Tested	16/01/2023

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Water Content %	Remarks
				-			
ATK_BH11	6	L	2.20	-	3.20	34.5	
ATK_BH11	10	D	4.70	-		21.4	
ATK_BH11	18	D	10.50	-		16.6	
ATK_BH05	102	D	0.80	-		30.9	
ATK_BH05	105	D	1.80	-		50.3	
ATK_BH05	109	D	5.25	-		29.4	
ATK_BH05	112	D	8.10	-	8.20	24.2	
ATK_BH05	120	D	14.20	-	14.30	18.6	
ATK_BH05	126	D	18.60	-	18.70	15.9	
ATK_BH10	103	D	2.00	-		39.5	
ATK_BH10	11	D	4.70	-		35.2	
ATK_BH10	15	D	9.70	-		24.4	
ATK_BH13	4	D	2.40	-	2.50	46.4	
ATK_BH13	8	D	4.00	-	4.50	37.1	
ATK_BH13	12	D	5.40	-	5.50	23.0	
ATK_BH08	4	D	1.20	-		39.7	
ATK_BH08	102	D	2.10	-	2.20	31.7	
ATK_BH08	9	D	3.20	-		33.5	
ATK_BH08	17	D	9.10	-		26.6	
ATK_BH09	7	L	2.65	-	3.20	37.6	
ATK_BH09	106	D	6.70	-	6.80	33.4	
ATK_BH09	21	D	12.90	-		28.2	
ATK_BH12	102	D	1.90	-	2.00	52.1	
ATK_BH12	104	D	3.90	-	4.00	46.3	
ATK_BH12	105	D	4.90	-	5.00	36.5	
ATK_BH12	109	D	7.90	-	8.00	19.6	
ATK_BH16	103	D	1.40	-	1.50	38.8	
ATK_BH16	2	D	2.45	-	2.50	34.6	
ATK_BH16	3	D	4.45	-	4.50	30.8	
ATK_BH16	10	D	8.15	-	8.20	27.5	
ATK_BH04	2	L	1.00	-	2.00	36.6	
ATK_BH04	5	L	2.00	-	3.00	41.9	
ATK_BH04	9	L	4.00	-	5.00	34.8	
ATK_BH04	11	L	5.70	-	6.00	29.1	
ATK_BH04	107	D	7.60	-		28.6	
ATK_BH04	111	D	9.70	-		29.3	
ATKRD_BH01	102	D	2.00	-		30.8	
ATKRD_BH01	104	D	4.00	-		28.8	
ATKRD_BH01	113	D	12.10	-	12.20	19.6	
ATK_BH15	102	D	2.00	-		36.4	
ATK_BH15	10	D	4.45	-	4.50	27.3	
ATK_BH15	114	D	13.50	-		19.5	
				-			
				-			
				-			
				-			
				-			


*For sample descriptions please see sample descriptions sheet

Operator


**NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND
PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)**

Contract Number	63583
Project Name	Lyneham Banks
Date Tested	16/01/2023
DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
ATK_BH11	6	L	2.20	-	3.20	Grey brown fine to coarse sandy fine gravelly silty CLAY
ATK_BH11	10	D	4.70	-		Brown slightly fine gravelly fine to coarse sandy silty CLAY
ATK_BH11	18	D	10.50	-		Grey slightly fine gravelly fine to coarse sandy silty CLAY
ATK_BH05	102	D	0.80	-		Brown fine to medium gravelly fine to coarse sandy silty CLAY
ATK_BH05	105	D	1.80	-		Brown fine gravelly fine to coarse sandy clayey SILT
ATK_BH05	109	D	5.25	-		Brown fine to coarse sandy fine gravelly silty CLAY
ATK_BH05	112	D	8.10	-	8.20	Grey fine to coarse gravelly fine to coarse sandy silty CLAY
ATK_BH05	120	D	14.20	-	14.30	Grey slightly gravelly fine to coarse sandy silty CLAY
ATK_BH05	126	D	18.60	-	18.70	Grey brown fine to coarse sandy silty CLAY
ATK_BH10	103	D	2.00	-		Light brown slightly sandy fine gravelly silty CLAY
ATK_BH10	11	D	4.70	-		Brown fine to coarse gravelly fine to coarse sandy silty CLAY
ATK_BH10	15	D	9.70	-		Grey fine to coarse sandy silty CLAY
ATK_BH13	4	D	2.40	-	2.50	Brown fine gravelly fine to coarse sandy clayey SILT
ATK_BH13	8	D	4.00	-	4.50	Brown fine to coarse sandy fine to medium gravelly silty CLAY
ATK_BH13	12	D	5.40	-	5.50	Light brown slightly fine to medium gravelly fine to coarse sandy silty CLAY
ATK_BH08	4	D	1.20	-		Brown silty fine to medium gravelly clayey fine to coarse SAND
ATK_BH08	102	D	2.10	-	2.20	Brown slightly sandy gravelly silty CLAY
ATK_BH08	9	D	3.20	-		Brown fine to coarse sandy fine gravelly silty CLAY
ATK_BH08	17	D	9.10	-		Grey chalky fine to medium gravelly fine to coarse sandy silty CLAY
ATK_BH09	7	L	2.65	-	3.20	Brown slightly fine gravelly fine to coarse sandy silty CLAY
ATK_BH09	106	D	6.70	-	6.80	Brown fine to coarse sandy silty CLAY
ATK_BH09	21	D	12.90	-		Brown slightly gravelly fine to coarse sandy silty CLAY
ATK_BH12	102	D	1.90	-	2.00	Brown slightly gravelly fine to coarse sandy clayey SILT
ATK_BH12	104	D	3.90	-	4.00	Brown slightly gravelly fine to coarse sandy silty CLAY

Operator


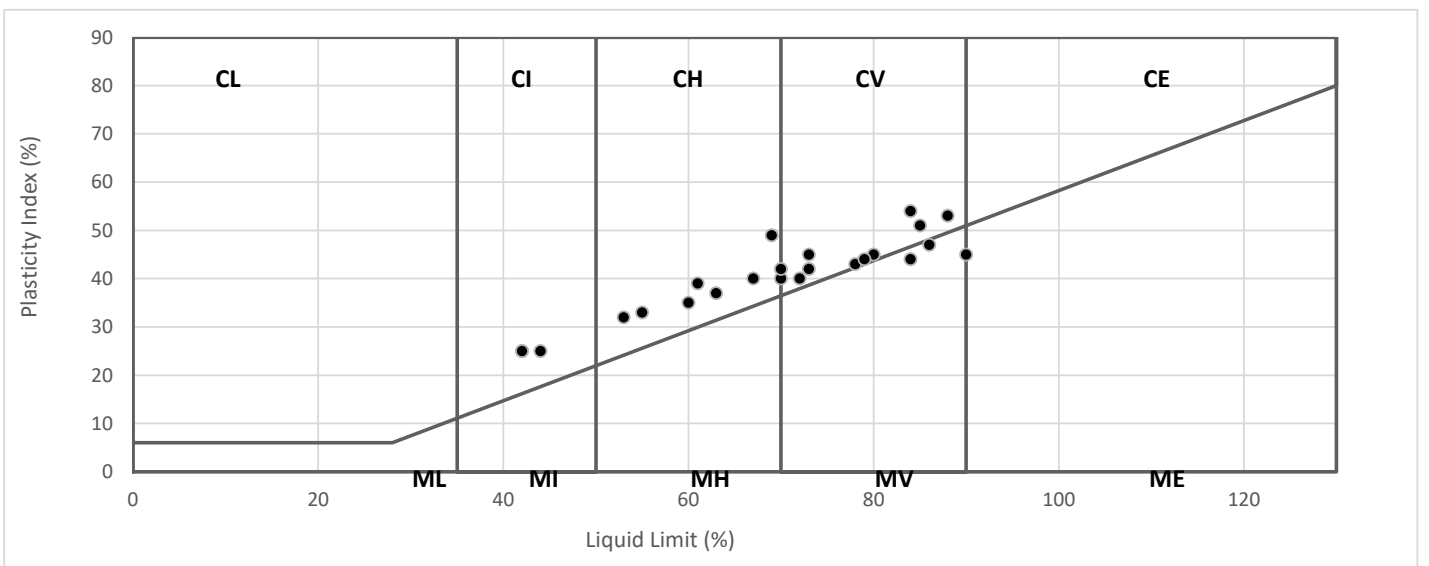
NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)

Contract Number	63583
Project Name	Lyneham Banks
Date Tested	16/01/2023

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)		Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks	
ATK_BH11	6	L	2.20	-	3.20		70	30	40	81	CH/V High/HighPlasticity
ATK_BH11	10	D	4.70	-			69	20	49	91	CH High Plasticity
ATK_BH11	18	D	10.50	-			44	19	25	92	CI Intermediate Plasticity
ATK_BH05	102	D	0.80	-			73	28	45	78	CV Very High Plasticity
ATK_BH05	105	D	1.80	-			90	45	45	89	/E Very/Extremely High Plasti
ATK_BH05	109	D	5.25	-			70	28	42	84	CH/V High/HighPlasticity
ATK_BH05	112	D	8.10	-	8.20		53	21	32	75	CH High Plasticity
ATK_BH05	120	D	14.20	-	14.30		42	17	25	94	CI Intermediate Plasticity
ATK_BH05	126	D	18.60	-	18.70		42	17	25	95	CI Intermediate Plasticity
ATK_BH10	103	D	2.00	-			80	35	45	91	CV Very High Plasticity
ATK_BH10	11	D	4.70	-			72	32	40	68	CV Very High Plasticity
ATK_BH10	15	D	9.70	-			63	26	37	95	CH High Plasticity
ATK_BH13	4	D	2.40	-	2.50		86	39	47	88	MV Very High Plasticity
ATK_BH13	8	D	4.00	-	4.50		88	35	53	88	CV Very High Plasticity
ATK_BH13	12	D	5.40	-	5.50		55	22	33	94	CH High Plasticity
ATK_BH08	4	D	1.20	-			78	35	43	59	CV Very High Plasticity
ATK_BH08	102	D	2.10	-	2.20		67	27	40	98	CH High Plasticity
ATK_BH08	9	D	3.20	-			84	30	54	86	CV Very High Plasticity
ATK_BH08	17	D	9.10	-			61	22	39	74	CH High Plasticity
ATK_BH09	7	L	2.65	-	3.20		79	35	44	89	CV Very High Plasticity
ATK_BH09	106	D	6.70	-	6.80		73	31	42	97	CV Very High Plasticity
ATK_BH09	21	D	12.90	-			60	25	35	95	CH High Plasticity
ATK_BH12	102	D	1.90	-	2.00		84	40	44	89	MV Very High Plasticity
ATK_BH12	104	D	3.90	-	4.00		85	34	51	95	CV Very High Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:2015+A1:2020



Operator
[Redacted]



**NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND
PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)**

Contract Number	63583
Project Name	Lyneham Banks
Date Tested	16/01/2023
	DESCRIPTIONS

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
ATK_BH12	105	D	4.90	-	5.00	Brown fine to coarse sandy fine gravelly silty CLAY
ATK_BH12	109	D	7.90	-	8.00	Grey fine gravelly fine to coarse sandy silty CLAY
ATK_BH16	103	D	1.40	-	1.50	Brown slightly sandy fine gravelly silty CLAY
ATK_BH16	2	D	2.45	-	2.50	Brown fine to coarse sandy clayey SILT
ATK_BH16	3	D	4.45	-	4.50	Brown fine to coarse sandy silty CLAY
ATK_BH16	10	D	8.15	-	8.20	Brown fine to coarse sandy silty CLAY
ATK_BH04	2	L	1.00	-	2.00	Brown silty/clayeyfine to medium gravelly fine to coarse SAND
ATK_BH04	5	L	2.00	-	3.00	Brown silty/clayey fine to medium gravelly fine to coarse SAND
ATK_BH04	9	L	4.00	-	5.00	Brown slightly fine gravelly fine to coarse sandy silty CLAY
ATK_BH04	11	L	5.70	-	6.00	Green fine gravelly fine to coarse sandy silty CLAY
ATK_BH04	107	D	7.60	-		Grey silty clayey fine to coarse SAND
ATK_BH04	111	D	9.70	-		Brown fine to coarse sandy silty CLAY
ATKRD_BH01	102	D	2.00	-		Brown fine to coarse sandy fine gravelly silty CLAY
ATKRD_BH01	104	D	4.00	-		Brown chalky fine to coarse sandy silty CLAY
ATKRD_BH01	113	D	12.10	-	12.20	Grey brown slightly gravelly fine to coarse sandy silty CLAY
ATK_BH15	102	D	2.00	-		Grey fine to coarse sandy silty CLAY
ATK_BH15	10	D	4.45	-	4.50	Brown slightly fine to medium gravelly fine to coarse sandy silty CLAY
ATK_BH15	114	D	13.50	-		Grey fine to coarse sandy silty CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		

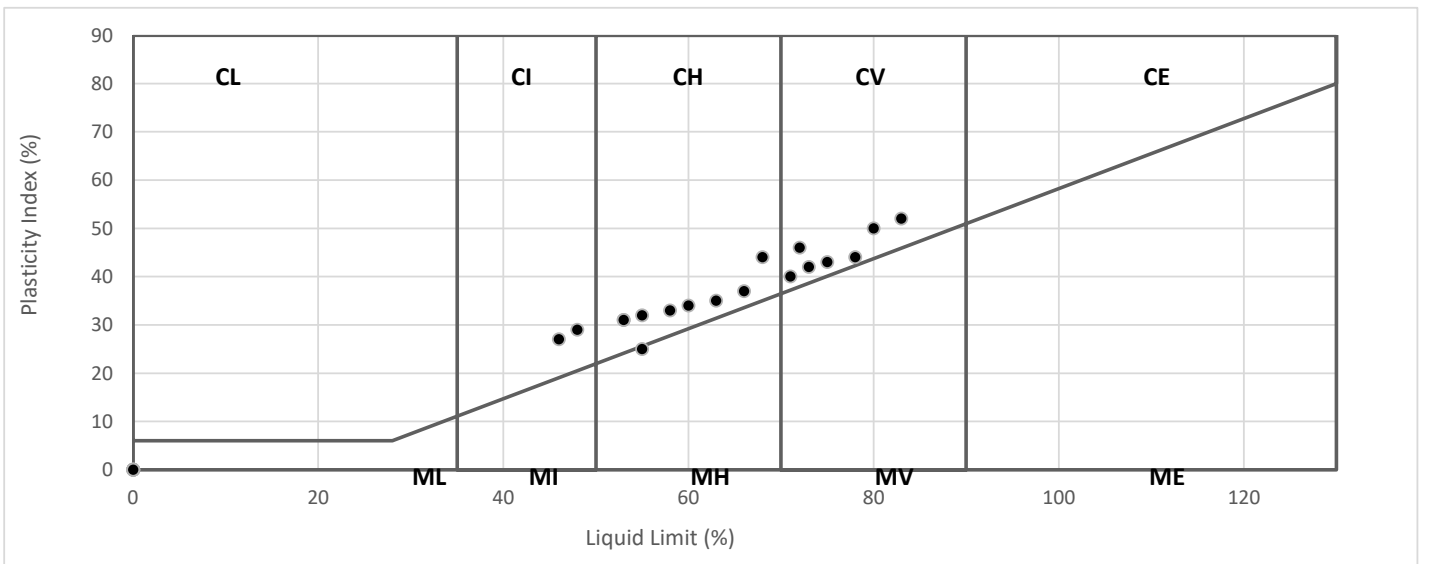
Operator
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Contract Number	63583
Project Name	Lyneham Banks
Date Tested	16/01/2023

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
ATK_BH12	105	D	4.90	-	5.00		78	34	44	89	CV Very High Plasticity
ATK_BH12	109	D	7.90	-	8.00		48	19	29	75	CI Intermediate Plasticity
ATK_BH16	103	D	1.40	-	1.50		80	30	50	90	CV Very High Plasticity
ATK_BH16	2	D	2.45	-	2.50		55	30	25	96	MH High Plasticity
ATK_BH16	3	D	4.45	-	4.50		63	28	35	95	CH High Plasticity
ATK_BH16	10	D	8.15	-	8.20		58	25	33	99	CH High Plasticity
ATK_BH04	2	L	1.00	-	2.00		73	31	42	40	CV Very High Plasticity
ATK_BH04	5	L	2.00	-	3.00		71	31	40	41	CV Very High Plasticity
ATK_BH04	9	L	4.00	-	5.00		66	29	37	88	CH High Plasticity
ATK_BH04	11	L	5.70	-	6.00		60	26	34	72	CH High Plasticity
ATK_BH04	107	D	7.60	-			72	26	46	83	CV Very High Plasticity
ATK_BH04	111	D	9.70	-			55	23	32	97	CH High Plasticity
ATKRD_BH01	102	D	2.00	-			83	31	52	77	CV Very High Plasticity
ATKRD_BH01	104	D	4.00	-			68	24	44	91	CH High Plasticity
ATKRD_BH01	113	D	12.10	-	12.20		46	19	27	94	CI Intermediate Plasticity
ATK_BH15	102	D	2.00	-			75	32	43	99	CV Very High Plasticity
ATK_BH15	10	D	4.45	-	4.50		53	22	31	90	CH High Plasticity
ATK_BH15	114	D	13.50	-			53	22	31	98	CH High Plasticity
				-							
				-							
				-							
				-							
				-							
				-							
				-							

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:2015+A1:2020



Operator
[Redacted]

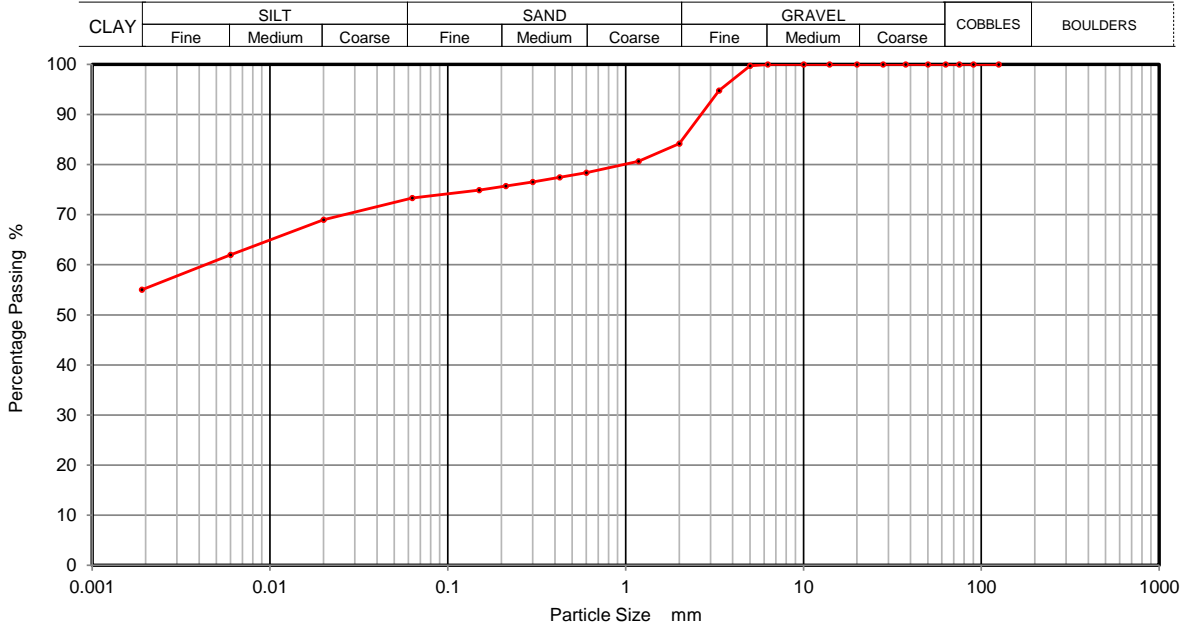




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATKRD_BH01
Sample No.	102
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	69
90	100	0.0060	62
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	95		
2	84		
1.18	81		
0.6	78		
0.425	77		
0.3	77		
0.212	76		
0.15	75		
0.063	73		

Sample Proportions	% dry mass
Cobbles	0
Gravel	16
Sand	11
Silt	18
Clay	55

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



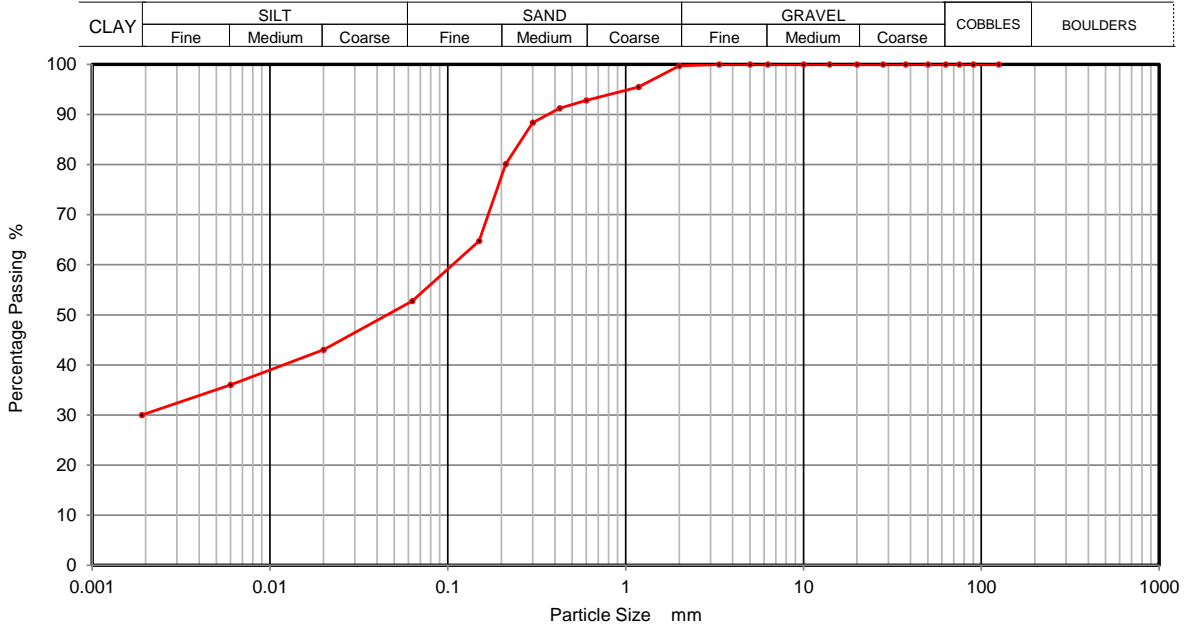
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATKRD_BH01
Sample No.	104
Depth Top	4.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	43
90	100	0.0060	36
75	100	0.0020	30
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	95		
0.6	93		
0.425	91		
0.3	88		
0.212	80		
0.15	65		
0.063	53		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	47
Silt	23
Clay	30

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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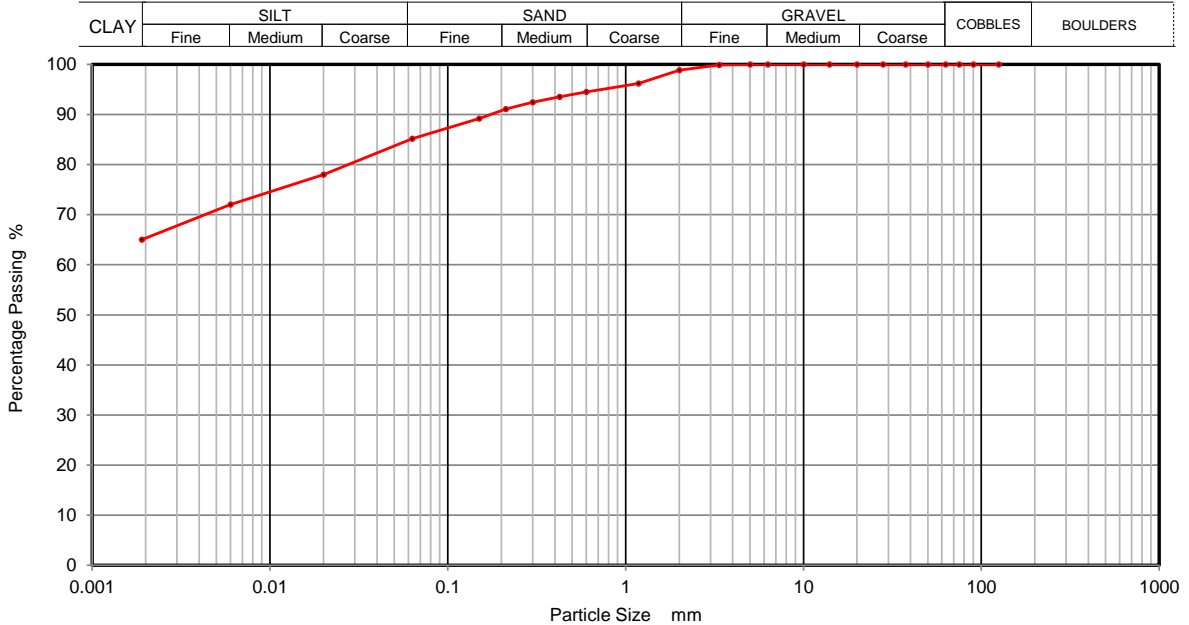
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATKRD_BH01
Sample No.	113
Depth Top	12.10
Depth Base	12.20
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	78
90	100	0.0060	72
75	100	0.0020	65
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	96		
0.6	94		
0.425	94		
0.3	92		
0.212	91		
0.15	89		
0.063	85		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	14
Silt	20
Clay	65

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



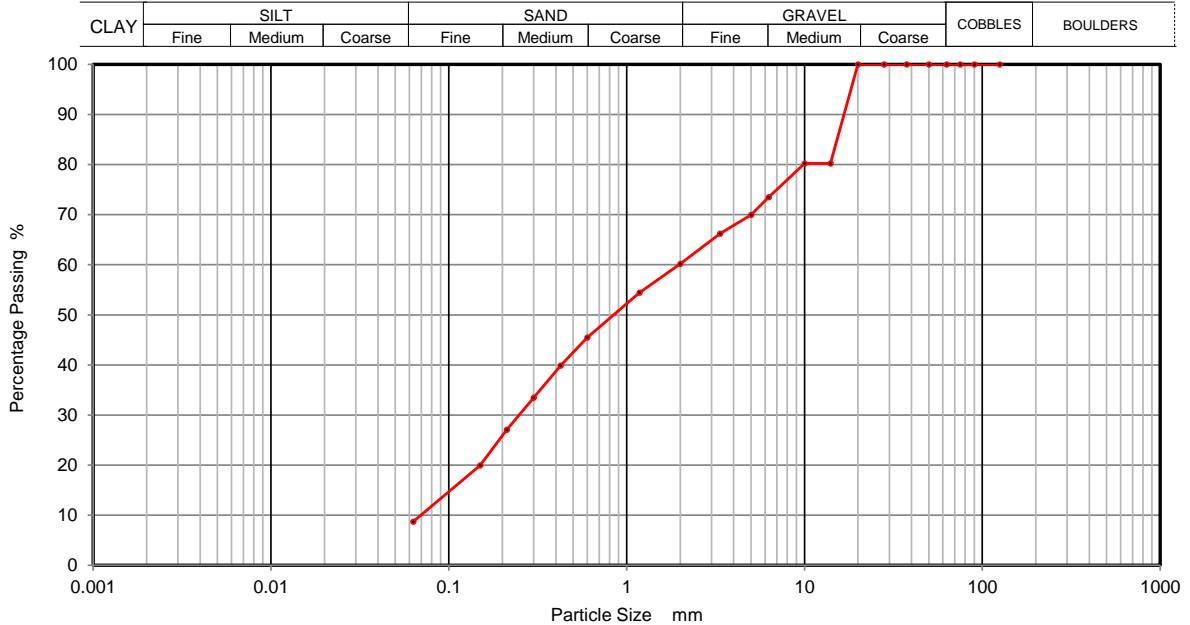
2788



**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

Contract Number	63583
Borehole/Pit No.	ATK_BH04
Sample No.	2
Depth Top	1.00
Depth Base	2.00
Sample Type	L

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	80		
10	80		
6.3	74		
5	70		
3.35	66		
2	60		
1.18	54		
0.6	45		
0.425	40		
0.3	33		
0.212	27		
0.15	20		
0.063	9		

Sample Proportions	% dry mass
Cobbles	0
Gravel	40
Sand	51
Silt and Clay	9

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



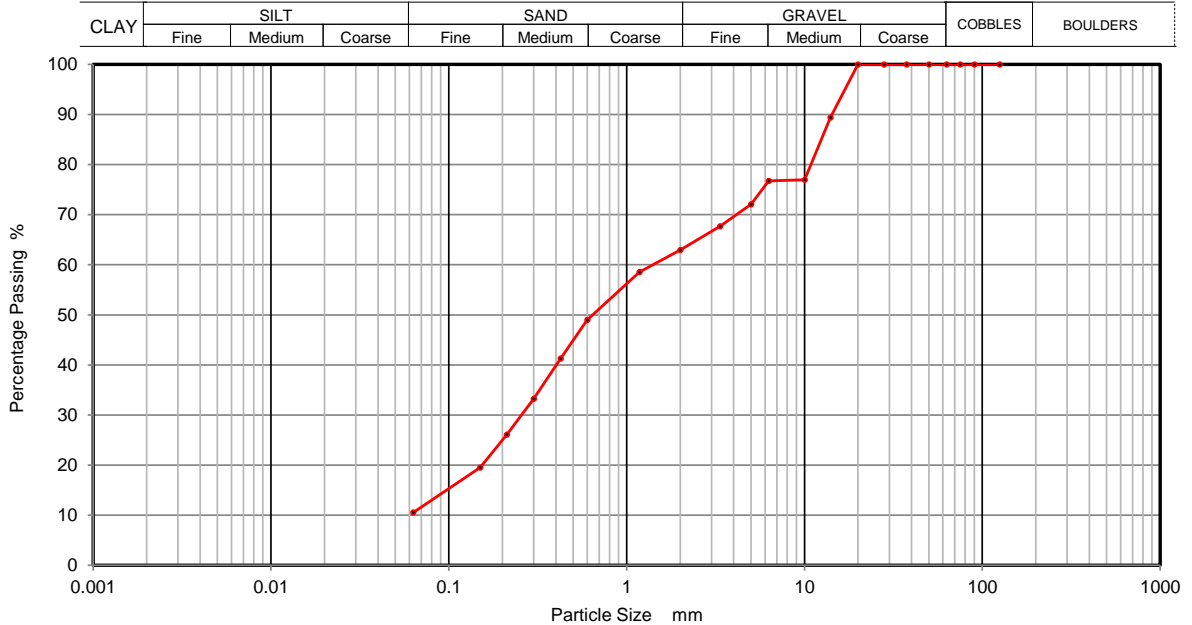
2788



**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

Contract Number	63583
Borehole/Pit No.	ATK_BH04
Sample No.	5
Depth Top	2.00
Depth Base	3.00
Sample Type	L

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	89		
10	77		
6.3	77		
5	72		
3.35	68		
2	63		
1.18	59		
0.6	49		
0.425	41		
0.3	33		
0.212	26		
0.15	20		
0.063	11		

Sample Proportions	% dry mass
Cobbles	0
Gravel	37
Sand	52
Silt and Clay	11

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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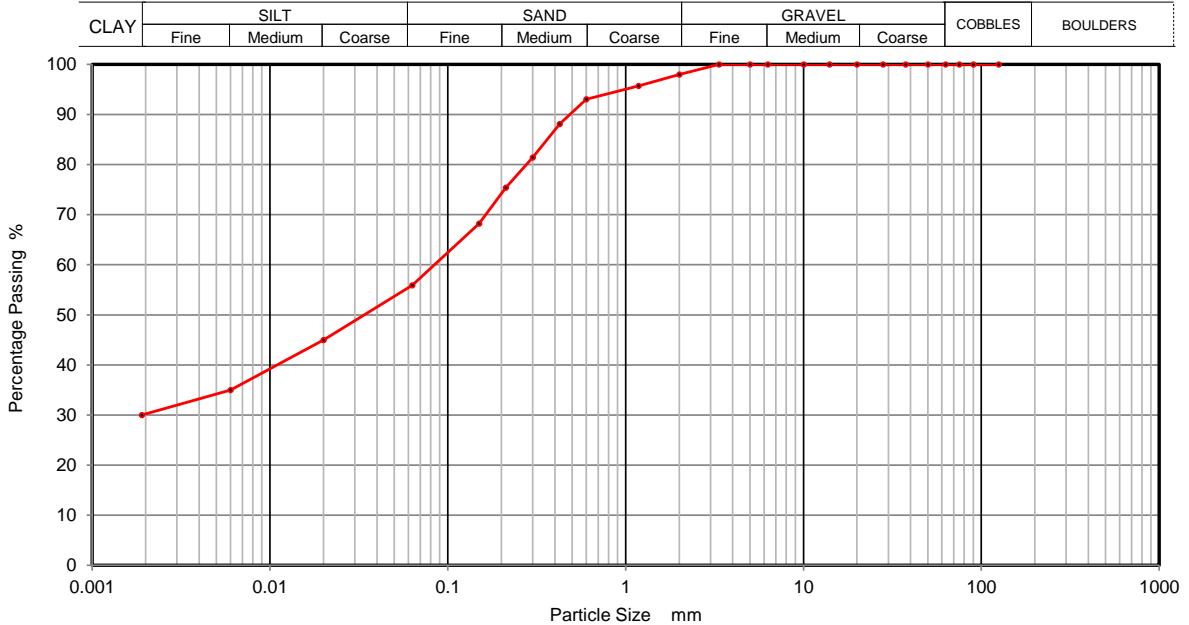
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH04
Sample No.	9
Depth Top	4.00
Depth Base	5.00
Sample Type	L

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	45
90	100	0.0060	35
75	100	0.0020	30
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	98		
1.18	96		
0.6	93		
0.425	88		
0.3	81		
0.212	75		
0.15	68		
0.063	56		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	42
Silt	26
Clay	30

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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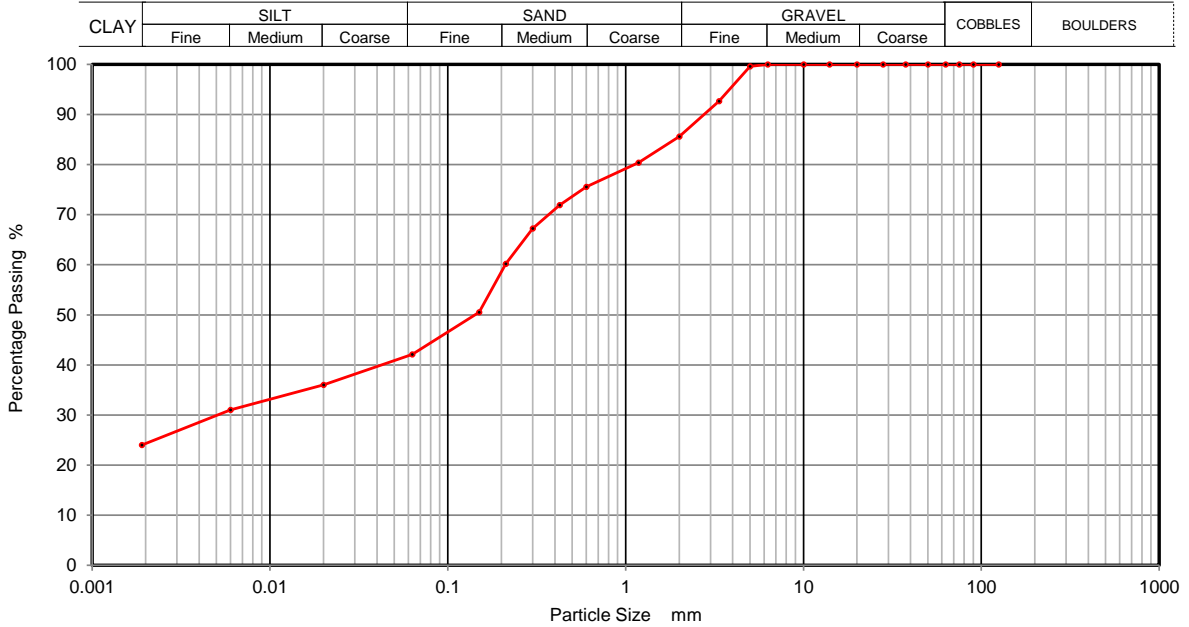
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	63583
Borehole/Pit No.	ATK_BH04
Sample No.	11
Depth Top	5.70
Depth Base	6.00
Sample Type	L

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	36
90	100	0.0060	31
75	100	0.0020	24
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	93		
2	86		
1.18	80		
0.6	76		
0.425	72		
0.3	67		
0.212	60		
0.15	51		
0.063	42		

Sample Proportions	% dry mass
Cobbles	0
Gravel	14
Sand	44
Silt	18
Clay	24

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator



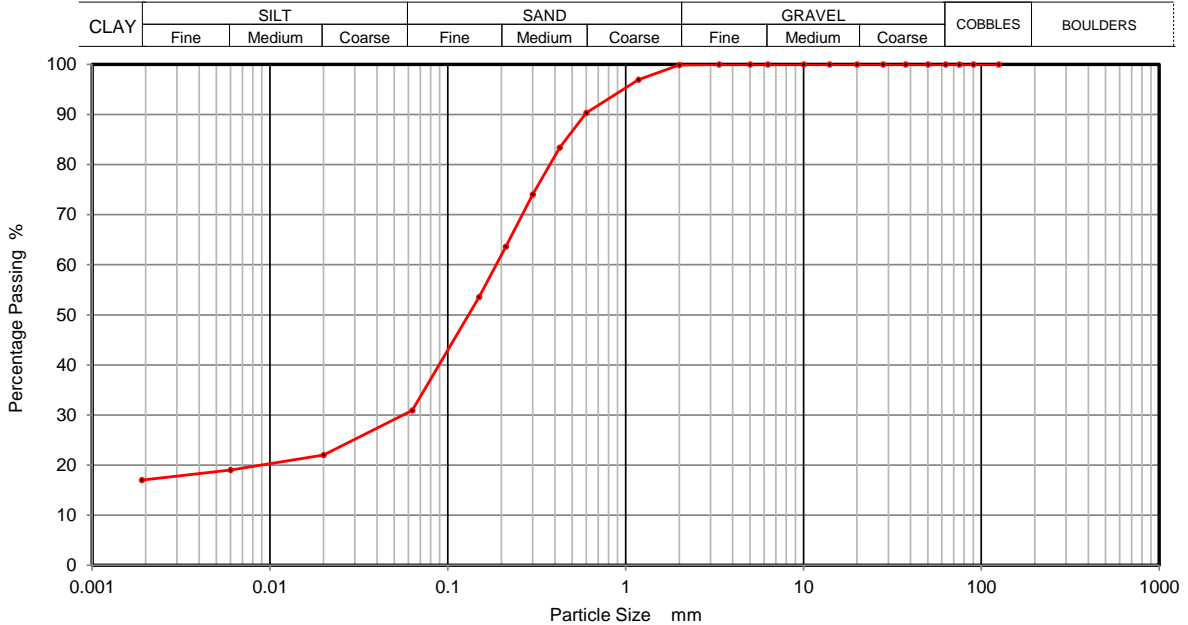
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH04
Sample No.	107
Depth Top	7.60
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	22
90	100	0.0060	19
75	100	0.0020	17
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	97		
0.6	90		
0.425	83		
0.3	74		
0.212	64		
0.15	54		
0.063	31		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	69
Silt	14
Clay	17

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



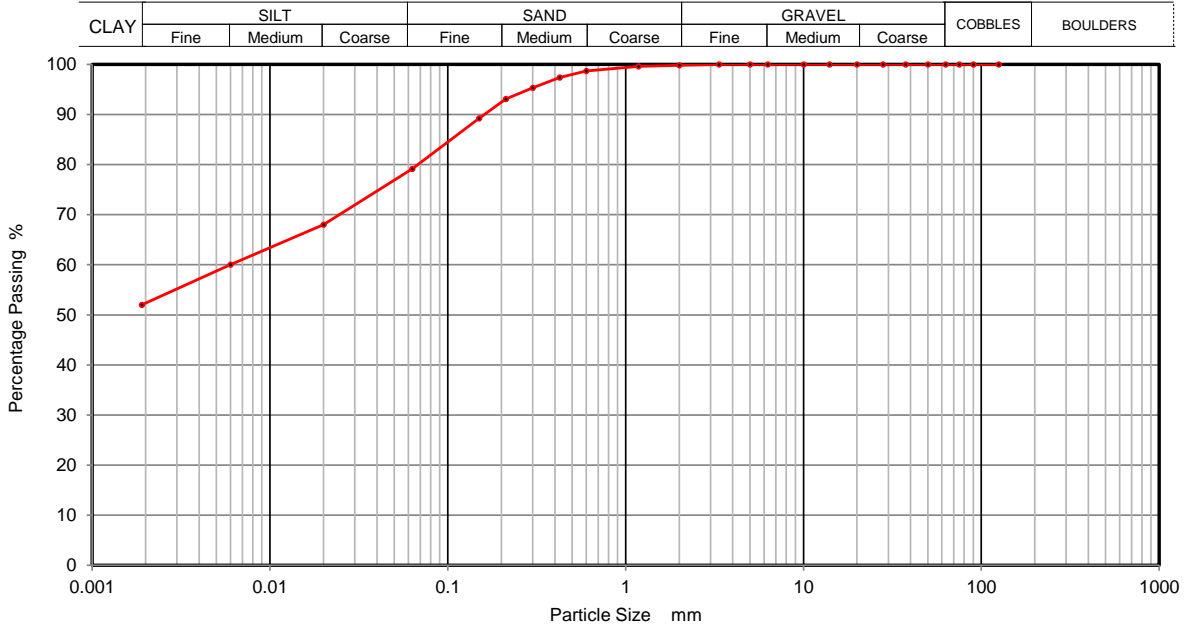
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH04
Sample No.	111
Depth Top	9.70
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	68
90	100	0.0060	60
75	100	0.0020	52
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	97		
0.3	95		
0.212	93		
0.15	89		
0.063	79		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	21
Silt	27
Clay	52

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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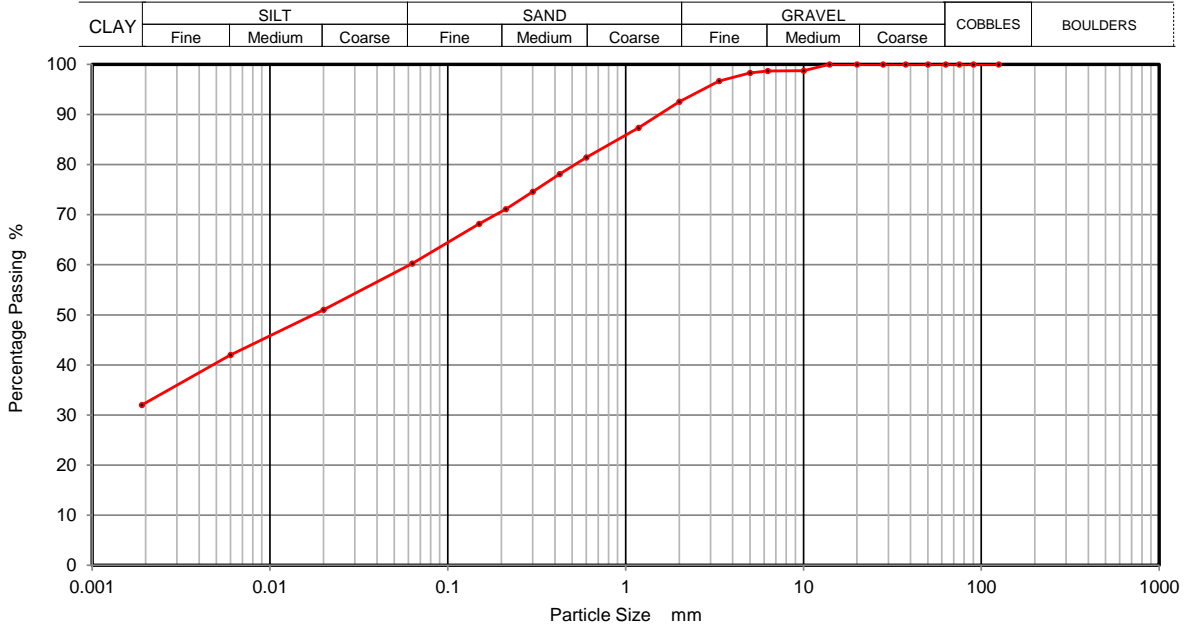
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH05
Sample No.	102
Depth Top	0.80
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	51
90	100	0.0060	42
75	100	0.0020	32
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	98		
3.35	97		
2	93		
1.18	87		
0.6	81		
0.425	78		
0.3	75		
0.212	71		
0.15	68		
0.063	60		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	33
Silt	28
Clay	32

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



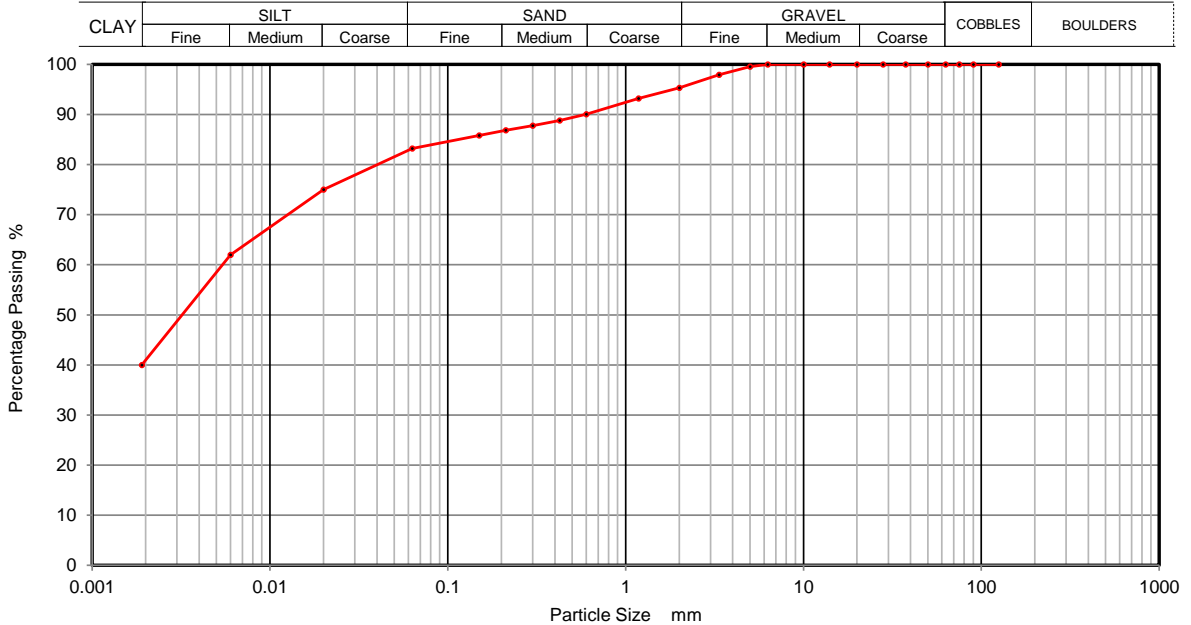
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	63583
Borehole/Pit No.	ATK_BH05
Sample No.	105
Depth Top	1.80
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	75
90	100	0.0060	62
75	100	0.0020	40
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	98		
2	95		
1.18	93		
0.6	90		
0.425	89		
0.3	88		
0.212	87		
0.15	86		
0.063	83		

Sample Proportions	% dry mass
Cobbles	0
Gravel	5
Sand	12
Silt	43
Clay	40

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator



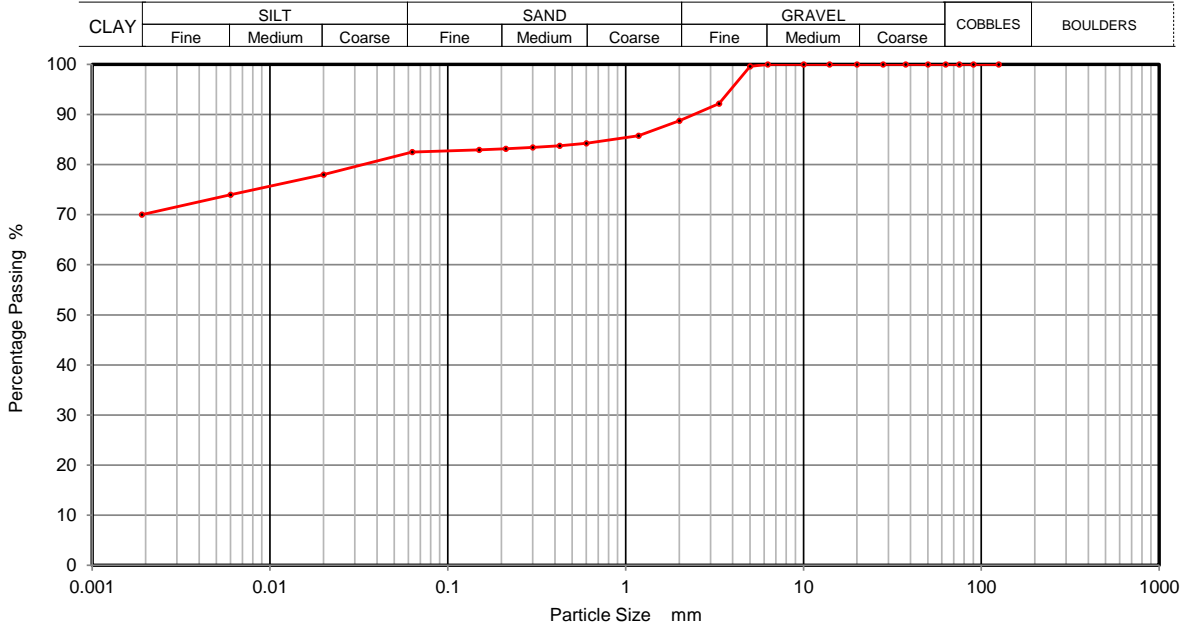
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH05
Sample No.	108
Depth Top	5.25
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	78
90	100	0.0060	74
75	100	0.0020	70
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	92		
2	89		
1.18	86		
0.6	84		
0.425	84		
0.3	83		
0.212	83		
0.15	83		
0.063	83		

Sample Proportions	% dry mass
Cobbles	0
Gravel	11
Sand	6
Silt	13
Clay	70

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



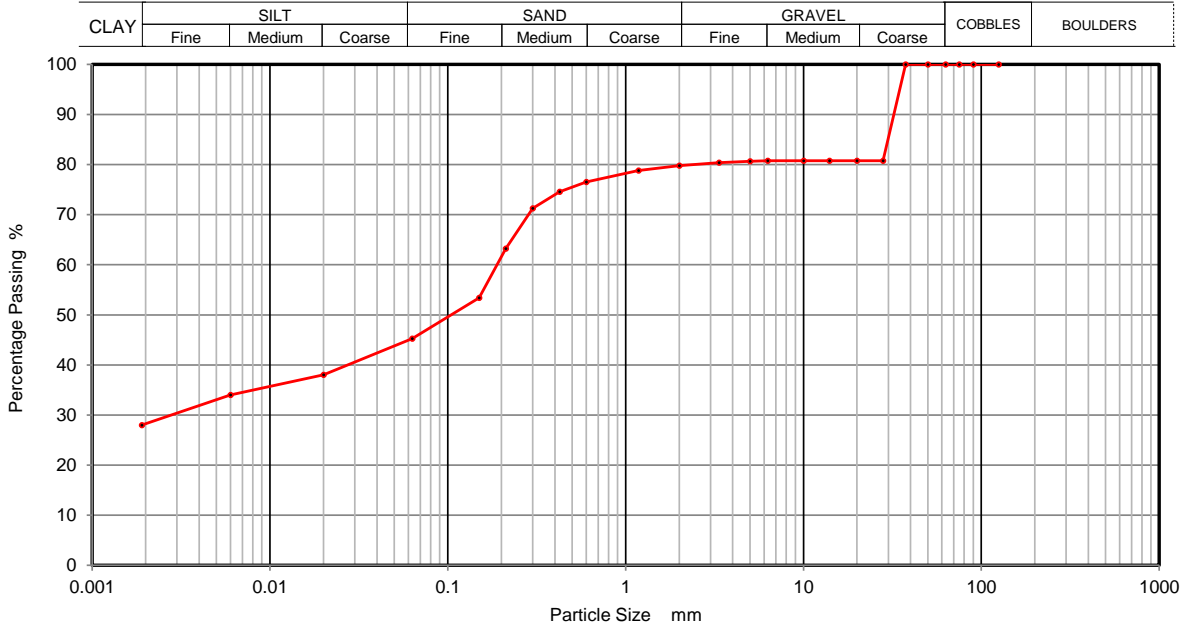
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH05
Sample No.	112
Depth Top	8.10
Depth Base	8.20
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	38
90	100	0.0060	34
75	100	0.0020	28
63	100		
50	100		
37.5	100		
28	81		
20	81		
14	81		
10	81		
6.3	81		
5	81		
3.35	80		
2	80		
1.18	79		
0.6	77		
0.425	75		
0.3	71		
0.212	63		
0.15	53		
0.063	45		

Sample Proportions	% dry mass
Cobbles	0
Gravel	20
Sand	35
Silt	17
Clay	28

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



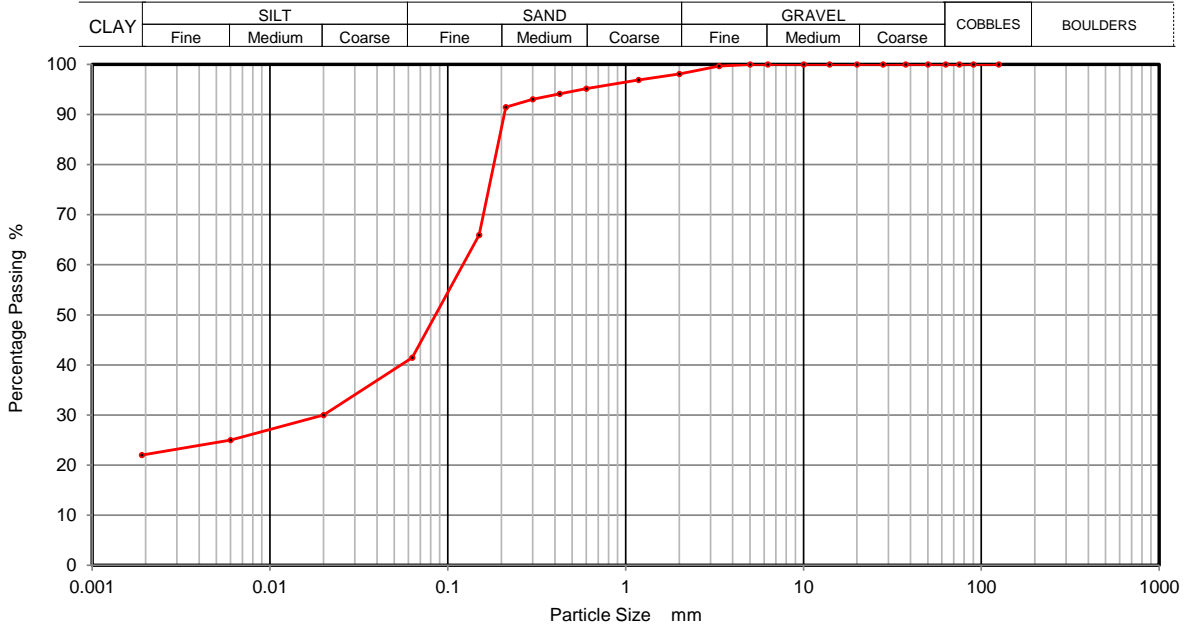
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH05
Sample No.	120
Depth Top	14.20
Depth Base	14.30
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	30
90	100	0.0060	25
75	100	0.0020	22
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	98		
1.18	97		
0.6	95		
0.425	94		
0.3	93		
0.212	91		
0.15	66		
0.063	41		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	57
Silt	19
Clay	22

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



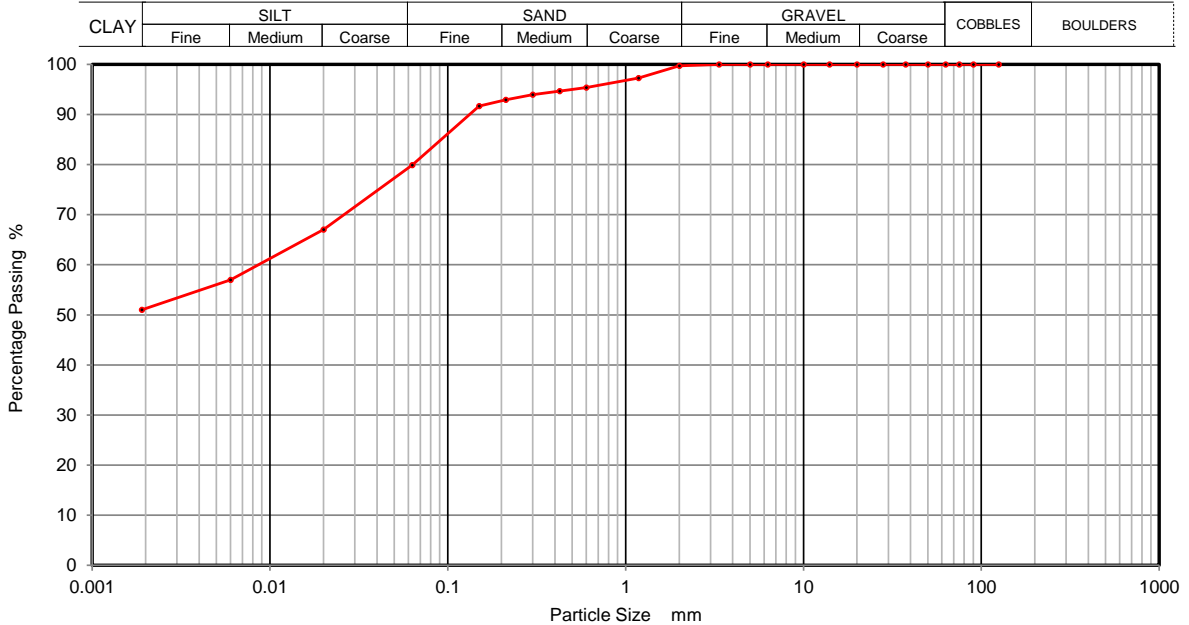
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH05
Sample No.	126
Depth Top	18.60
Depth Base	18.70
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	67
90	100	0.0060	57
75	100	0.0020	51
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	97		
0.6	95		
0.425	95		
0.3	94		
0.212	93		
0.15	92		
0.063	80		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	20
Silt	29
Clay	51

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



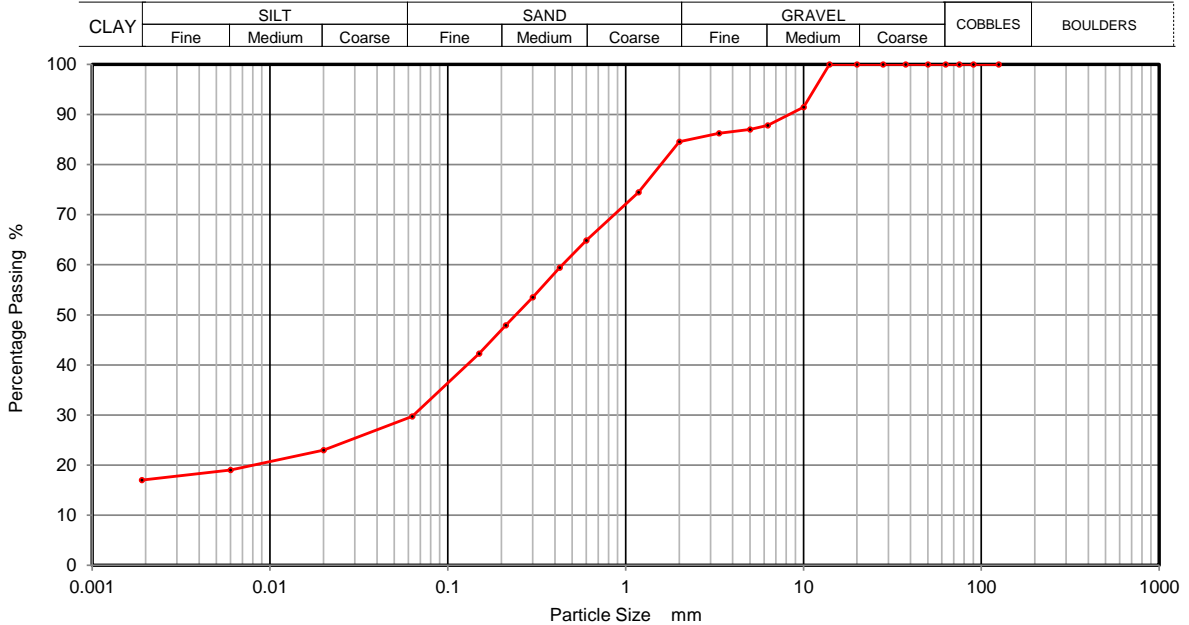
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH08
Sample No.	4
Depth Top	1.20
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	23
90	100	0.0060	19
75	100	0.0020	17
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	91		
6.3	88		
5	87		
3.35	86		
2	85		
1.18	74		
0.6	65		
0.425	59		
0.3	54		
0.212	48		
0.15	42		
0.063	30		

Sample Proportions	% dry mass
Cobbles	0
Gravel	15
Sand	55
Silt	13
Clay	17

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



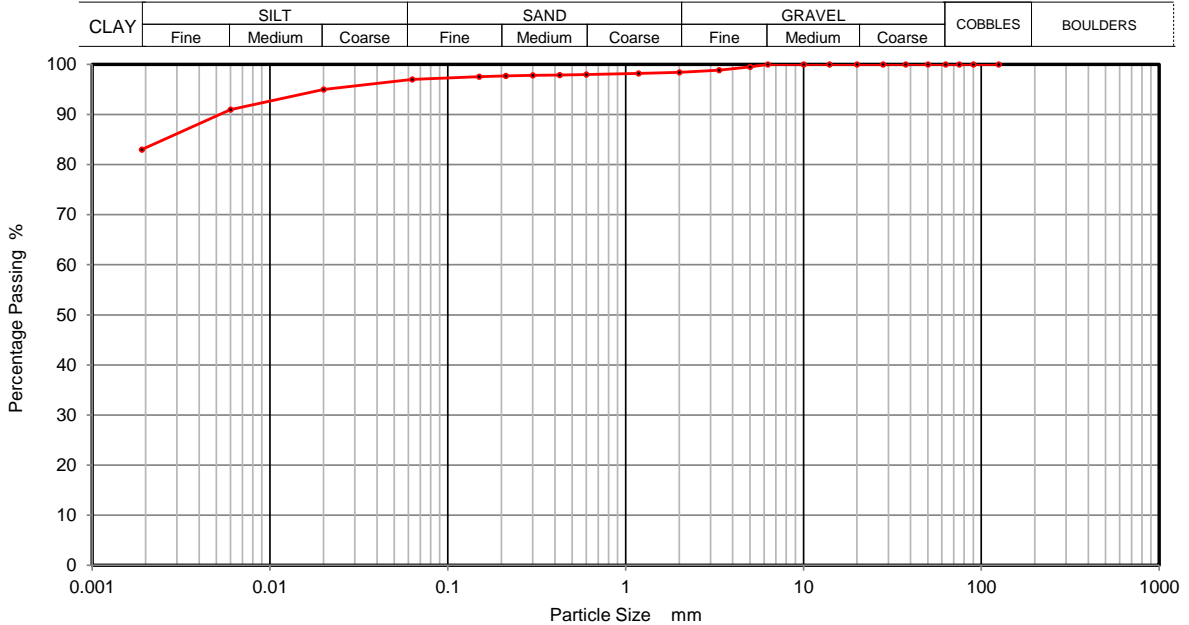
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH08
Sample No.	102
Depth Top	2.10
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	95
90	100	0.0060	91
75	100	0.0020	83
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	99		
2	98		
1.18	98		
0.6	98		
0.425	98		
0.3	98		
0.212	98		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	1
Silt	14
Clay	83

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



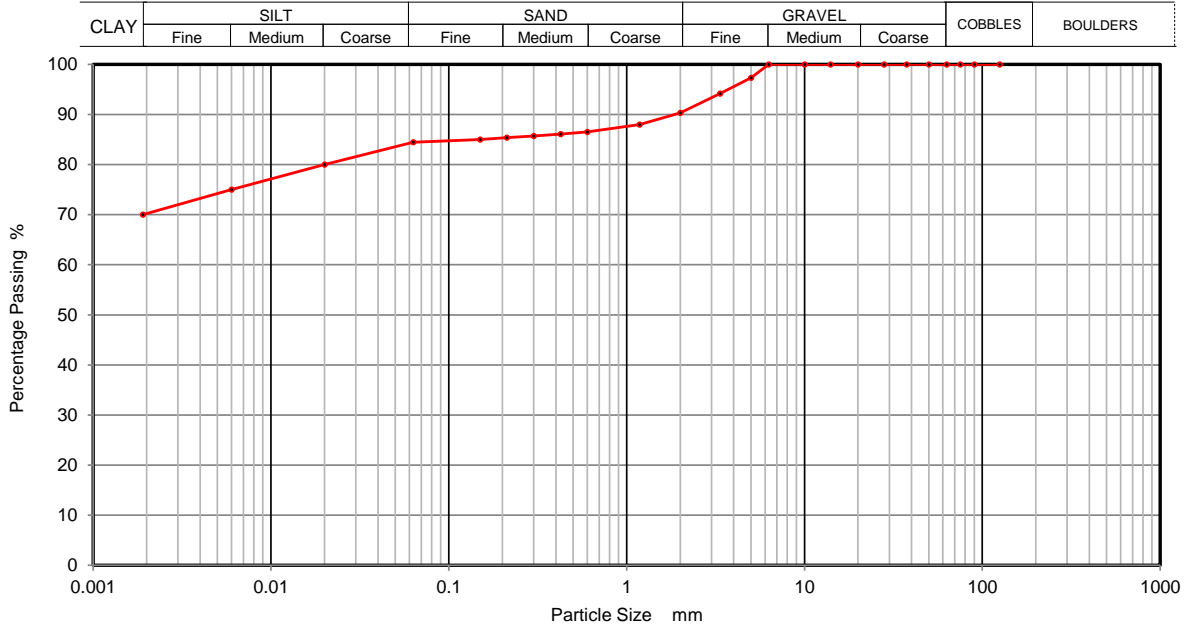
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH08
Sample No.	9
Depth Top	3.20
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	80
90	100	0.0060	75
75	100	0.0020	70
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	97		
3.35	94		
2	90		
1.18	88		
0.6	87		
0.425	86		
0.3	86		
0.212	85		
0.15	85		
0.063	84		

Sample Proportions	% dry mass
Cobbles	0
Gravel	10
Sand	6
Silt	14
Clay	70

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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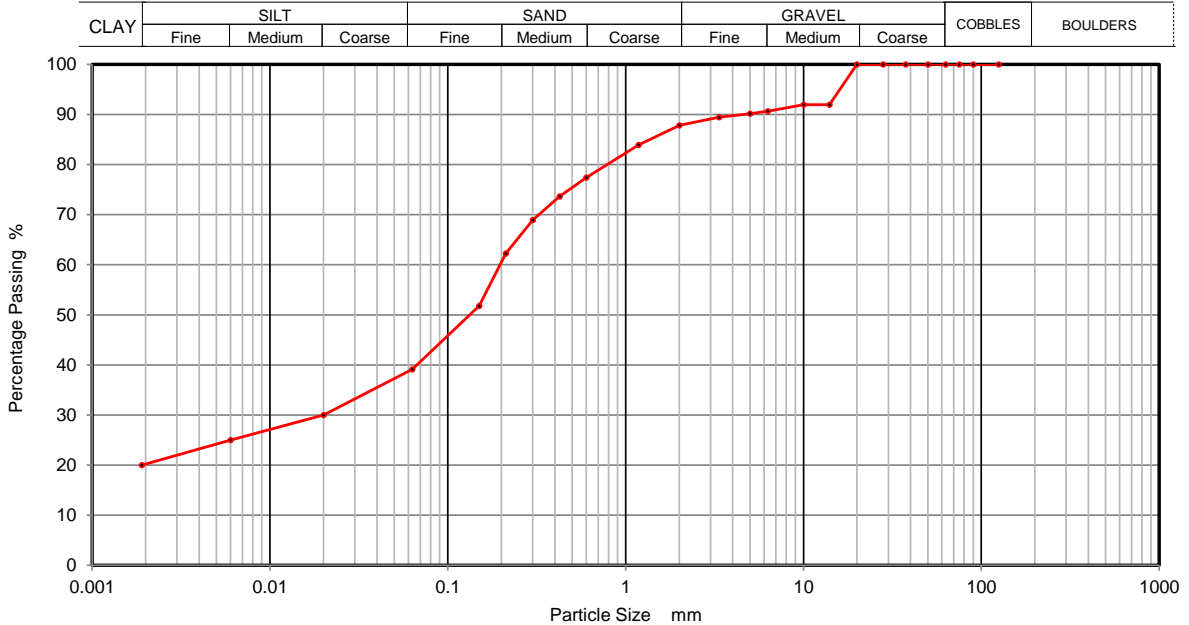
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH08
Sample No.	17
Depth Top	9.10
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	30
90	100	0.0060	25
75	100	0.0020	20
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	92		
10	92		
6.3	91		
5	90		
3.35	89		
2	88		
1.18	84		
0.6	77		
0.425	74		
0.3	69		
0.212	62		
0.15	52		
0.063	39		

Sample Proportions	% dry mass
Cobbles	0
Gravel	12
Sand	49
Silt	19
Clay	20

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



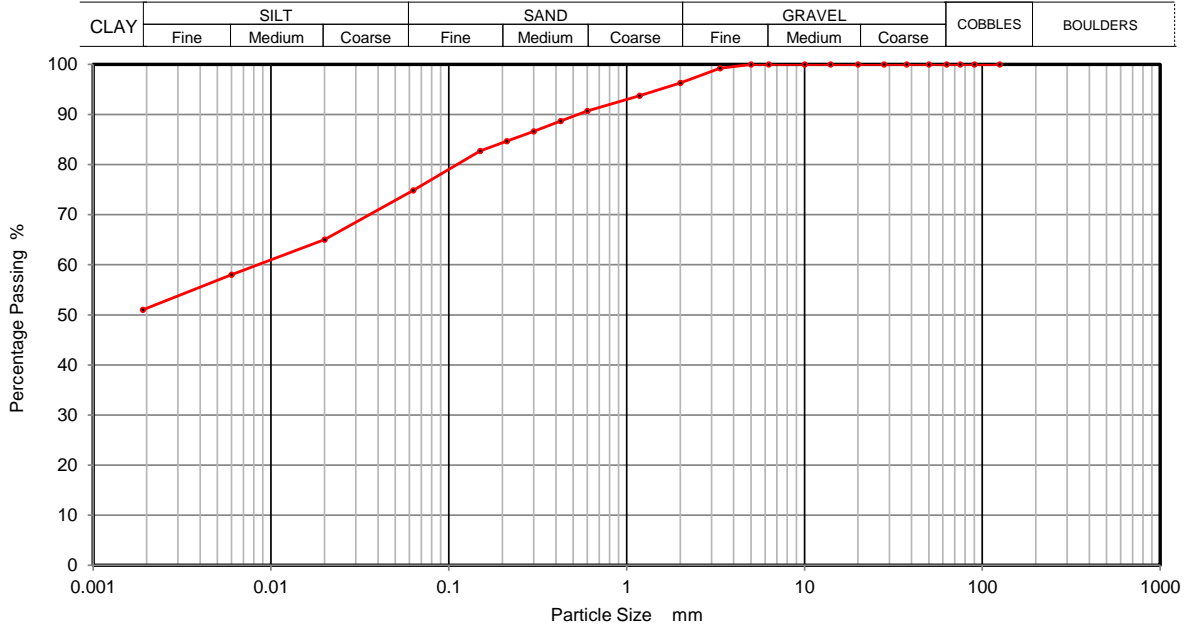
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	63583
Borehole/Pit No.	ATK_BH09
Sample No.	7
Depth Top	2.65
Depth Base	3.20
Sample Type	L

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	65
90	100	0.0060	58
75	100	0.0020	51
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	96		
1.18	94		
0.6	91		
0.425	89		
0.3	87		
0.212	85		
0.15	83		
0.063	75		

Sample Proportions	% dry mass
Cobbles	0
Gravel	4
Sand	21
Silt	24
Clay	51

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator



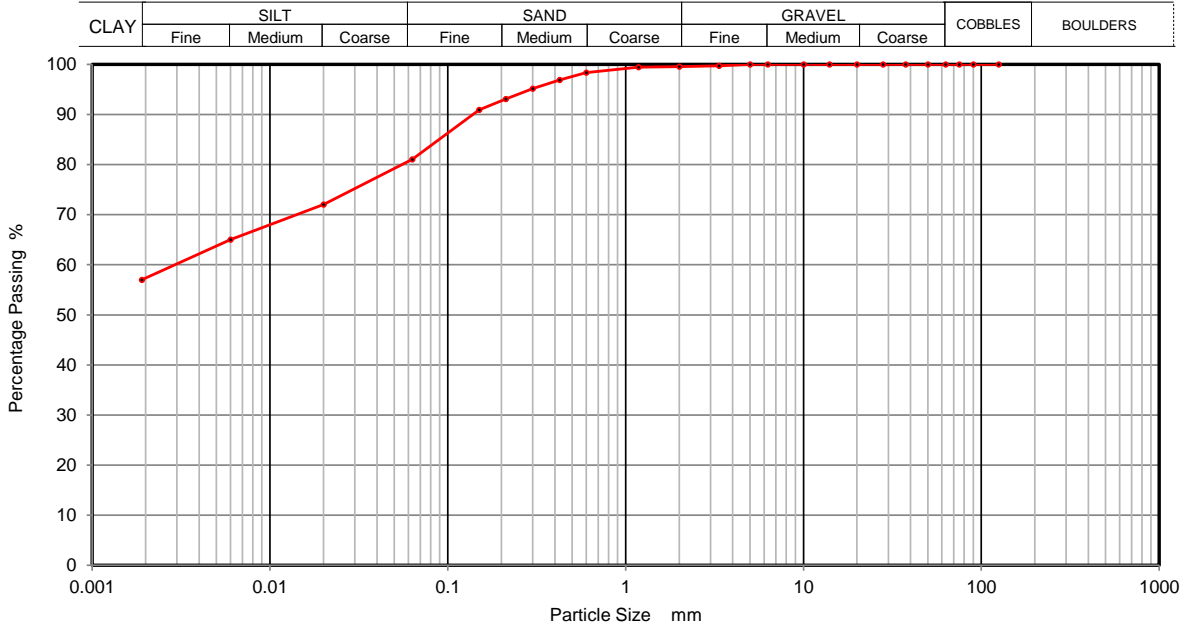
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH09
Sample No.	106
Depth Top	6.70
Depth Base	6.80
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	72
90	100	0.0060	65
75	100	0.0020	57
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	98		
0.425	97		
0.3	95		
0.212	93		
0.15	91		
0.063	81		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	19
Silt	24
Clay	57

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



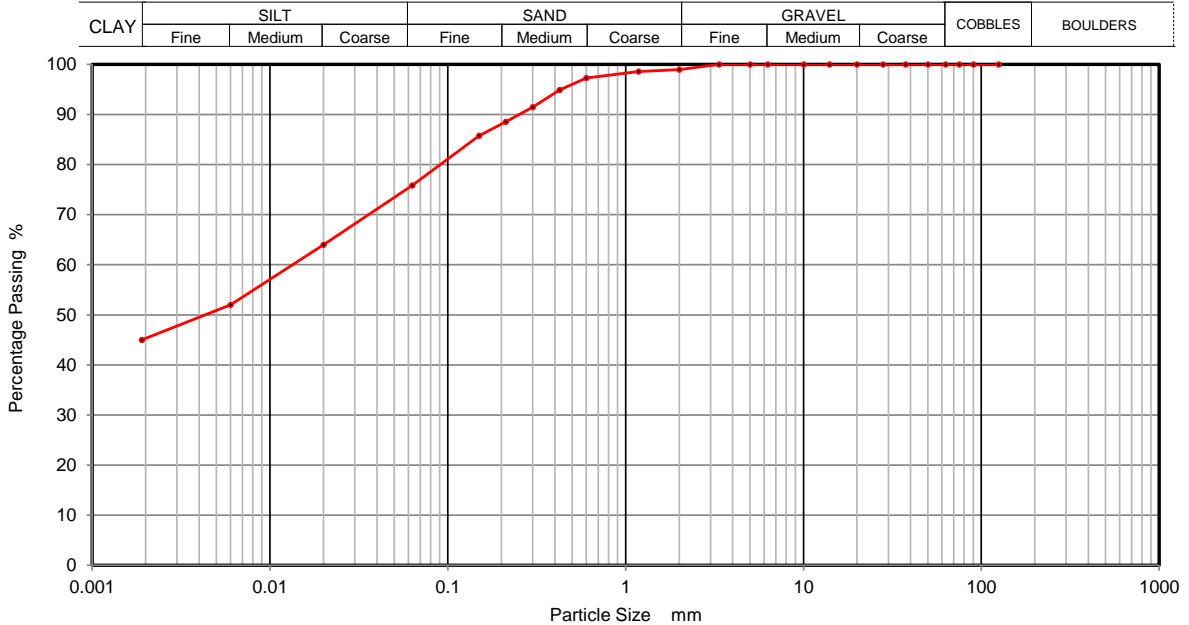
2788



**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH09
Sample No.	21
Depth Top	12.90
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	64
90	100	0.0060	52
75	100	0.0020	45
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.6	97		
0.425	95		
0.3	91		
0.212	89		
0.15	86		
0.063	76		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	23
Silt	31
Clay	45

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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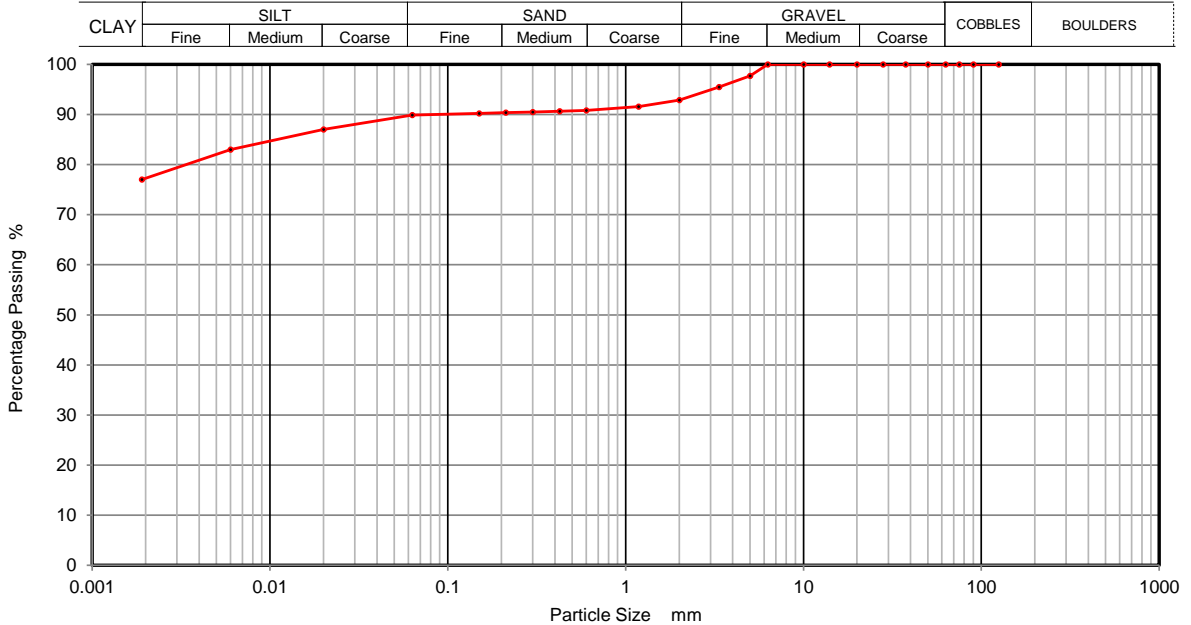
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH10
Sample No.	103
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	87
90	100	0.0060	83
75	100	0.0020	77
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	98		
3.35	95		
2	93		
1.18	92		
0.6	91		
0.425	91		
0.3	91		
0.212	90		
0.15	90		
0.063	90		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	3
Silt	13
Clay	77

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



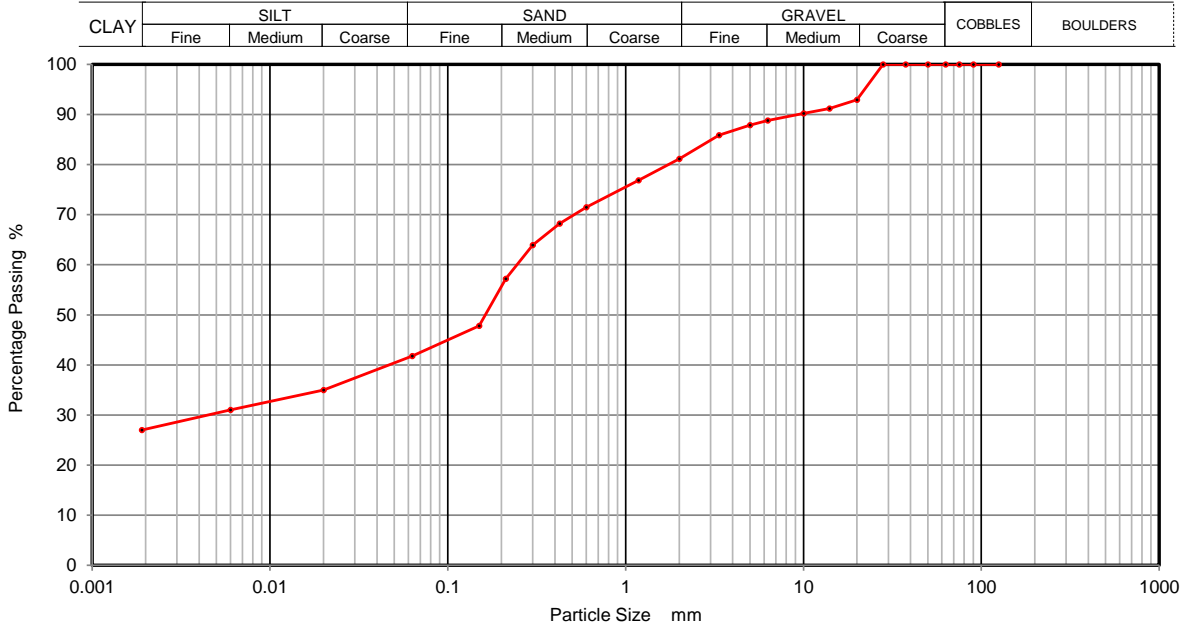
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH10
Sample No.	11
Depth Top	4.70
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	35
90	100	0.0060	31
75	100	0.0020	27
63	100		
50	100		
37.5	100		
28	100		
20	93		
14	91		
10	90		
6.3	89		
5	88		
3.35	86		
2	81		
1.18	77		
0.6	71		
0.425	68		
0.3	64		
0.212	57		
0.15	48		
0.063	42		

Sample Proportions	% dry mass
Cobbles	0
Gravel	19
Sand	39
Silt	15
Clay	27

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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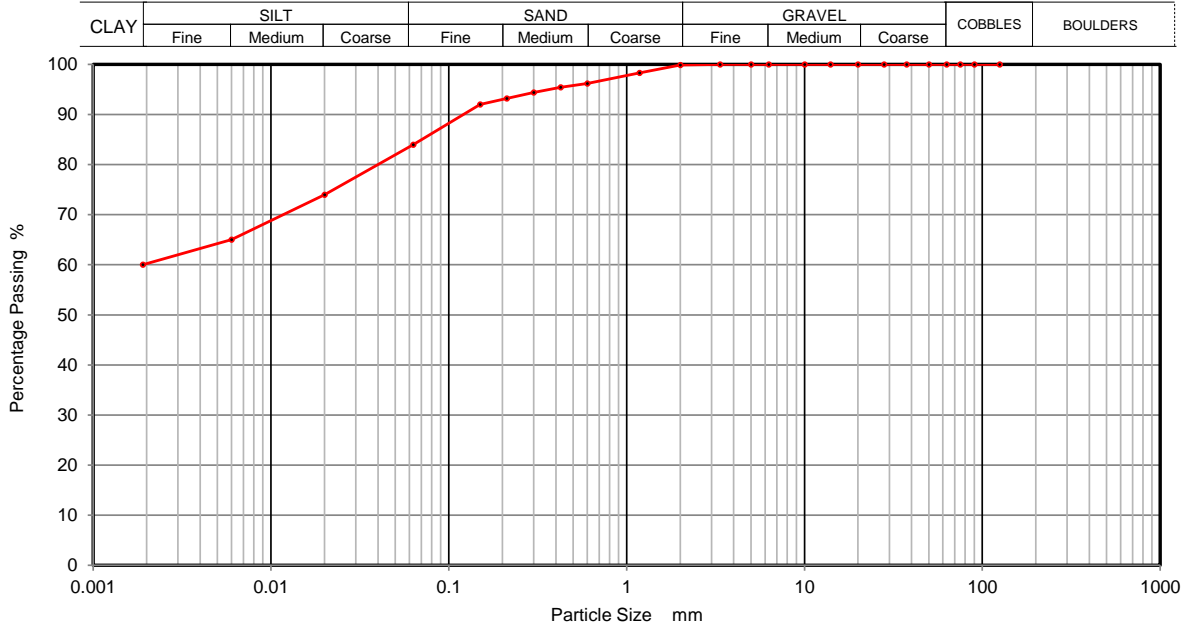




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH10
Sample No.	15
Depth Top	9.70
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	74
90	100	0.0060	65
75	100	0.0020	60
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	98		
0.6	96		
0.425	95		
0.3	94		
0.212	93		
0.15	92		
0.063	84		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	16
Silt	24
Clay	60

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



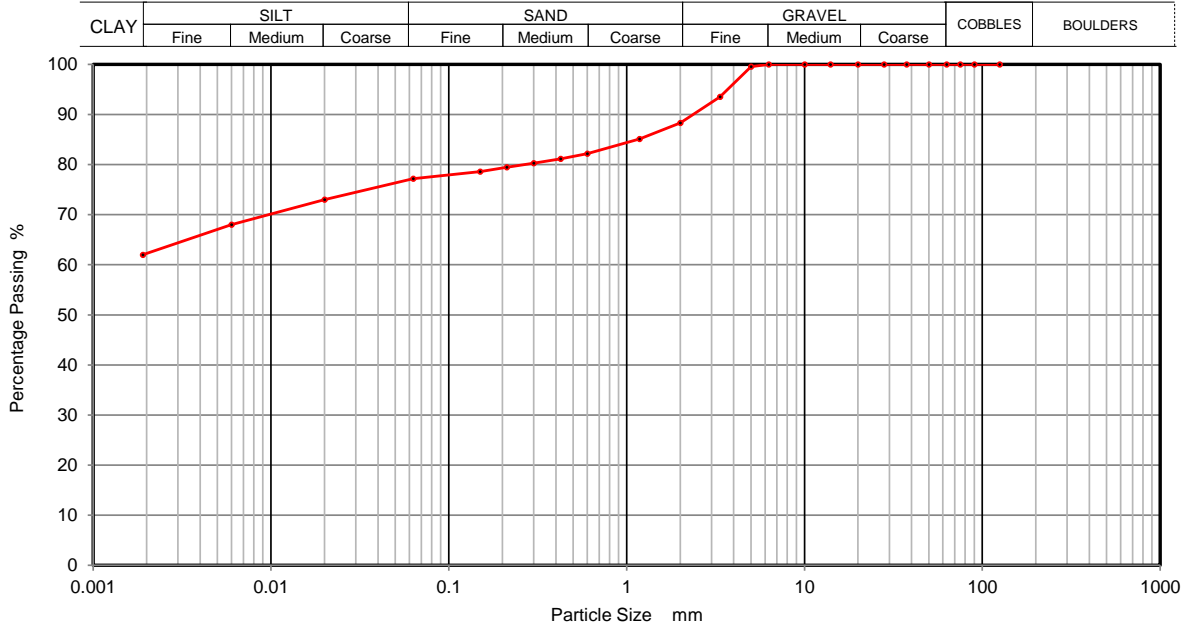
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH11
Sample No.	6
Depth Top	2.20
Depth Base	3.20
Sample Type	L

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	73
90	100	0.0060	68
75	100	0.0020	62
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	94		
2	88		
1.18	85		
0.6	82		
0.425	81		
0.3	80		
0.212	79		
0.15	79		
0.063	77		

Sample Proportions	% dry mass
Cobbles	0
Gravel	12
Sand	11
Silt	15
Clay	62

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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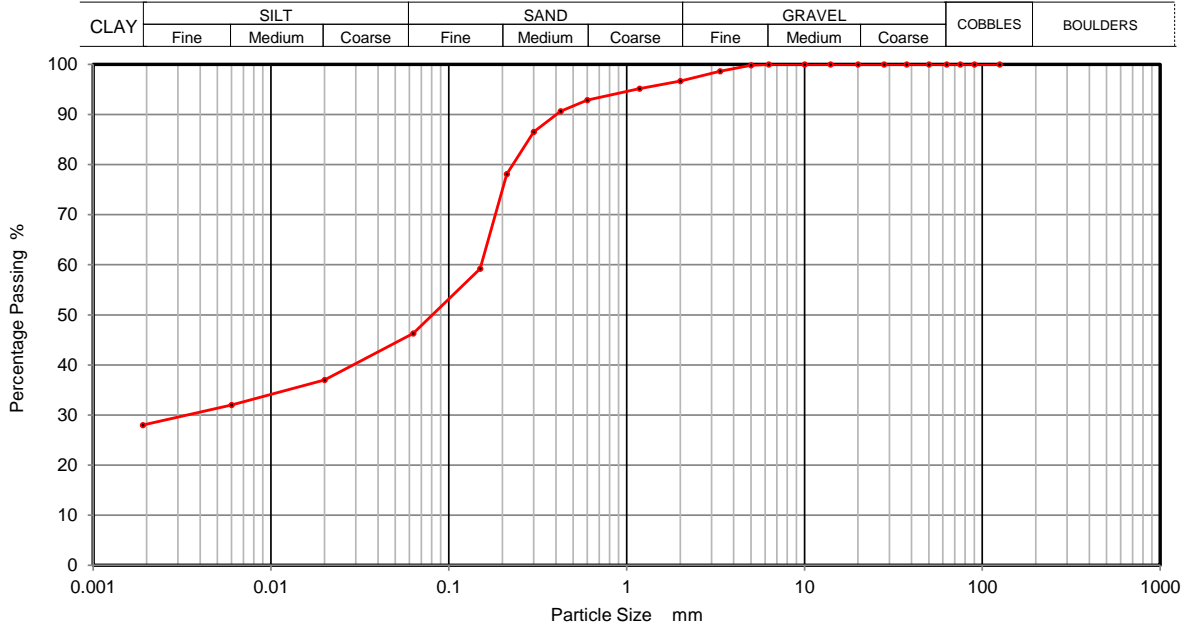
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH11
Sample No.	10
Depth Top	4.70
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	37
90	100	0.0060	32
75	100	0.0020	28
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	97		
1.18	95		
0.6	93		
0.425	91		
0.3	87		
0.212	78		
0.15	59		
0.063	46		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	51
Silt	18
Clay	28

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



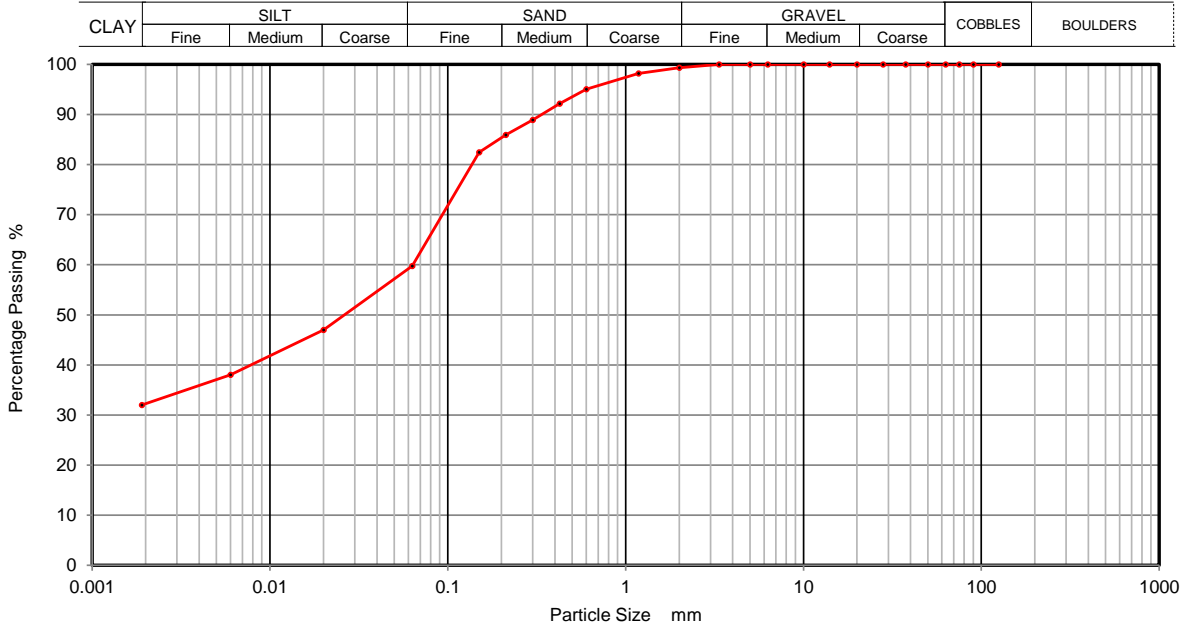
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH11
Sample No.	18
Depth Top	10.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	47
90	100	0.0060	38
75	100	0.0020	32
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	98		
0.6	95		
0.425	92		
0.3	89		
0.212	86		
0.15	82		
0.063	60		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	39
Silt	28
Clay	32

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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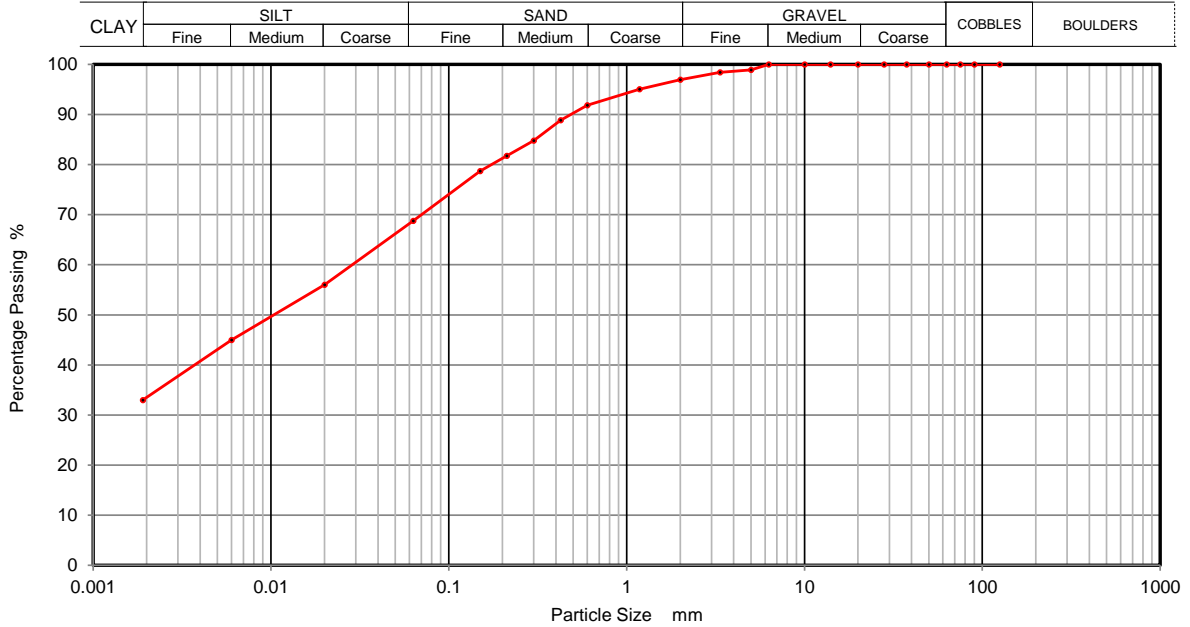
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH12
Sample No.	102
Depth Top	1.90
Depth Base	2.00
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	56
90	100	0.0060	45
75	100	0.0020	33
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	98		
2	97		
1.18	95		
0.6	92		
0.425	89		
0.3	85		
0.212	82		
0.15	79		
0.063	69		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	28
Silt	36
Clay	33

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



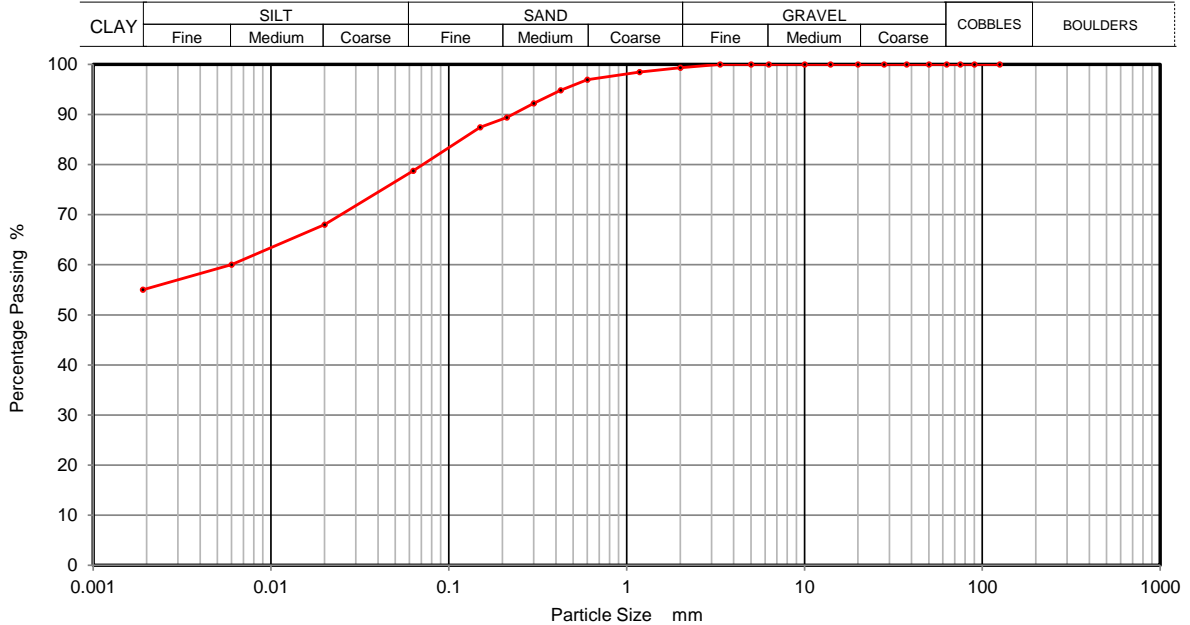
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH12
Sample No.	104
Depth Top	3.90
Depth Base	4.00
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	68
90	100	0.0060	60
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	98		
0.6	97		
0.425	95		
0.3	92		
0.212	89		
0.15	87		
0.063	79		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	20
Silt	24
Clay	55

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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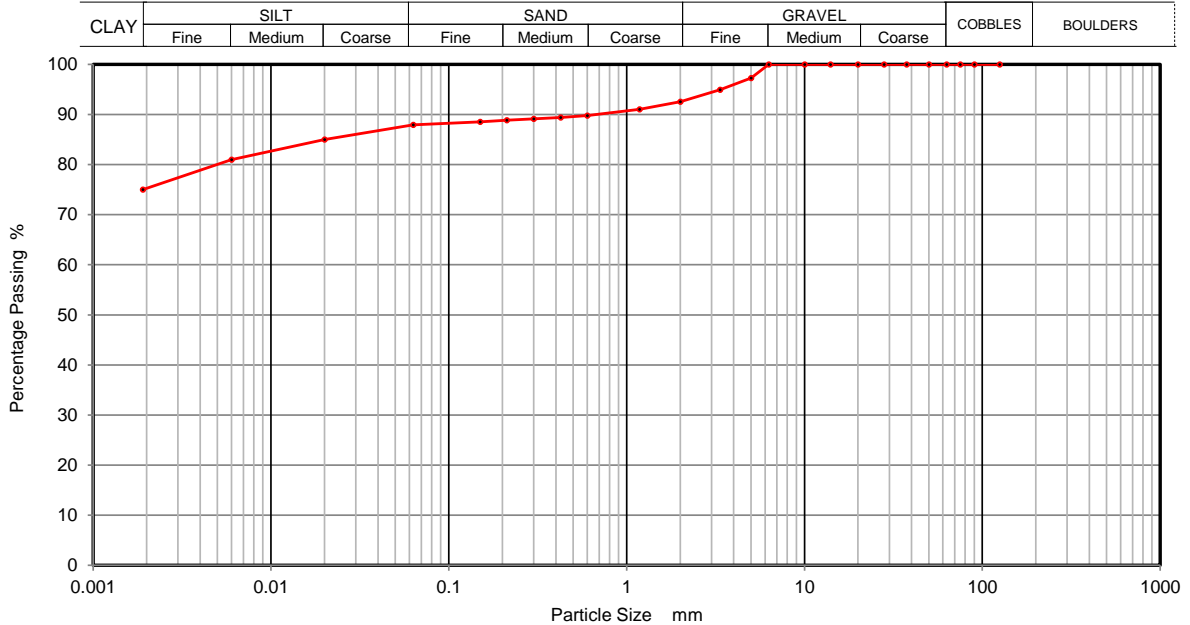
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH12
Sample No.	105
Depth Top	4.90
Depth Base	5.00
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	85
90	100	0.0060	81
75	100	0.0020	75
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	97		
3.35	95		
2	93		
1.18	91		
0.6	90		
0.425	89		
0.3	89		
0.212	89		
0.15	89		
0.063	88		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	5
Silt	13
Clay	75

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



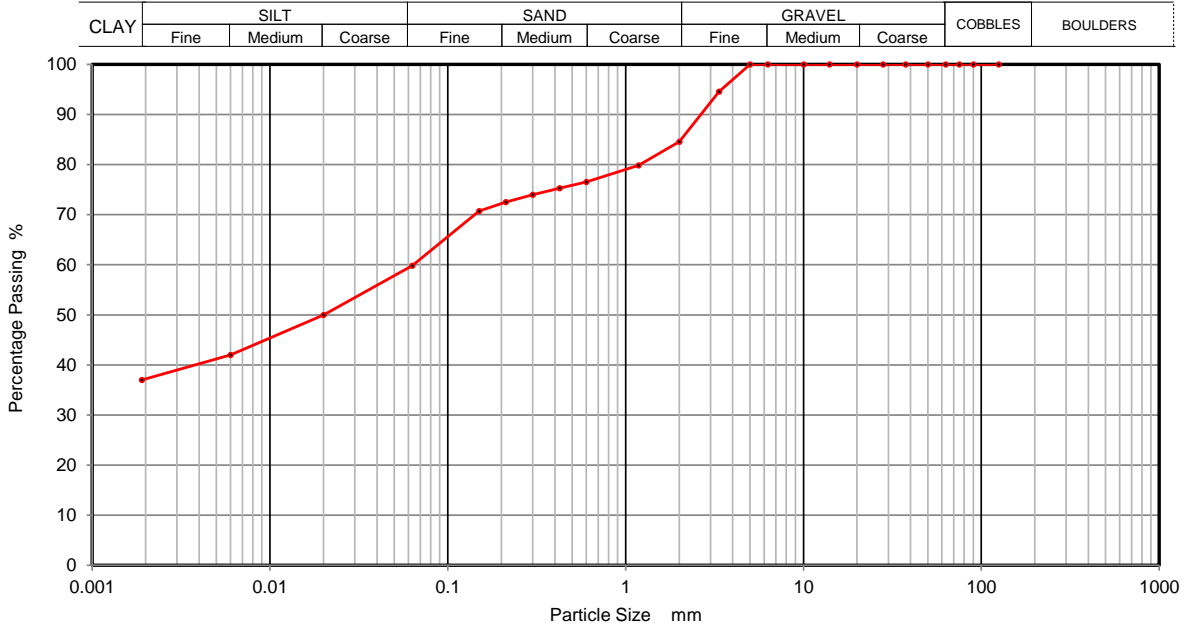
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH12
Sample No.	109
Depth Top	7.90
Depth Base	8.00
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	50
90	100	0.0060	42
75	100	0.0020	37
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	95		
2	85		
1.18	80		
0.6	77		
0.425	75		
0.3	74		
0.212	73		
0.15	71		
0.063	60		

Sample Proportions	% dry mass
Cobbles	0
Gravel	15
Sand	25
Silt	23
Clay	37

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



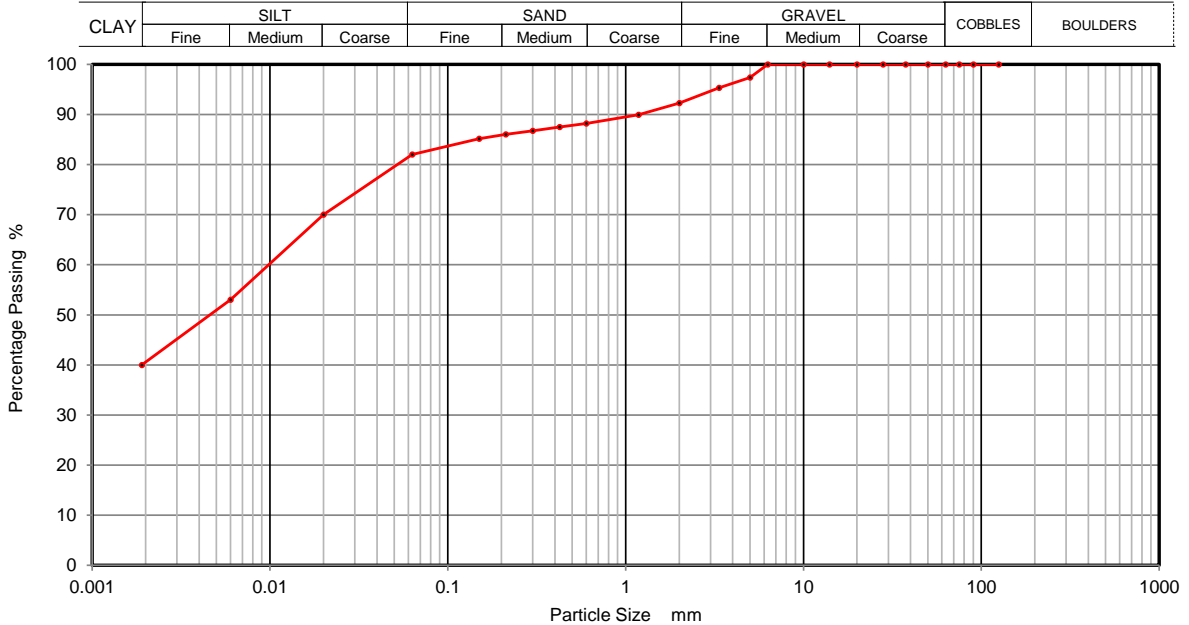
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	63583
Borehole/Pit No.	ATK_BH13
Sample No.	4
Depth Top	2.40
Depth Base	2.50
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	70
90	100	0.0060	53
75	100	0.0020	40
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	97		
3.35	95		
2	92		
1.18	90		
0.6	88		
0.425	88		
0.3	87		
0.212	86		
0.15	85		
0.063	82		

Sample Proportions	% dry mass
Cobbles	0
Gravel	8
Sand	10
Silt	42
Clay	40

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator



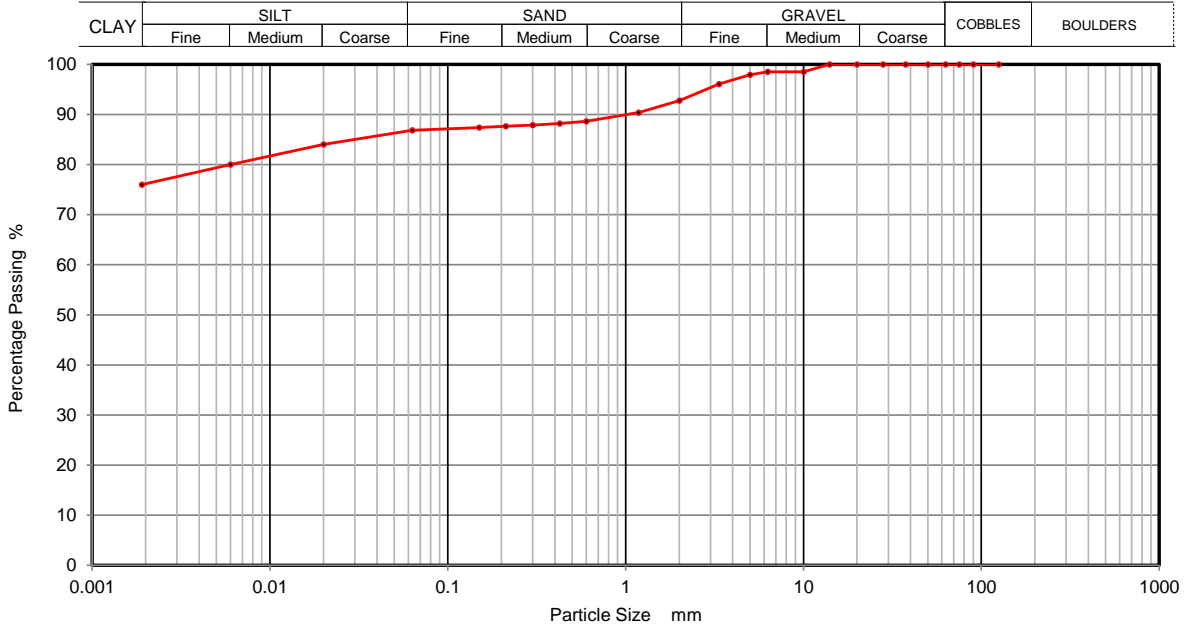
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH13
Sample No.	8
Depth Top	4.00
Depth Base	4.50
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	84
90	100	0.0060	80
75	100	0.0020	76
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	98		
3.35	96		
2	93		
1.18	90		
0.6	89		
0.425	88		
0.3	88		
0.212	88		
0.15	87		
0.063	87		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	6
Silt	11
Clay	76

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



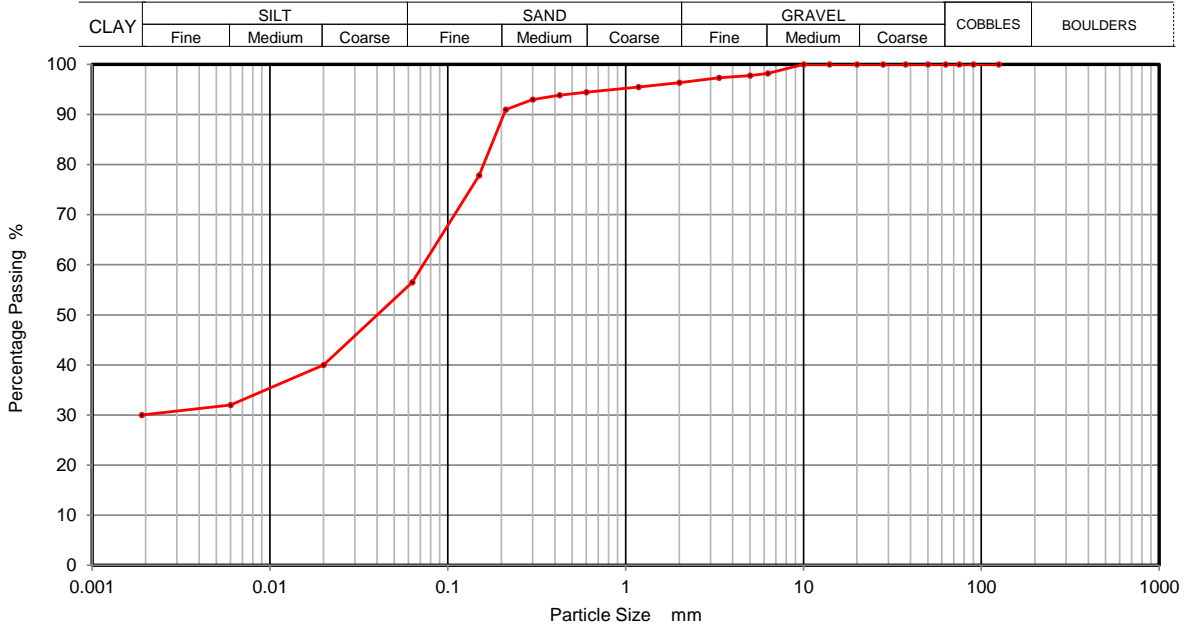
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH13
Sample No.	12
Depth Top	5.40
Depth Base	5.50
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	40
90	100	0.0060	32
75	100	0.0020	30
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	98		
5	98		
3.35	97		
2	96		
1.18	95		
0.6	94		
0.425	94		
0.3	93		
0.212	91		
0.15	78		
0.063	57		

Sample Proportions	% dry mass
Cobbles	0
Gravel	4
Sand	39
Silt	27
Clay	30

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



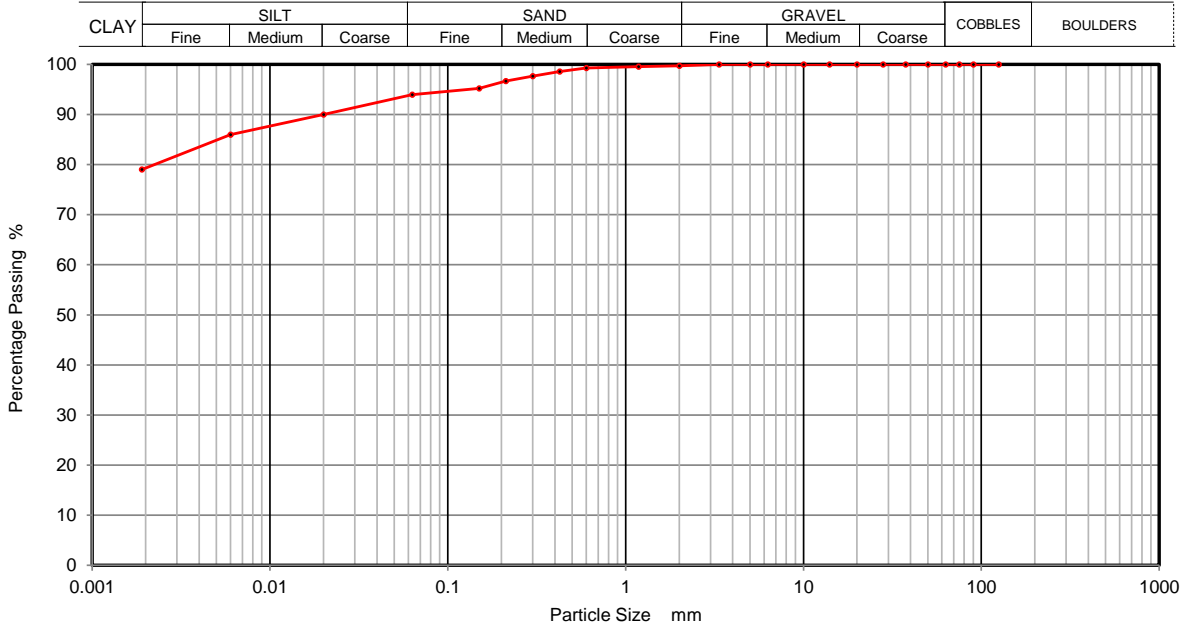
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH15
Sample No.	102
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	90
90	100	0.0060	86
75	100	0.0020	79
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	98		
0.212	97		
0.15	95		
0.063	94		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	6
Silt	15
Clay	79

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



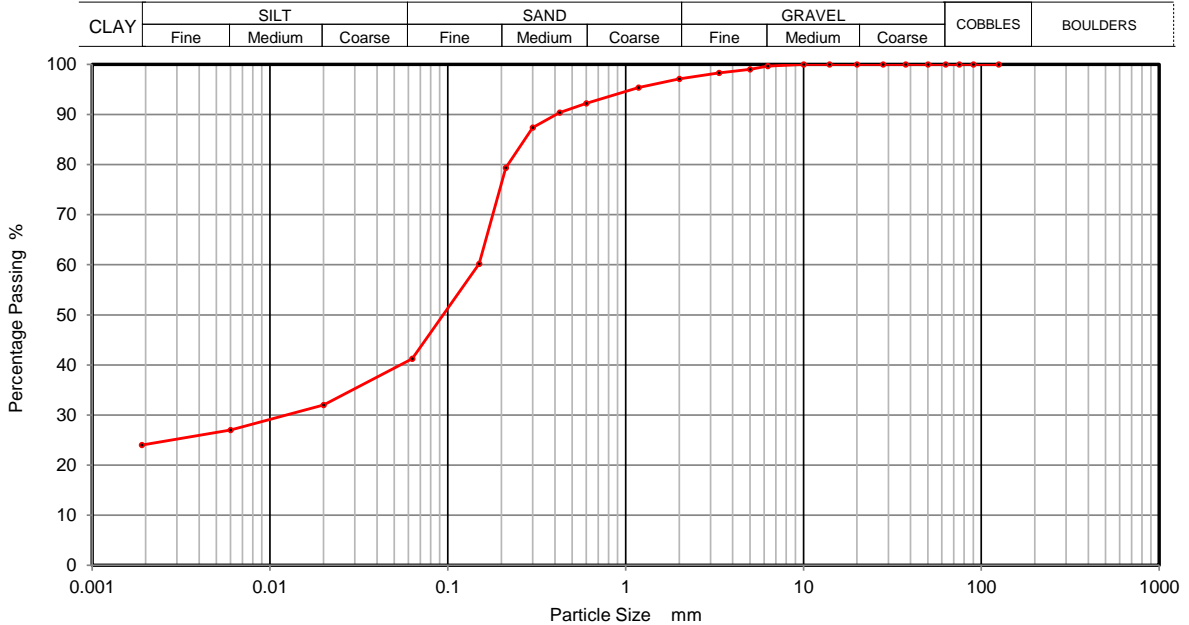
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH15
Sample No.	10
Depth Top	4.45
Depth Base	4.50
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	32
90	100	0.0060	27
75	100	0.0020	24
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	98		
2	97		
1.18	95		
0.6	92		
0.425	90		
0.3	87		
0.212	79		
0.15	60		
0.063	41		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	56
Silt	17
Clay	24

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



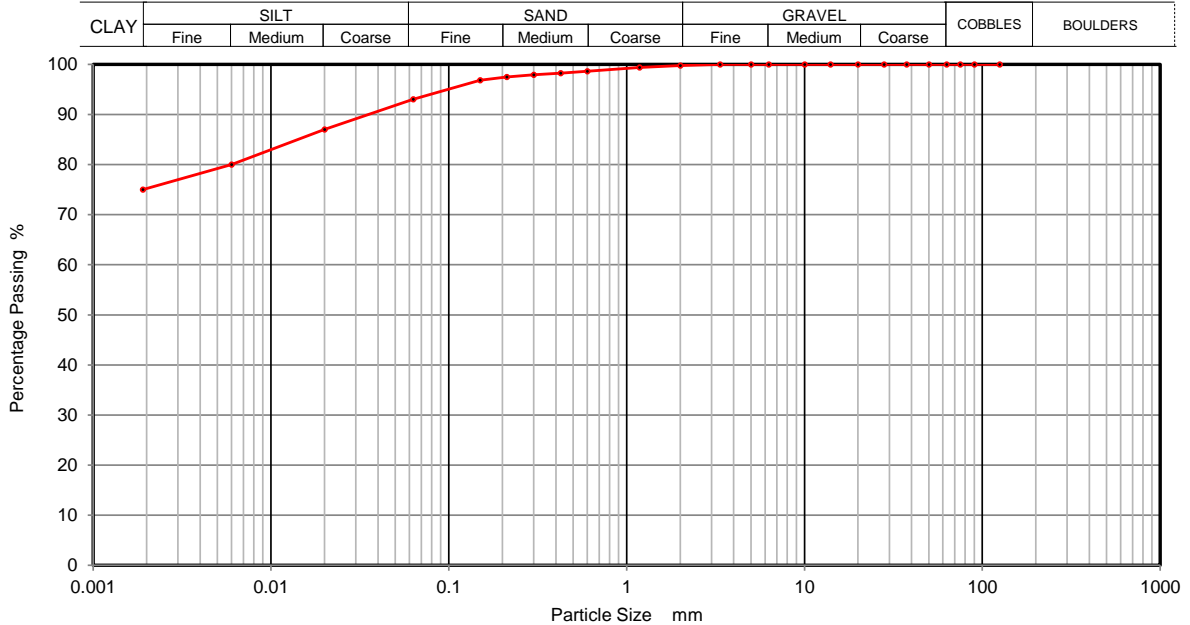
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH15
Sample No.	114
Depth Top	13.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	87
90	100	0.0060	80
75	100	0.0020	75
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	98		
0.3	98		
0.212	97		
0.15	97		
0.063	93		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	7
Silt	18
Clay	75

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



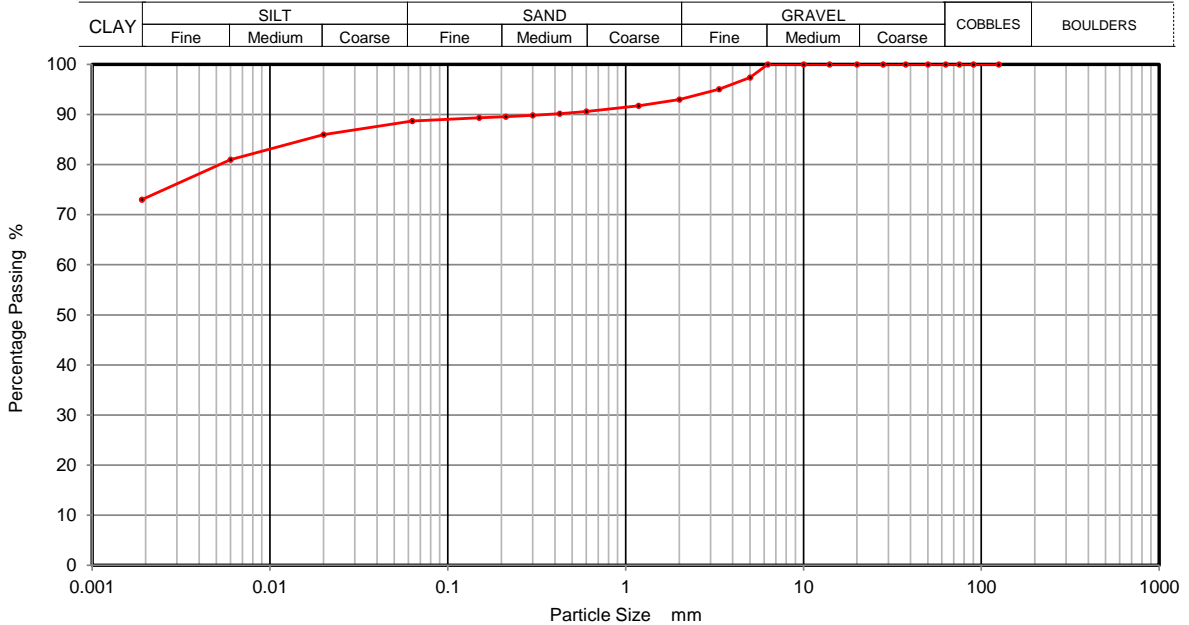
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH16
Sample No.	103
Depth Top	1.40
Depth Base	1.50
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	86
90	100	0.0060	81
75	100	0.0020	73
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	97		
3.35	95		
2	93		
1.18	92		
0.6	91		
0.425	90		
0.3	90		
0.212	90		
0.15	89		
0.063	89		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	4
Silt	16
Clay	73

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



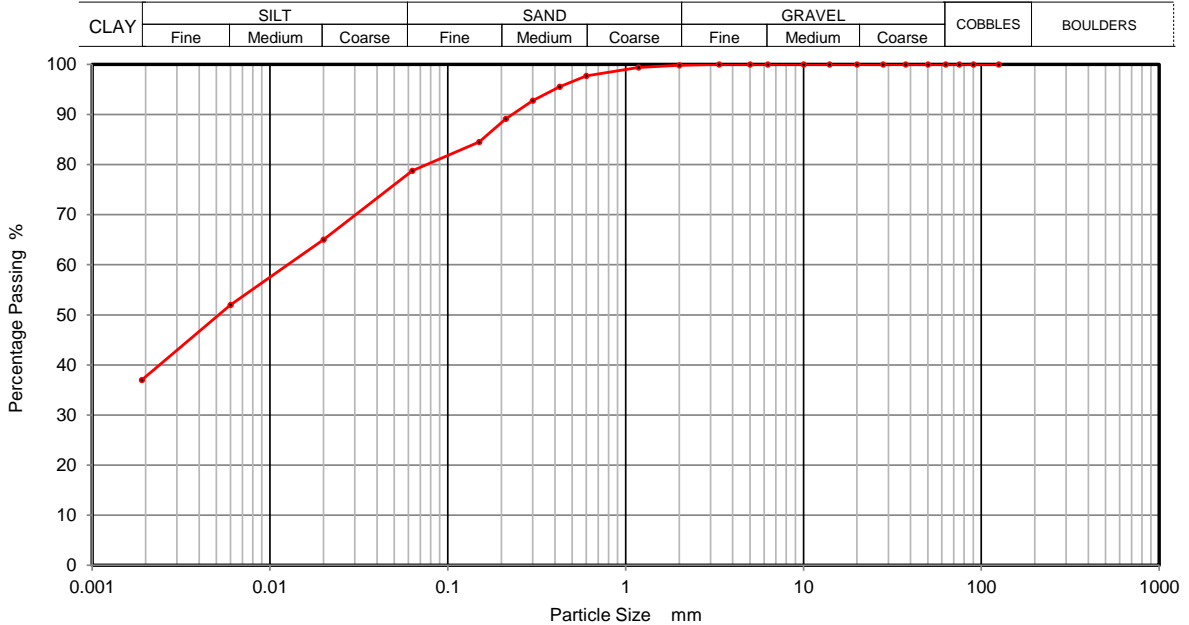
2788



**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH16
Sample No.	2
Depth Top	2.45
Depth Base	2.50
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	65
90	100	0.0060	52
75	100	0.0020	37
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	98		
0.425	96		
0.3	93		
0.212	89		
0.15	85		
0.063	79		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	21
Silt	42
Clay	37

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



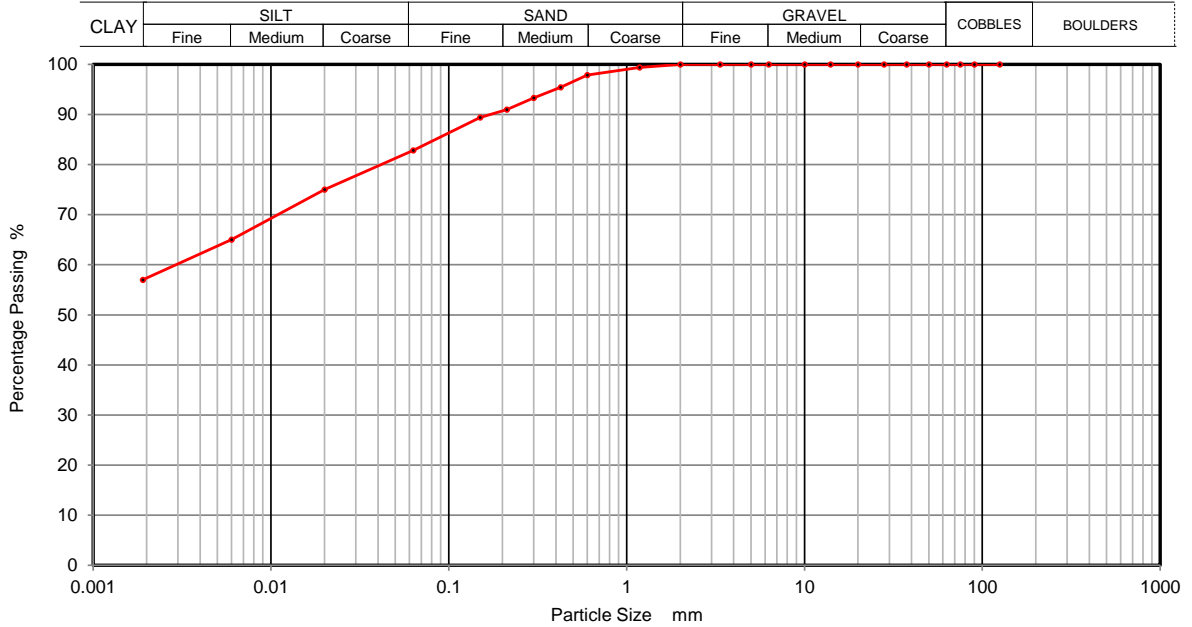
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH16
Sample No.	3
Depth Top	4.45
Depth Base	4.50
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	75
90	100	0.0060	65
75	100	0.0020	57
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	98		
0.425	95		
0.3	93		
0.212	91		
0.15	89		
0.063	83		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	17
Silt	26
Clay	57

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



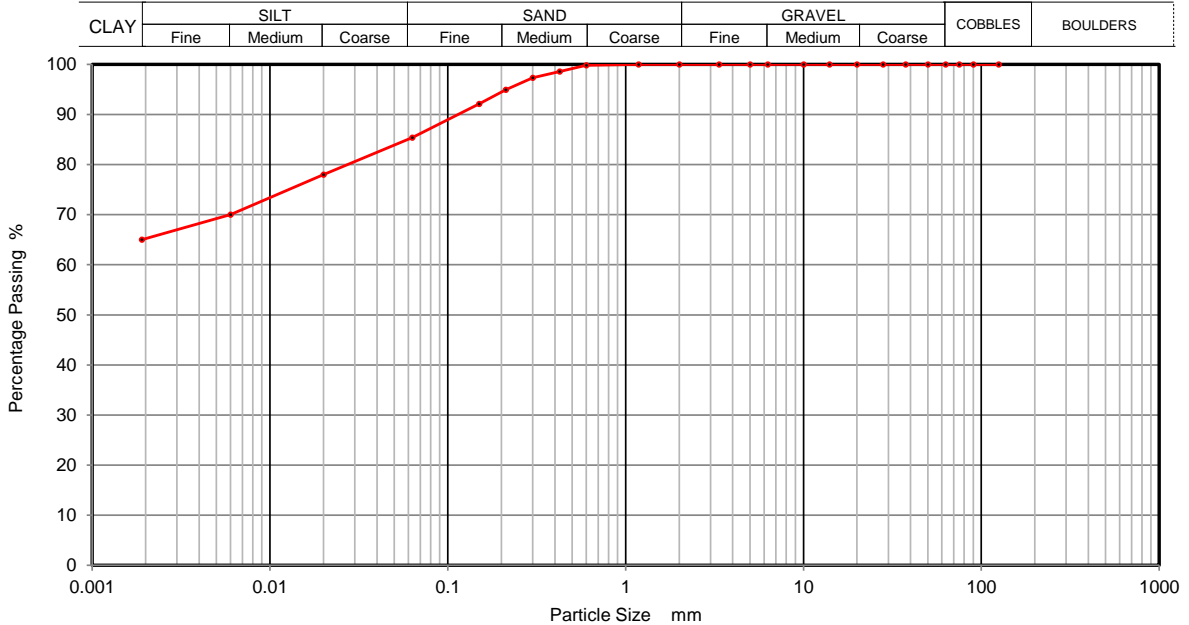
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63583
Borehole/Pit No.	ATK_BH16
Sample No.	10
Depth Top	8.15
Depth Base	8.20
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	19/01/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	78
90	100	0.0060	70
75	100	0.0020	65
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	97		
0.212	95		
0.15	92		
0.063	85		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	15
Silt	20
Clay	65

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

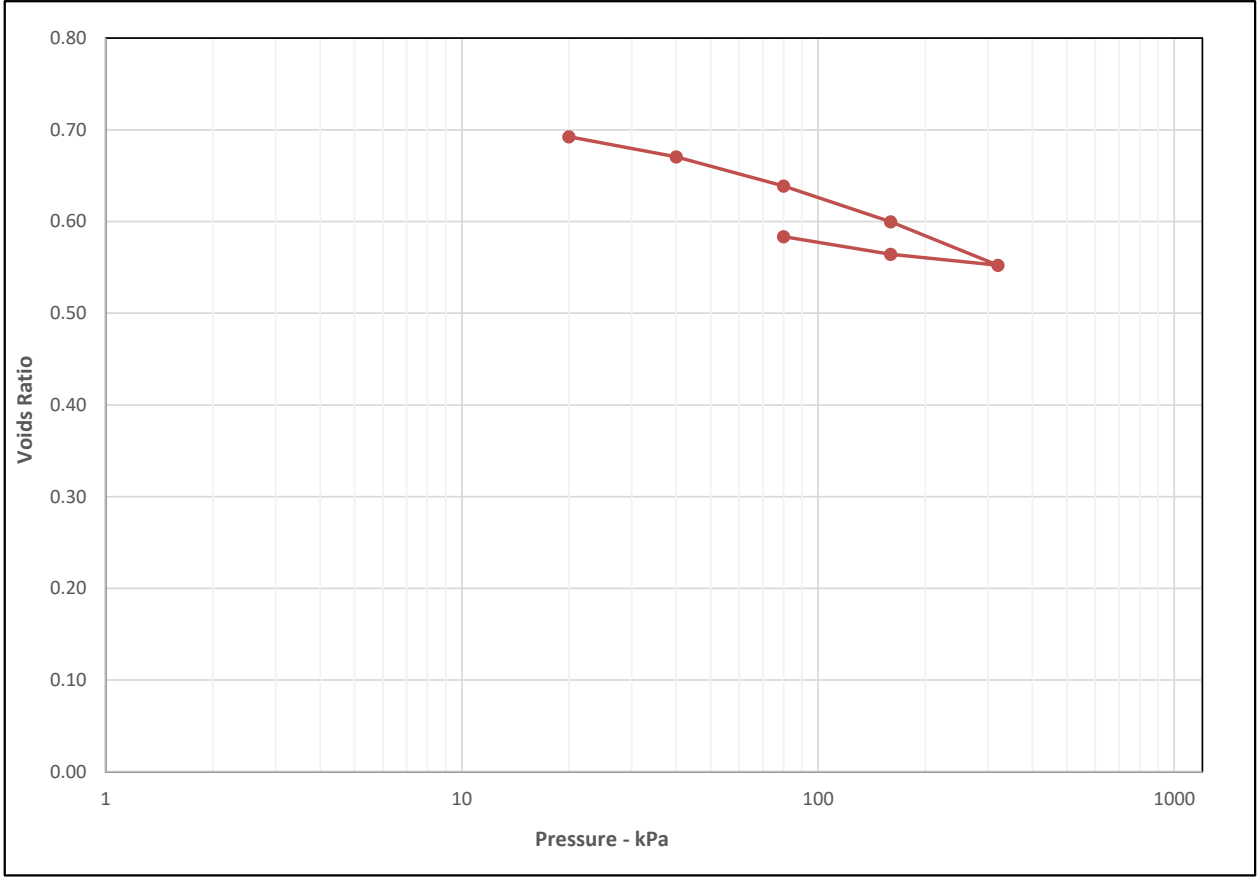
Contract Number

63583

Borehole/Trialpit No.

ATKRD_BH01

Project Name	Lyneham Banks	Sample No.	105
Soil Description	Grey silty CLAY	Depth Top (m)	4.70
		Depth Base (m)	5.00
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	12/01/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	30	0	-	20	0.040	5.1			
Bulk Density (Mg/m3)	2.04	20	-	40	0.65	2.0			
Dry Density (Mg/m3)	1.56	40	-	80	0.48	2.4			
Voids Ratio	0.6938	80	-	160	0.30	1.0			
Degree of saturation	115.0	160	-	320	0.18	2.0			
Height (mm)	20	320	-	160	0.048	19			
Diameter (mm)	75	160	-	80	0.15	4.2			
Particle Density (Mg/m3)	2.65		-						

Operator
[Redacted]



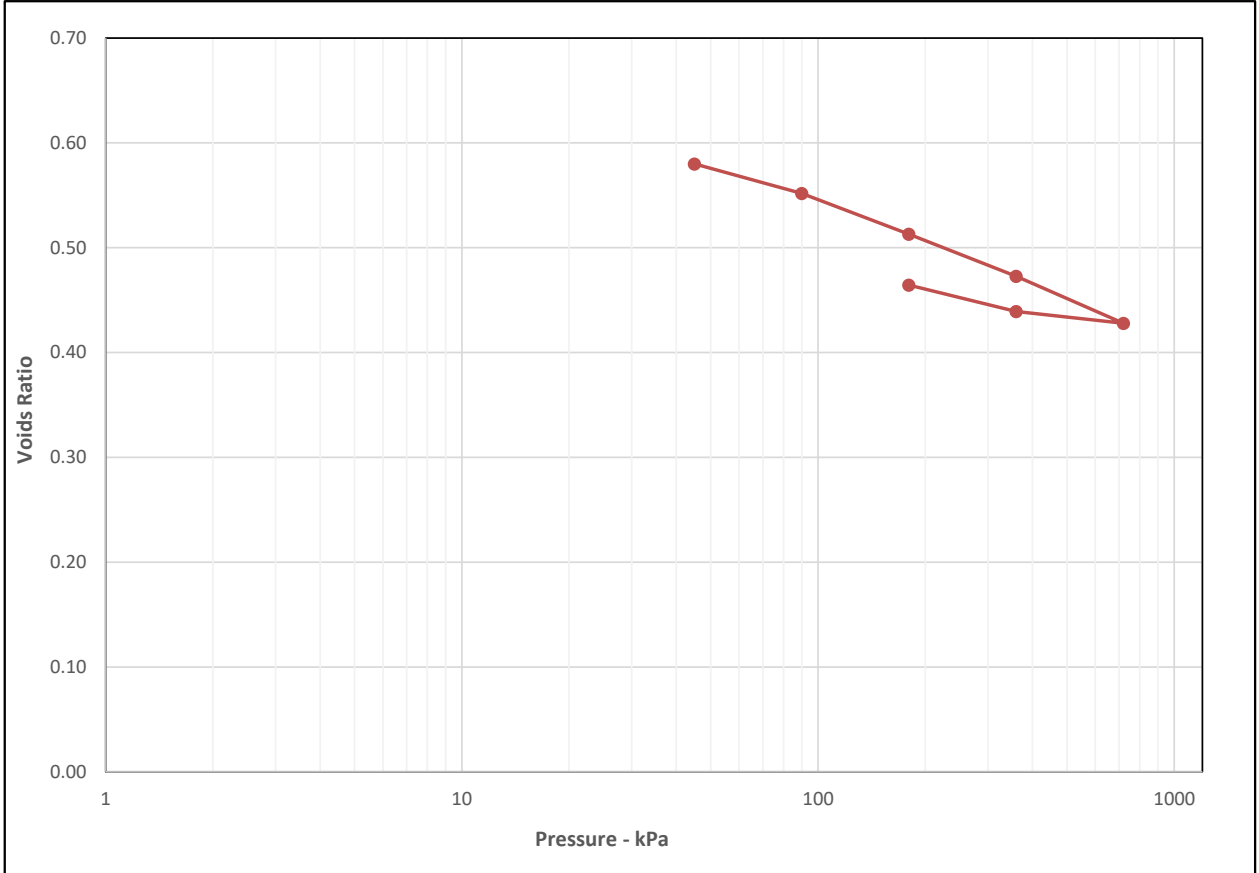


**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number 63583

Borehole/Trialpit No. ATK_BH04

Project Name	Lyneham Banks	Sample No.	110
Soil Description	Grey silty CLAY	Depth Top (m)	9.40
		Depth Base (m)	9.70
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	12/01/2023		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	26	0	-	45	0.086	4.4		-			
Bulk Density (Mg/m3)	2.10	45	-	90	0.40	2.4		-			
Dry Density (Mg/m3)	1.67	90	-	180	0.28	0.66		-			
Voids Ratio	0.5861	180	-	360	0.15	0.71		-			
Degree of saturation	117.0	360	-	720	0.085	0.63		-			
Height (mm)	20	720	-	360	0.022	0.94		-			
Diameter (mm)	74.95	360	-	180	0.097	0.58		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number

63583

Borehole/Trialpit No.

ATK_BH05

Project Name

Lyneham Banks

Sample No.

111

Soil Description

Grey silty CLAY

Depth Top (m)

6.10

Depth Base (m)

6.40

Lab Temperature

20°C

Sample Location

Top

Remarks

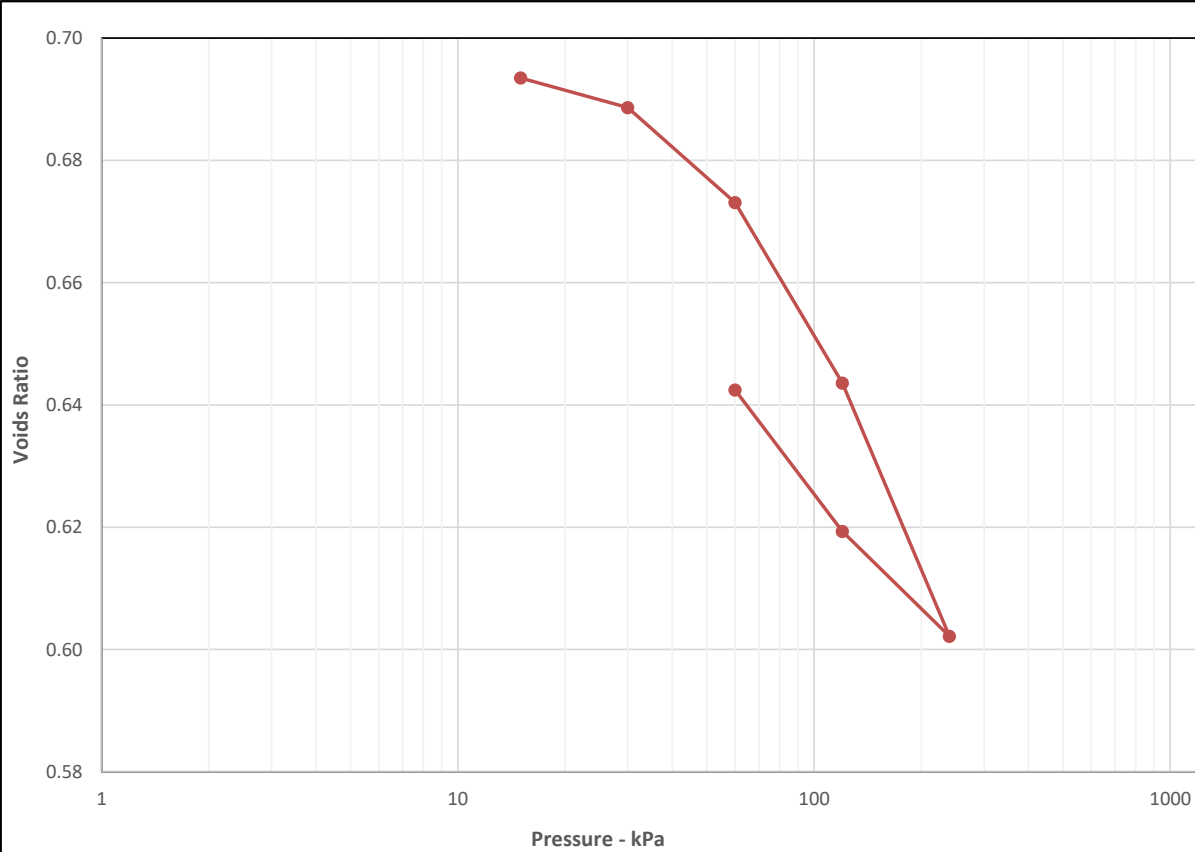
Cv Calculated Using T90
Particle Density Assumed Unless Stated Otherwise

Sample Type

CS

Date Tested

12/01/2023



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	29	0	-	15	0.18	SWELL		-		
Bulk Density (Mg/m3)	2.02	15	-	30	0.19	15		-		
Dry Density (Mg/m3)	1.56	30	-	60	0.31	6.2		-		
Voids Ratio	0.6980	60	-	120	0.29	1.6		-		
Degree of saturation	111.1	120	-	240	0.21	0.95		-		
Height (mm)	19.6	240	-	120	0.089	4.5		-		
Diameter (mm)	75.1	120	-	60	0.24	0.52		-		
Particle Density (Mg/m3)	2.65		-					-		

Operator
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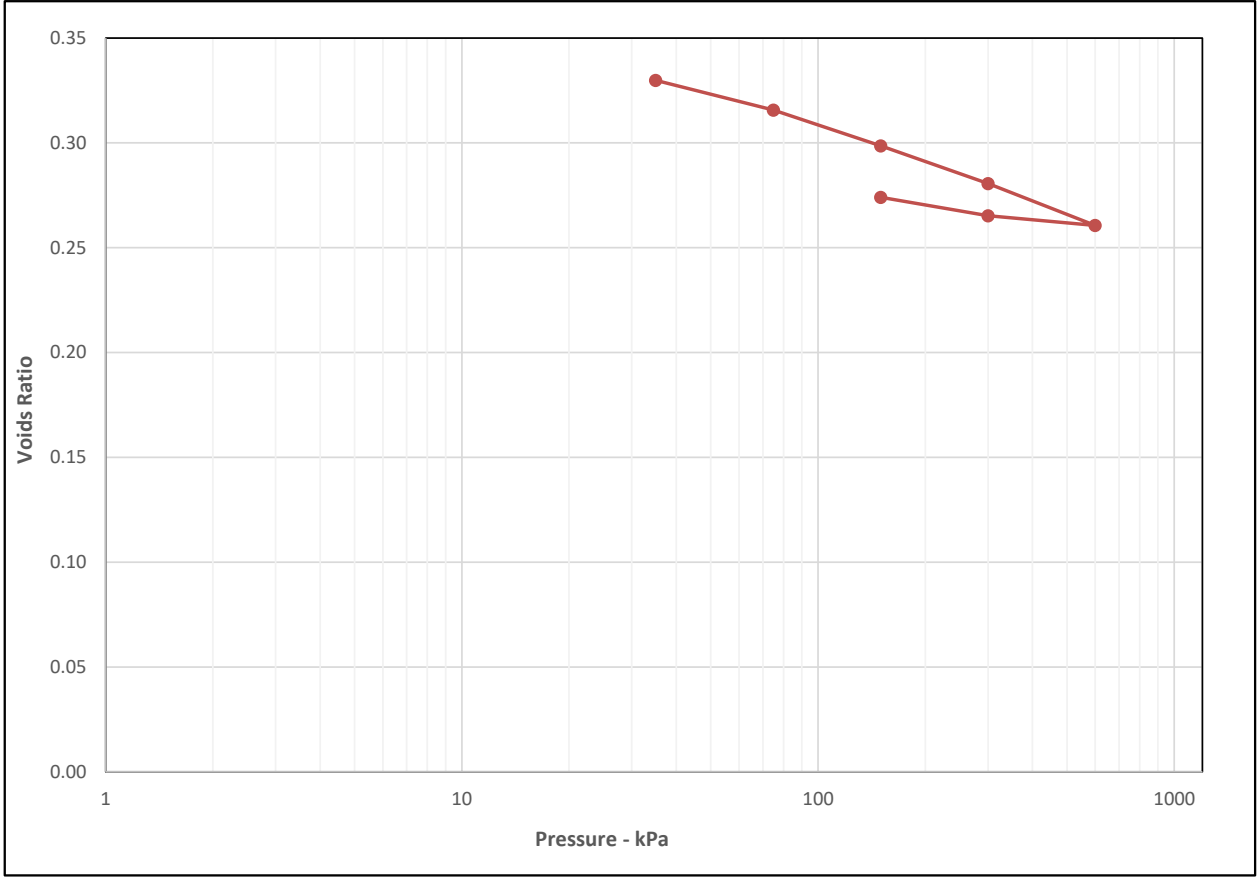


**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number 63583

Borehole/Trialpit No. ATK_BH05

Project Name	Lyneham Banks	Sample No.	121
Soil Description	Grey silty CLAY	Depth Top (m)	15.20
		Depth Base (m)	15.50
Lab Temperature	20°C	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	12/01/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	16	0	-	35	0.91	13		-	
Bulk Density (Mg/m3)	2.25	35	-	75	0.27	2.6		-	
Dry Density (Mg/m3)	1.93	75	-	150	0.17	2.5		-	
Voids Ratio	0.3734	150	-	300	0.092	2.4		-	
Degree of saturation	116.3	300	-	600	0.052	2.1		-	
Height (mm)	20	600	-	300	0.012	18		-	
Diameter (mm)	75	300	-	150	0.046	8.6		-	
Particle Density (Mg/m3)	2.65		-					-	

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number

63583

Borehole/Trialpit No.

ATK_BH08

Project Name

Lyneham Banks

Sample No.

6

Soil Description

Brown grey silty CLAY

Depth Top (m)

2.20

Depth Base (m)

2.62

Lab Temperature

20°C

Sample Location

Top

Remarks

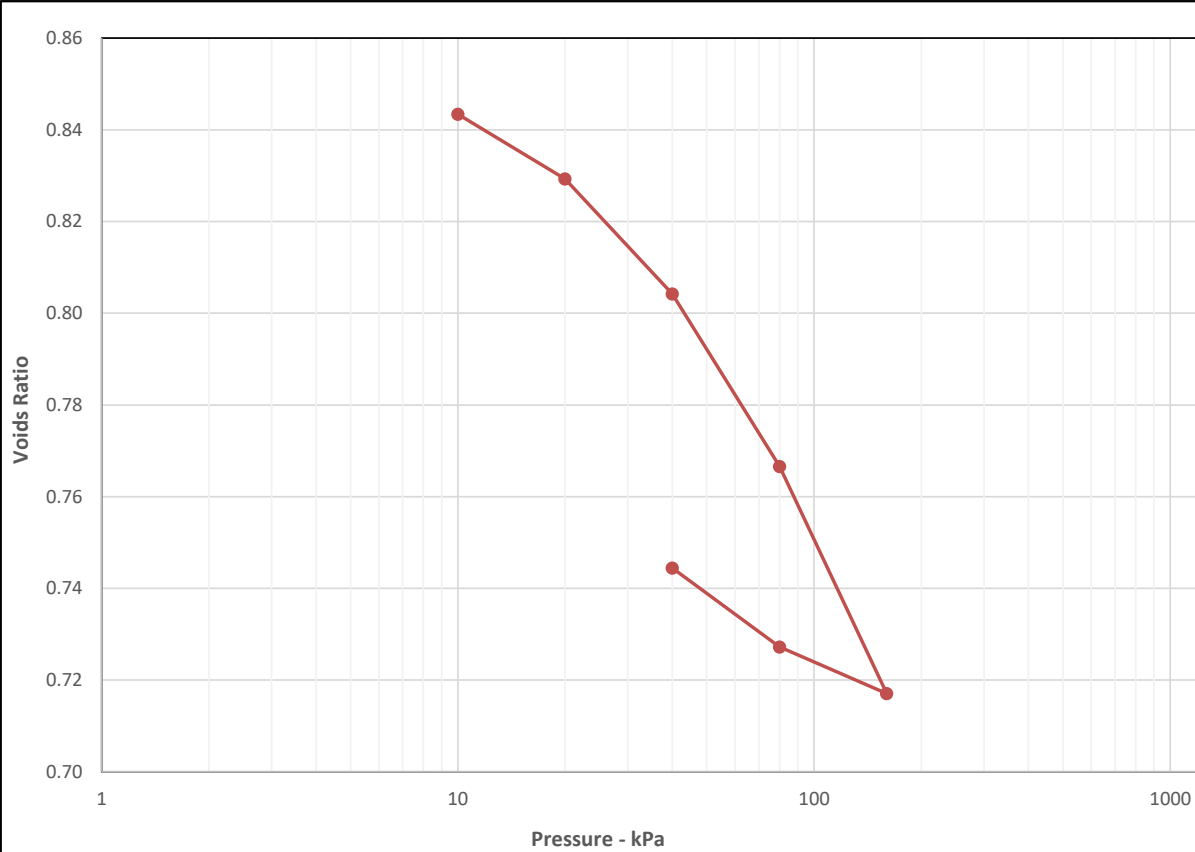
Cv Calculated Using T90
Particle Density Assumed Unless Stated Otherwise

Sample Type

UT

Date Tested

12/01/2023



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	36	0	-	10	1.1	7.5		-			
Bulk Density (Mg/m3)	1.93	10	-	20	0.77	4.8		-			
Dry Density (Mg/m3)	1.42	20	-	40	0.68	1.3		-			
Voids Ratio	0.8639	40	-	80	0.52	0.81		-			
Degree of saturation	110.2	80	-	160	0.35	0.87		-			
Height (mm)	19.8	160	-	80	0.074	1.6		-			
Diameter (mm)	75.11	80	-	40	0.25	1.1		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
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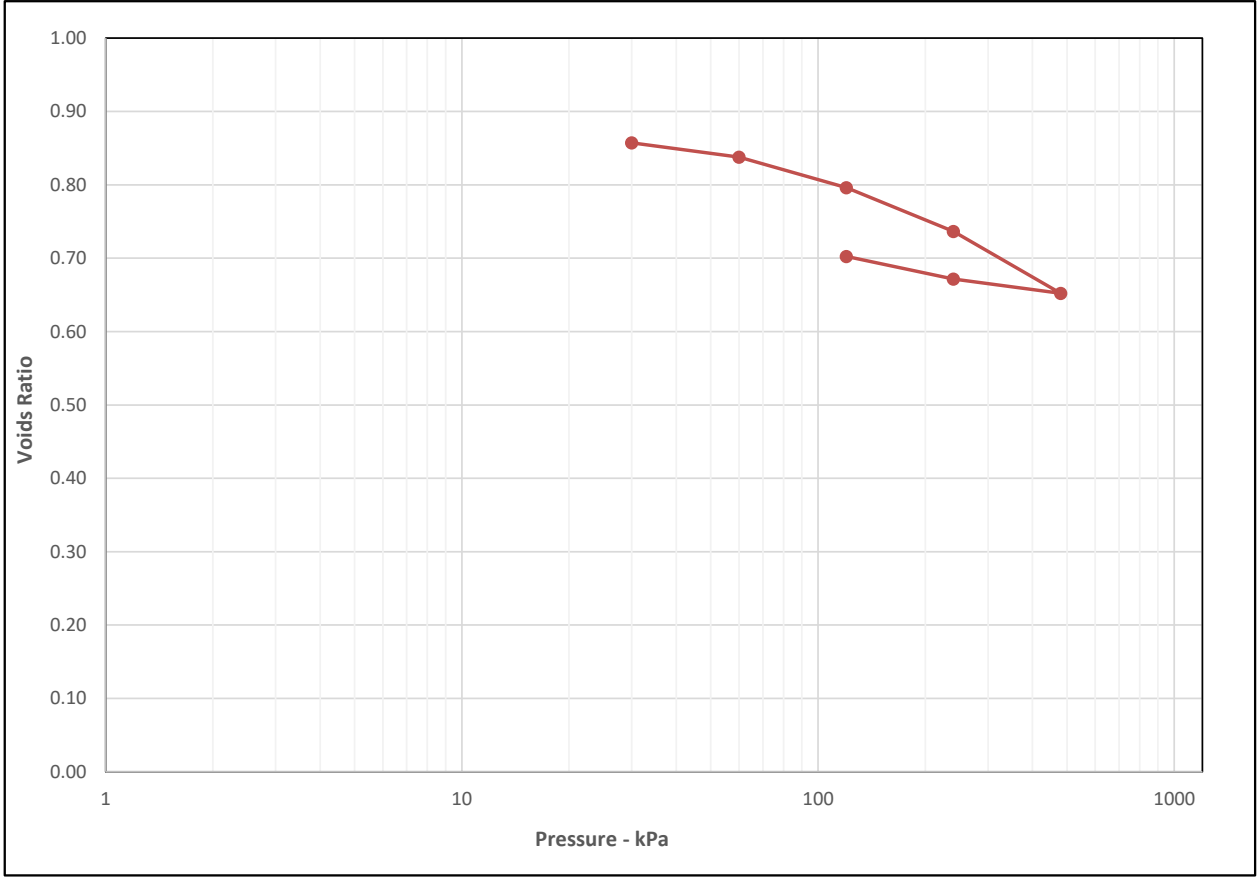


**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number 63583

Borehole/Trialpit No. ATK_BH09

Project Name	Lyneham Banks	Sample No.	14
Soil Description	Grey silty CLAY	Depth Top (m)	6.20
		Depth Base (m)	6.65
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	12/01/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	SWELL	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	36	0	-	30	0.13	SWELL		-		
Bulk Density (Mg/m3)	1.93	30	-	60	0.35	5.7		-		
Dry Density (Mg/m3)	1.42	60	-	120	0.38	1.0		-		
Voids Ratio	0.8643	120	-	240	0.28	0.40		-		
Degree of saturation	108.9	240	-	480	0.20	0.25		-		
Height (mm)	18.54	480	-	240	0.049	4.3		-		
Diameter (mm)	75.23	240	-	120	0.15	0.21		-		
Particle Density (Mg/m3)	2.65		-					-		

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number

63583

Borehole/Trialpit No.

ATK_BH10

Project Name

Lyneham Banks

Sample No.

10

Soil Description

Grey silty CLAY

Depth Top (m)

4.20

Depth Base (m)

4.65

Lab Temperature

20°C

Sample Location

Top

Remarks

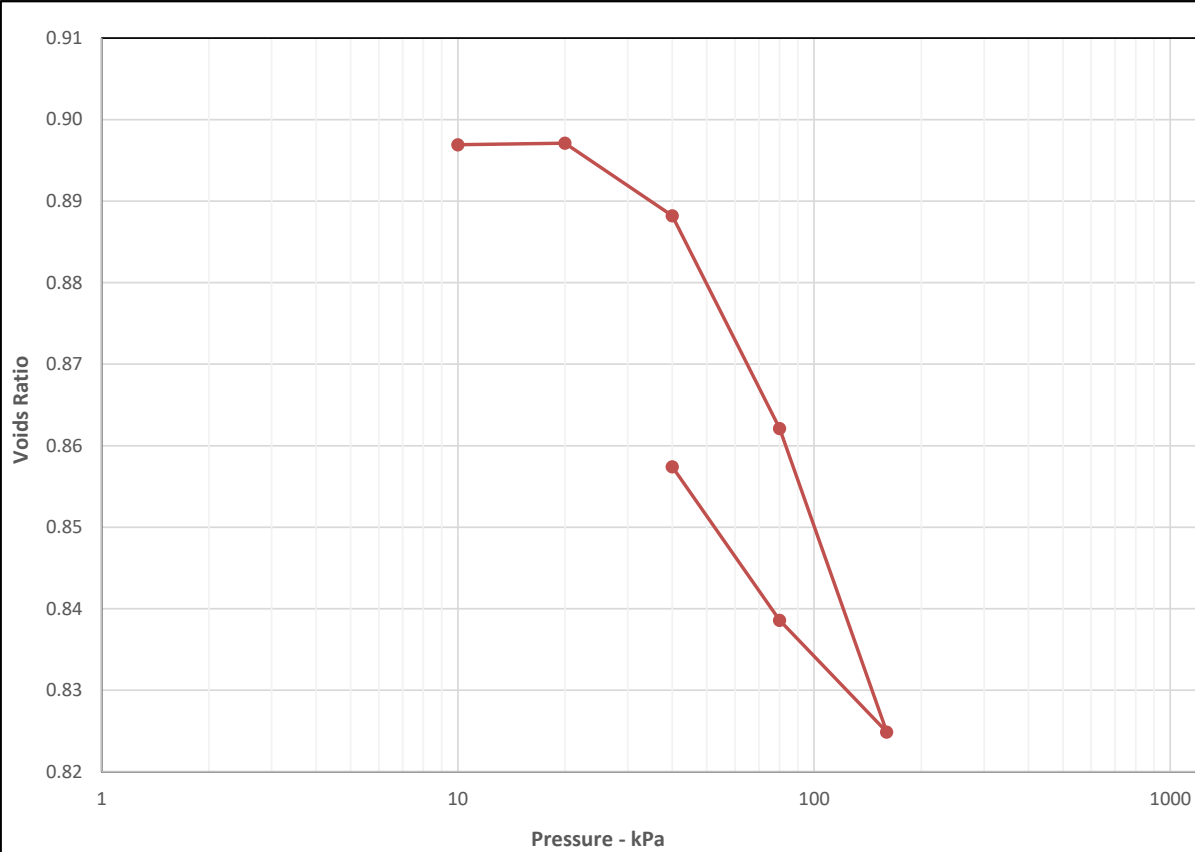
Cv Calculated Using T90
Particle Density Assumed Unless Stated Otherwise

Sample Type

UT

Date Tested

12/01/2023



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	35	0	-	10	SWELL	SWELL		-			
Bulk Density (Mg/m3)	1.89	10	-	20	SWELL	SWELL		-			
Dry Density (Mg/m3)	1.40	20	-	40	0.23	8.1		-			
Voids Ratio	0.8898	40	-	80	0.35	2.5		-			
Degree of saturation	103.9	80	-	160	0.25	3.4		-			
Height (mm)	20.15	160	-	80	0.094	19		-			
Diameter (mm)	75.15	80	-	40	0.26	2.8		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
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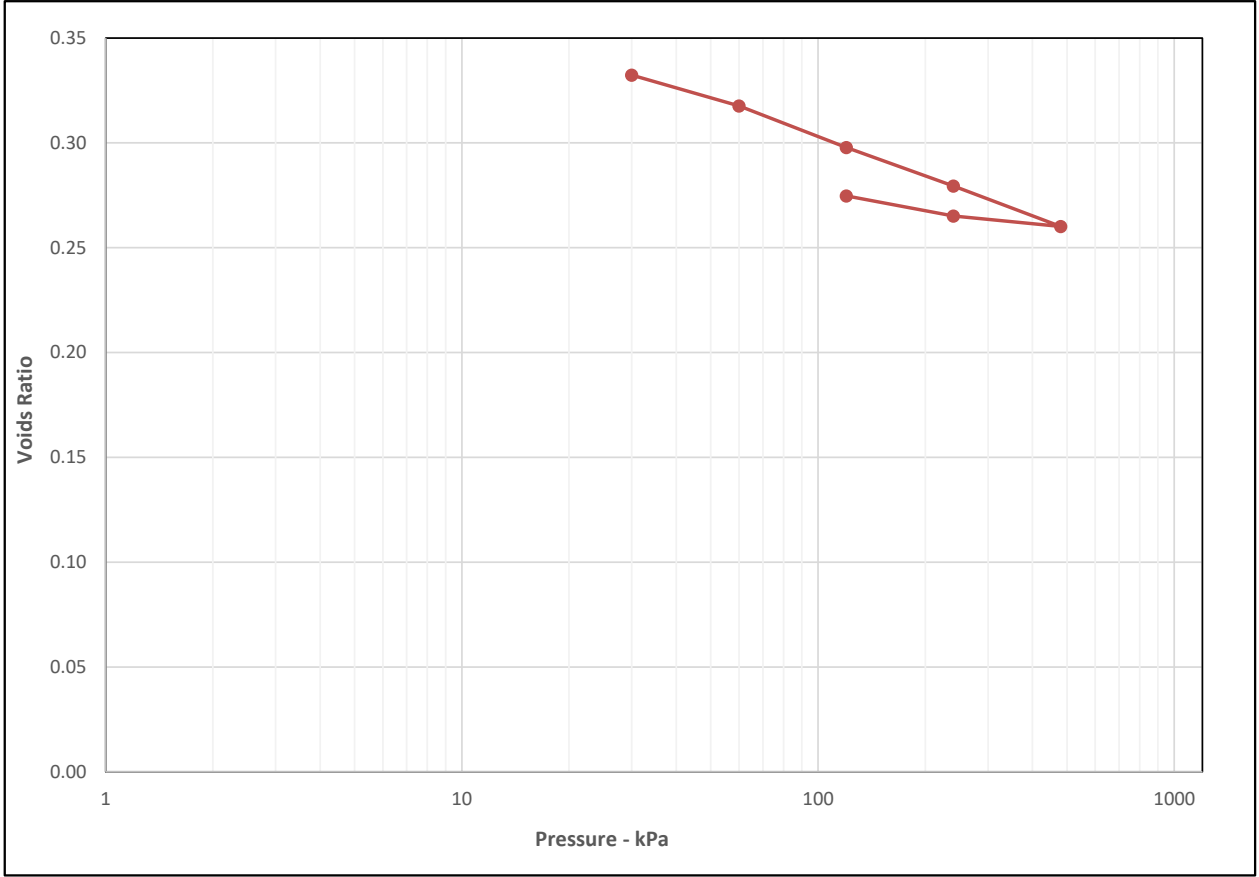


**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number 63583

Borehole/Trialpit No. ATK_BH10

Project Name	Lyneham Banks	Sample No.	115
Soil Description	Grey silty CLAY	Depth Top (m)	12.10
		Depth Base (m)	12.42
Lab Temperature	20°C	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	12/01/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	15	0	- 30	1.2	25		-		
Bulk Density (Mg/m3)	2.21	30	- 60	0.37	18		-		
Dry Density (Mg/m3)	1.91	60	- 120	0.25	6.0		-		
Voids Ratio	0.3841	120	- 240	0.12	6.3		-		
Degree of saturation	106.0	240	- 480	0.063	7.7		-		
Height (mm)	19.73	480	- 240	0.016	43		-		
Diameter (mm)	75.1	240	- 120	0.064	13		-		
Particle Density (Mg/m3)	2.65		-				-		

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number

63583

Borehole/Trialpit No.

ATK_BH11

Project Name

Lyneham Banks

Sample No.

9

Soil Description

Grey brown silty CLAY

Depth Top (m)

4.20

Depth Base (m)

4.65

Lab Temperature

20°C

Sample Location

Top

Remarks

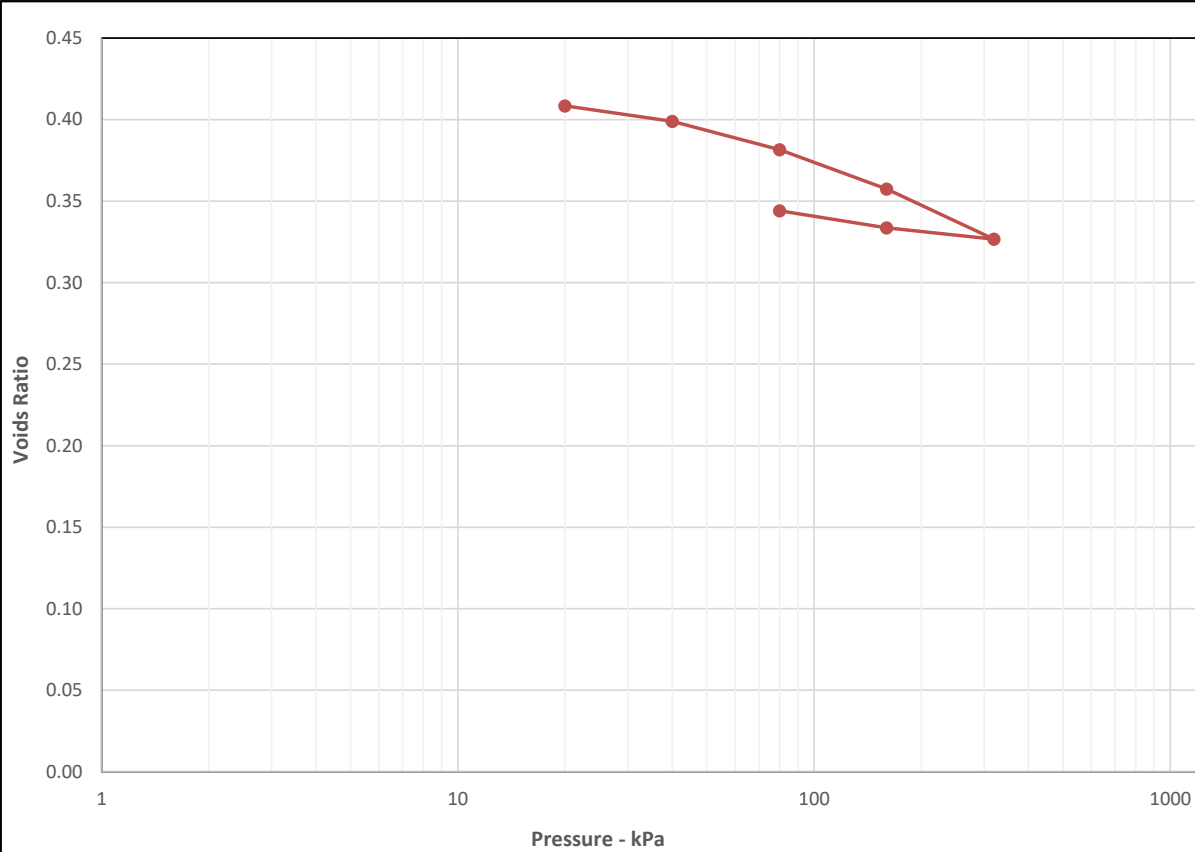
Cv Calculated Using T90
Particle Density Assumed Unless Stated Otherwise

Sample Type

UT

Date Tested

11/01/2023



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	18	0	-	20	0.81	25		-			
Bulk Density (Mg/m3)	2.19	20	-	40	0.34	7.5		-			
Dry Density (Mg/m3)	1.85	40	-	80	0.31	8.9		-			
Voids Ratio	0.4316	80	-	160	0.22	5.4		-			
Degree of saturation	111.1	160	-	320	0.14	2.5		-			
Height (mm)	18.68	320	-	160	0.033	39		-			
Diameter (mm)	75.09	160	-	80	0.098	29		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
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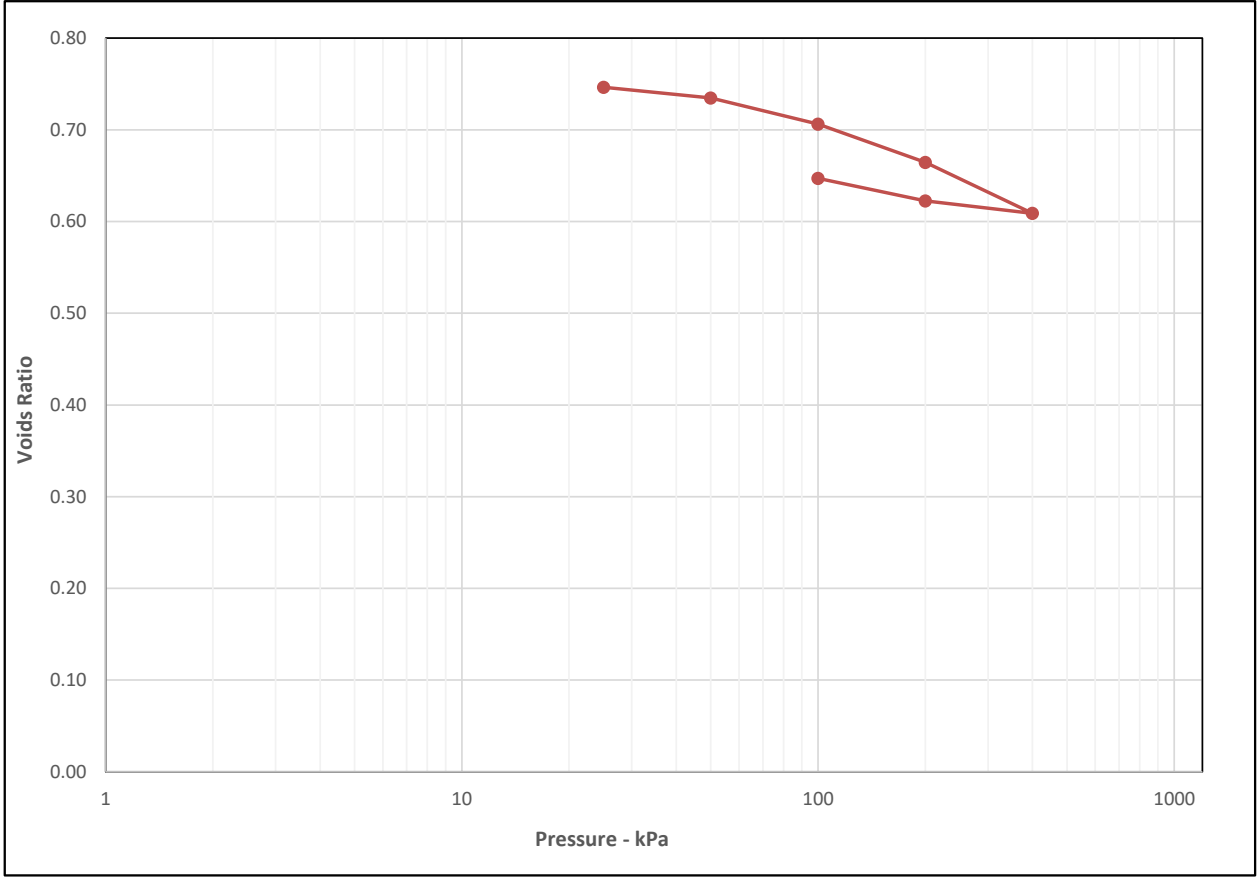


**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number 63583

Borehole/Trialpit No. ATK_BH16

Project Name	Lyneham Banks	Sample No.	5
Soil Description	Grey silty CLAY	Depth Top (m)	5.00
		Depth Base (m)	5.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	12/01/2023		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	30	0	-	25	SWELL	SWELL		-			
Bulk Density (Mg/m3)	1.98	25	-	50	0.27	4.4		-			
Dry Density (Mg/m3)	1.52	50	-	100	0.33	1.8		-			
Voids Ratio	0.7433	100	-	200	0.24	0.42		-			
Degree of saturation	108.6	200	-	400	0.17	0.35		-			
Height (mm)	20.2	400	-	200	0.043	0.77		-			
Diameter (mm)	75.29	200	-	100	0.15	0.29		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
[Redacted]

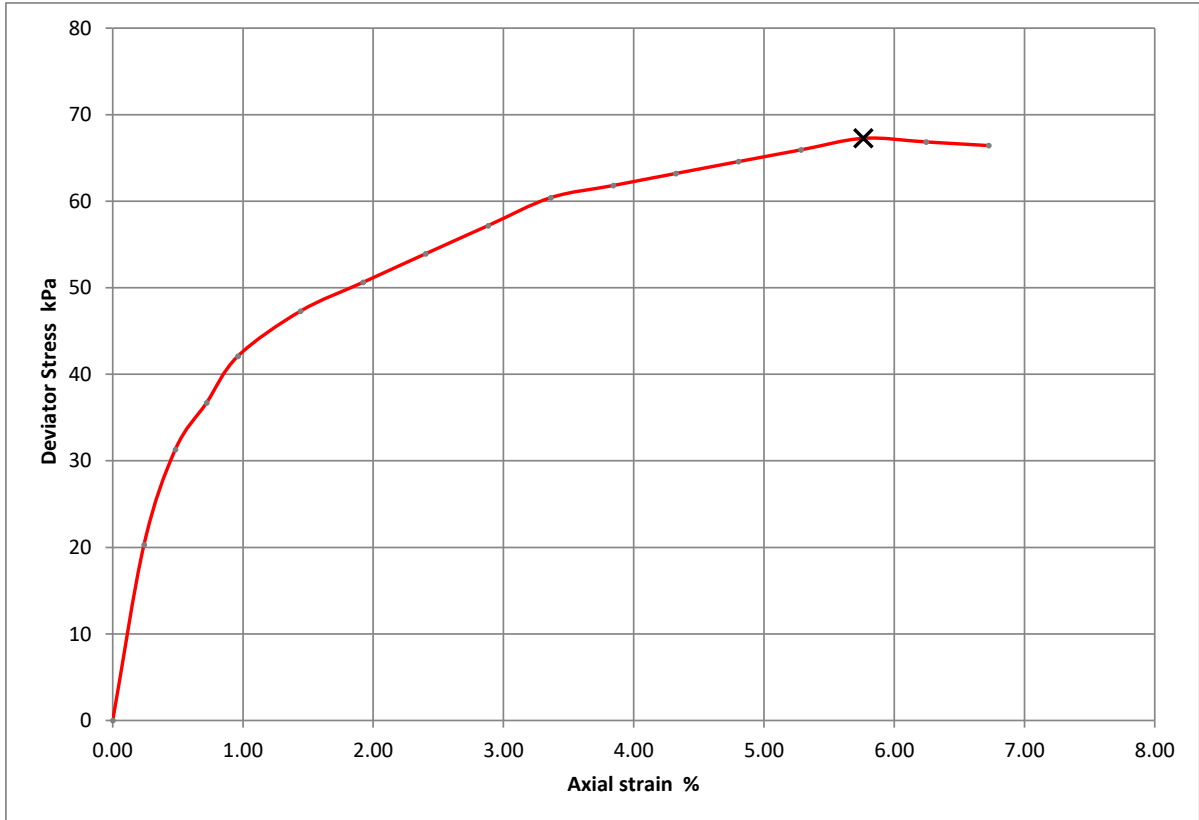




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATKRD_BH01
Sample No.	7
Depth Top (m)	2.20
Depth Base (m)	2.65
Sample Type	UT
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Brown silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	29
Bulk Density (Mg/m ³)	1.83
Dry Density (Mg/m ³)	1.42
Specimen Length (mm)	208.2
Specimen Diameter (mm)	105.4
Cell Pressure (kPa)	40
Deviator Stress (kPa)	67
Undrained Shear Strength (kPa)	34
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



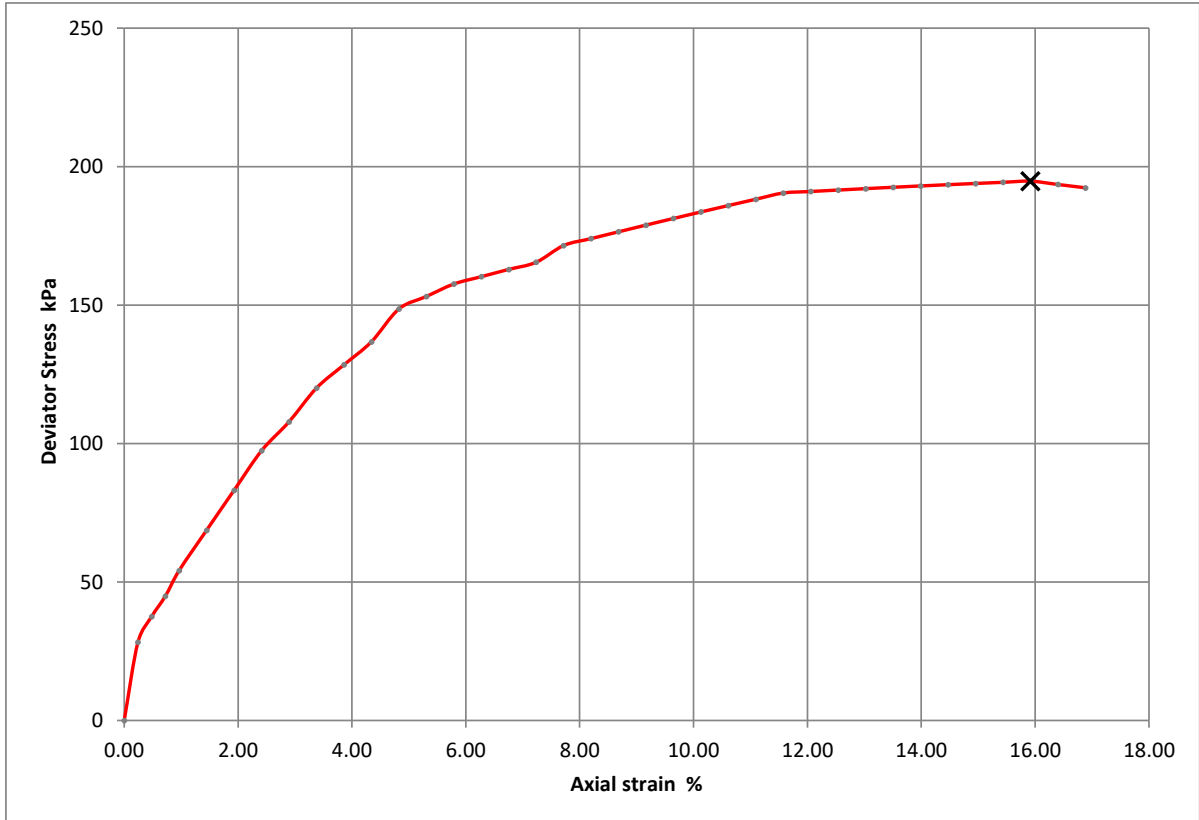
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATKRD_BH01
Sample No.	12
Depth Top (m)	4.20
Depth Base (m)	4.65
Sample Type	UT
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Brown sandy silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	16
Bulk Density (Mg/m ³)	2.07
Dry Density (Mg/m ³)	1.79
Specimen Length (mm)	207.3
Specimen Diameter (mm)	104.4
Cell Pressure (kPa)	80
Deviator Stress (kPa)	195
Undrained Shear Strength (kPa)	97
Failure Strain (%)	16
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.45

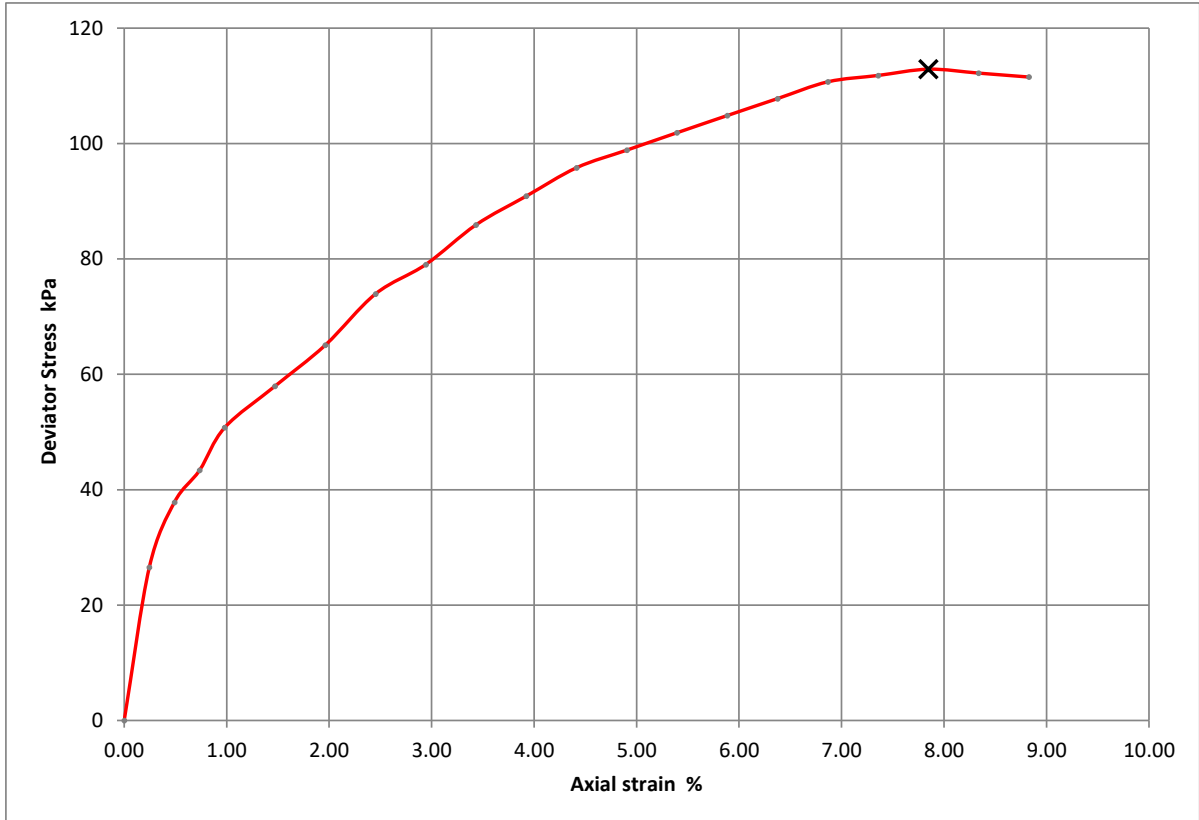




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATKRD_BH01
Sample No.	112
Depth Top (m)	11.70
Depth Base (m)	12.00
Sample Type	CS
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	17
Bulk Density (Mg/m ³)	2.07
Dry Density (Mg/m ³)	1.77
Specimen Length (mm)	203.9
Specimen Diameter (mm)	104
Cell Pressure (kPa)	220
Deviator Stress (kPa)	113
Undrained Shear Strength (kPa)	56
Failure Strain (%)	8
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.47



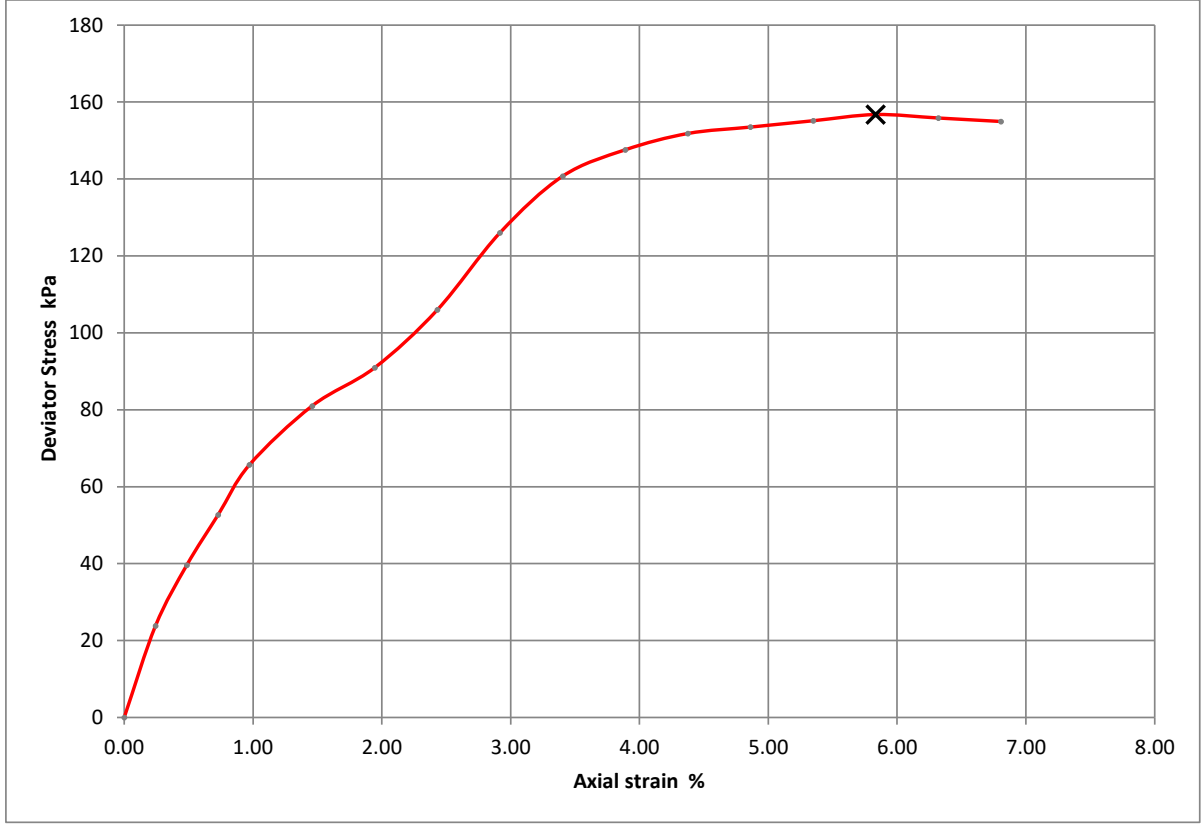
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATK_BH04
Sample No.	106
Depth Top (m)	6.80
Depth Base (m)	7.00
Sample Type	CS
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	23
Bulk Density (Mg/m ³)	2.16
Dry Density (Mg/m ³)	1.76
Specimen Length (mm)	205.7
Specimen Diameter (mm)	88
Cell Pressure (kPa)	120
Deviator Stress (kPa)	157
Undrained Shear Strength (kPa)	78
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.46





Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH04

Project Name Lyneham Banks

Sample No. 118

Soil Description Grey silty CLAY

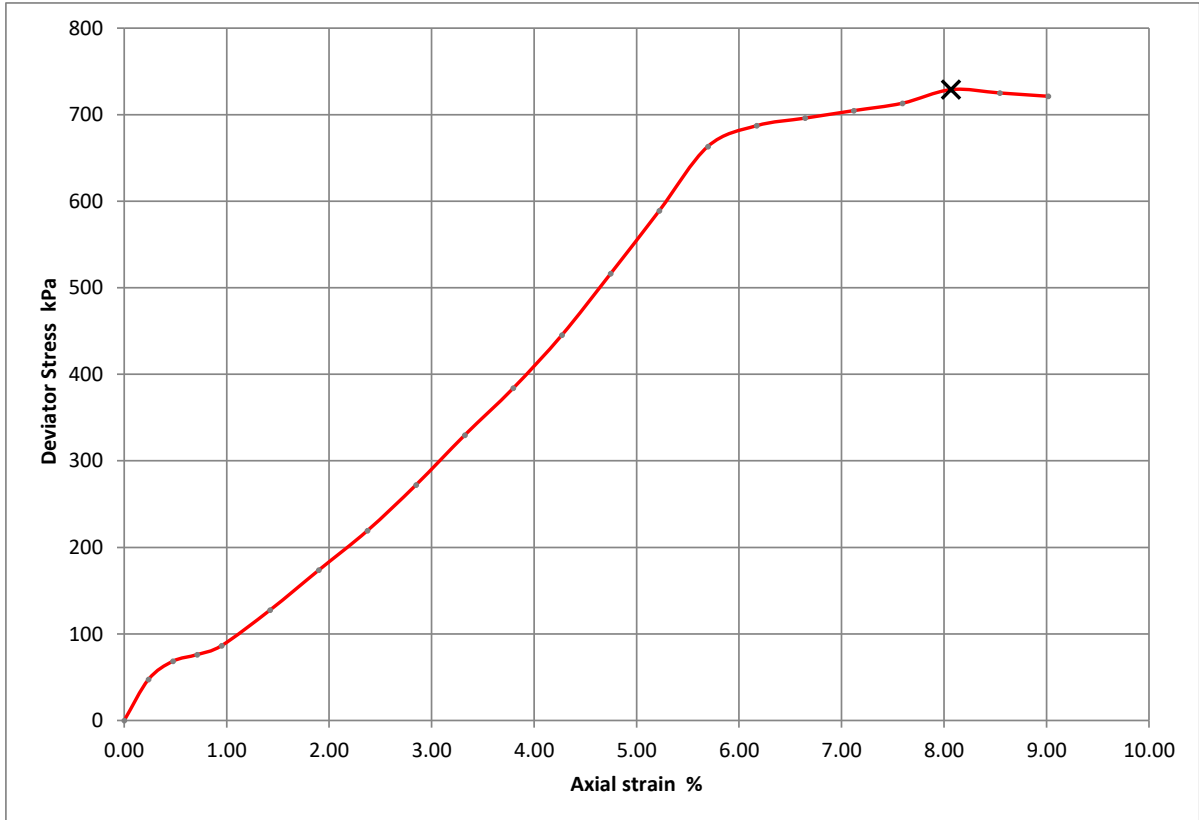
Depth Top (m) 15.50

Depth Base (m) 15.80

Date Tested 20/01/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	16
Bulk Density (Mg/m ³)	2.17
Dry Density (Mg/m ³)	1.87
Specimen Length (mm)	210.7
Specimen Diameter (mm)	88.2
Cell Pressure (kPa)	300
Deviator Stress (kPa)	729
Undrained Shear Strength (kPa)	364
Failure Strain (%)	8
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



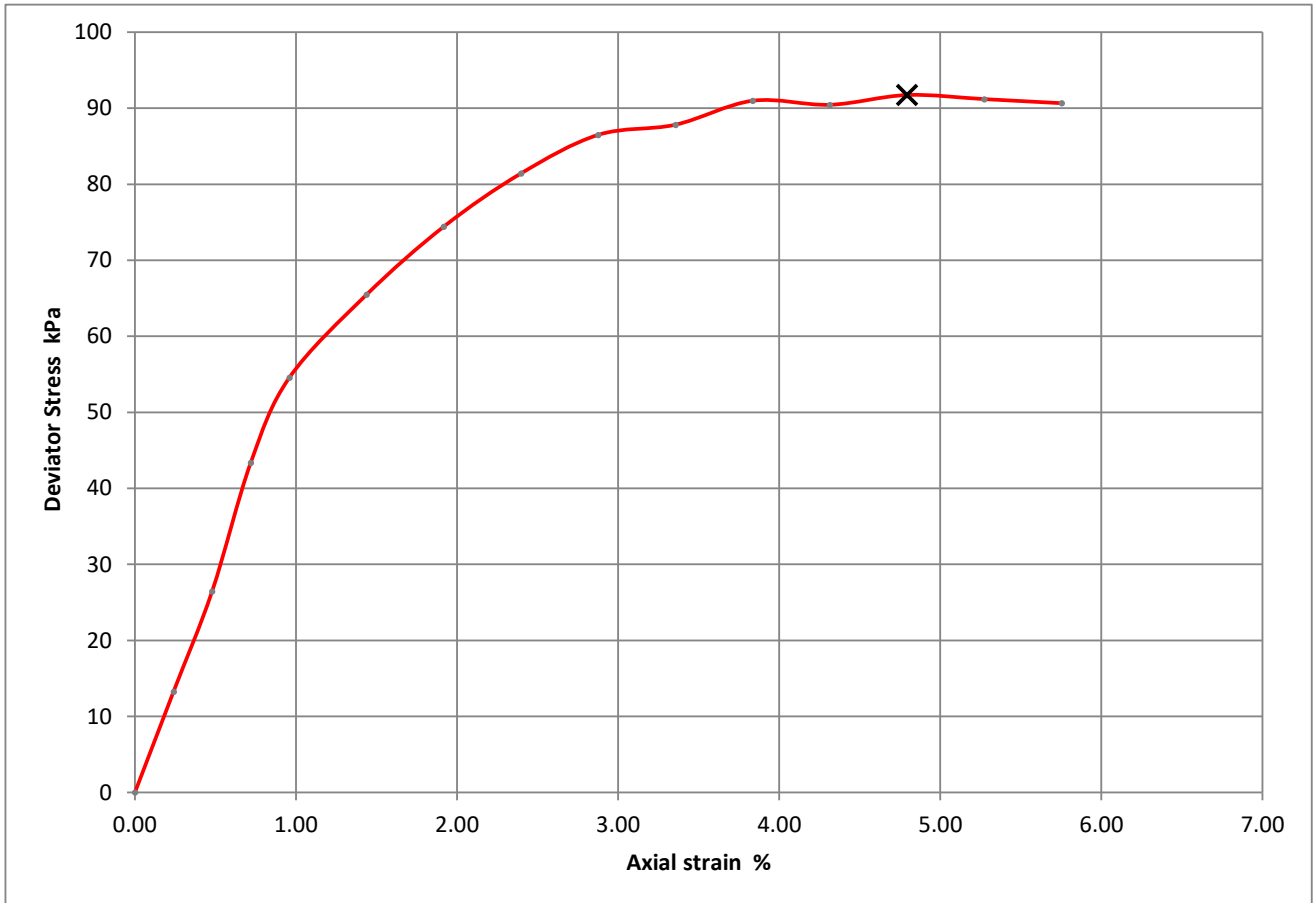
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATK_BH05
Sample No.	4
Depth Top (m)	2.00
Depth Base (m)	2.55
Sample Type	UT
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Brown silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	29
Bulk Density (Mg/m ³)	1.90
Dry Density (Mg/m ³)	1.48
Specimen Length (mm)	208.6
Specimen Diameter (mm)	104
Cell Pressure (kPa)	40
Deviator Stress (kPa)	92
Undrained Shear Strength (kPa)	46
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44





Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH05

Project Name Lyneham Banks

Sample No. 114

Soil Description Grey silty CLAY (with shell fragments)

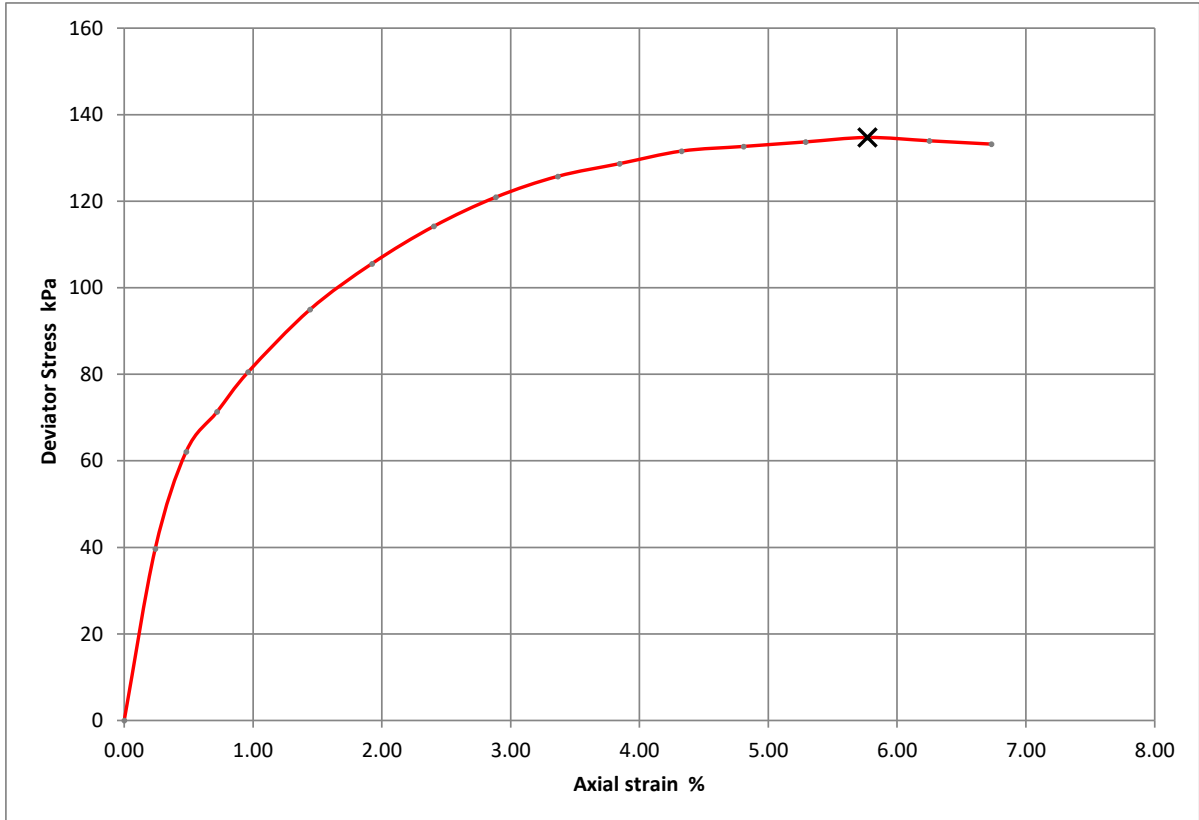
Depth Top (m) 9.50

Depth Base (m) 9.80

Date Tested 20/01/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	24
Bulk Density (Mg/m ³)	2.06
Dry Density (Mg/m ³)	1.66
Specimen Length (mm)	208
Specimen Diameter (mm)	104.3
Cell Pressure (kPa)	200
Deviator Stress (kPa)	135
Undrained Shear Strength (kPa)	67
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH05

Project Name Lyneham Banks

Sample No. 121

Soil Description Grey silty CLAY

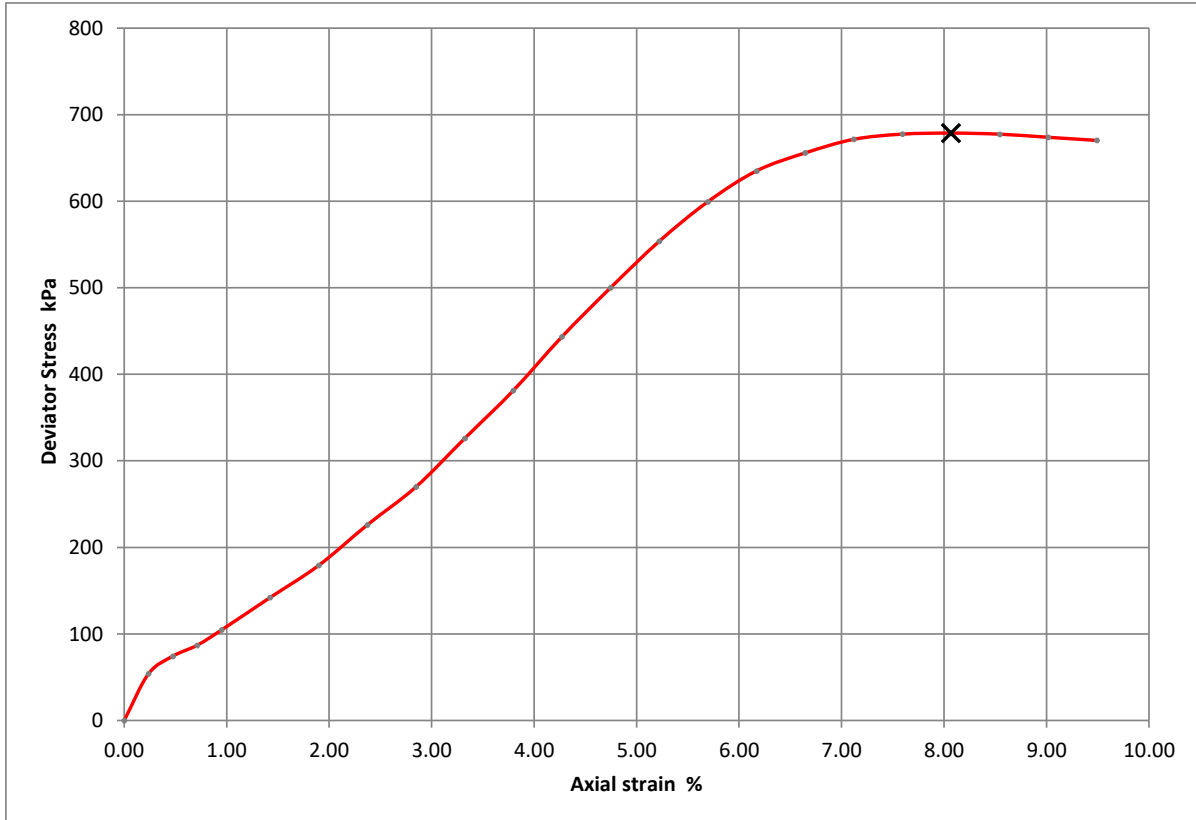
Depth Top (m) 15.20

Depth Base (m) 15.50

Date Tested 20/01/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	16
Bulk Density (Mg/m ³)	2.19
Dry Density (Mg/m ³)	1.89
Specimen Length (mm)	210.7
Specimen Diameter (mm)	89.4
Cell Pressure (kPa)	300
Deviator Stress (kPa)	679
Undrained Shear Strength (kPa)	339
Failure Strain (%)	8
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH05

Project Name Lyneham Banks

Sample No. 125

Soil Description Grey silty CLAY

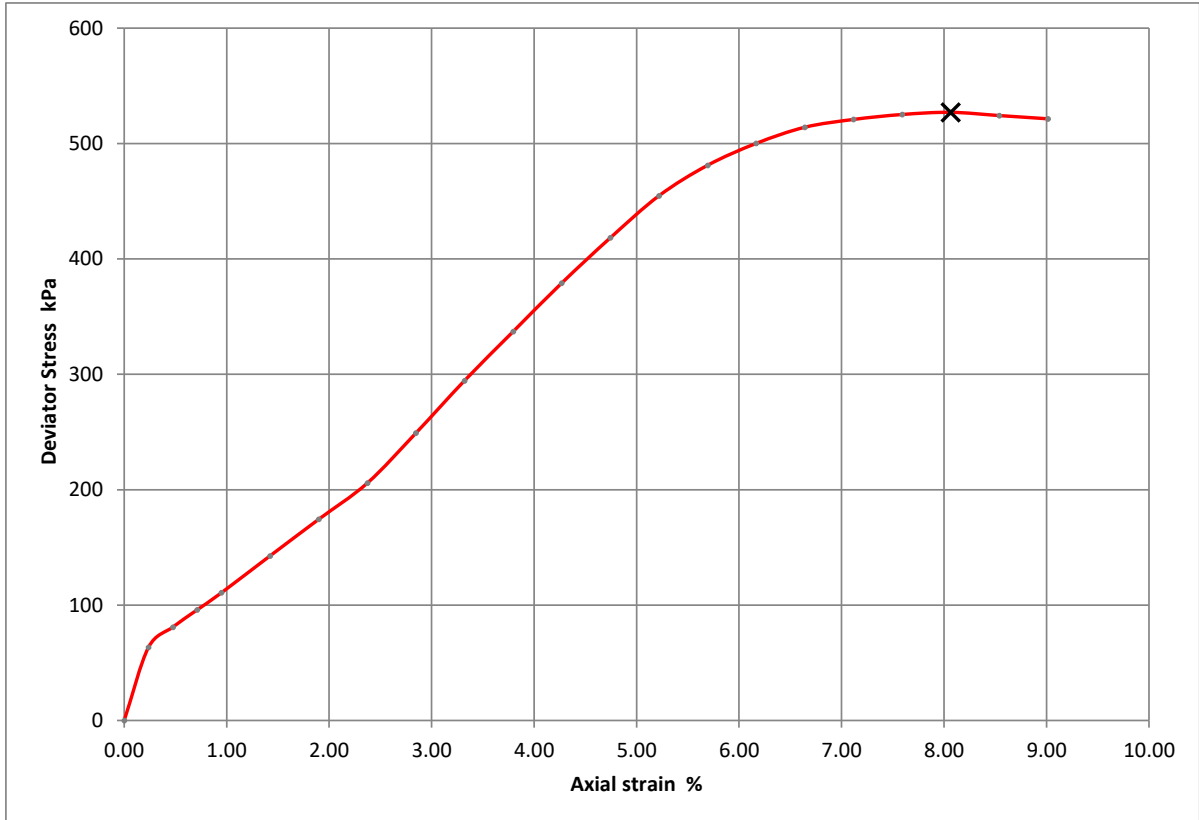
Depth Top (m) 17.40

Depth Base (m) 17.70

Date Tested 20/01/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	19
Bulk Density (Mg/m ³)	2.15
Dry Density (Mg/m ³)	1.81
Specimen Length (mm)	210.8
Specimen Diameter (mm)	90
Cell Pressure (kPa)	360
Deviator Stress (kPa)	527
Undrained Shear Strength (kPa)	264
Failure Strain (%)	8
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH08

Project Name Lyneham Banks

Sample No. 110

Soil Description Grey silty CLAY (with shell fragments)

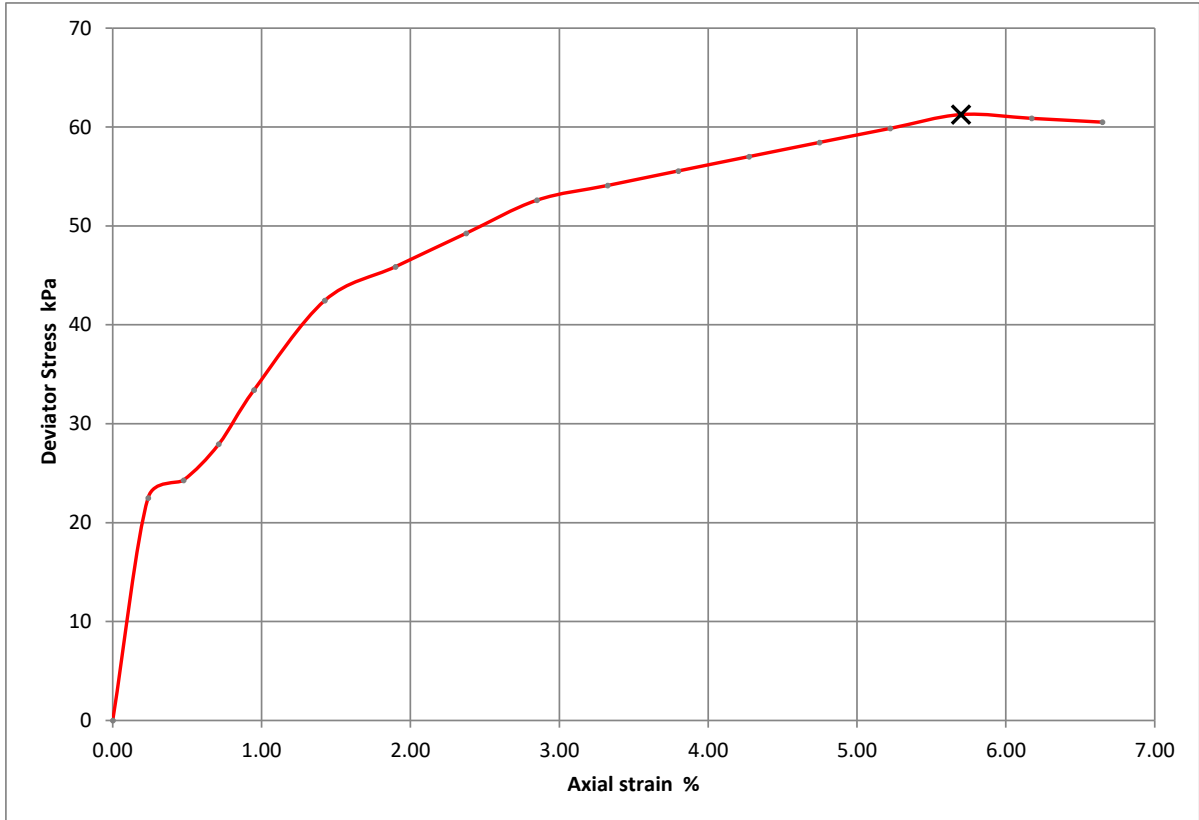
Depth Top (m) 8.70

Depth Base (m) 9.00

Date Tested 20/01/2023

Sample Type CS

Operator [REDACTED]



Moisture Content (%)	27
Bulk Density (Mg/m ³)	1.73
Dry Density (Mg/m ³)	1.36
Specimen Length (mm)	210.6
Specimen Diameter (mm)	104.6
Cell Pressure (kPa)	160
Deviator Stress (kPa)	61
Undrained Shear Strength (kPa)	31
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



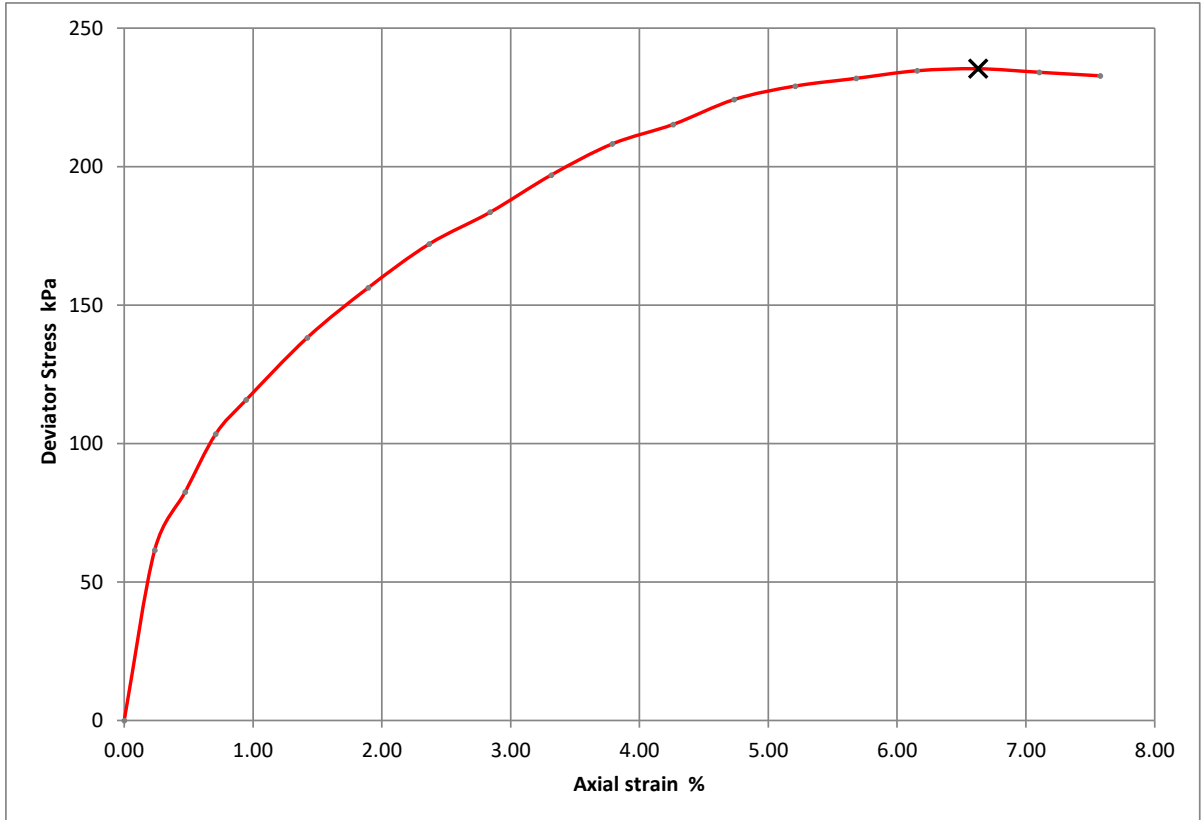
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATK_BH08
Sample No.	116
Depth Top (m)	14.20
Depth Base (m)	14.50
Sample Type	CS
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	19
Bulk Density (Mg/m ³)	2.08
Dry Density (Mg/m ³)	1.75
Specimen Length (mm)	211.2
Specimen Diameter (mm)	98.4
Cell Pressure (kPa)	280
Deviator Stress (kPa)	235
Undrained Shear Strength (kPa)	118
Failure Strain (%)	7
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42





Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH09

Project Name Lyneham Banks

Sample No. 105

Soil Description Brown silty CLAY

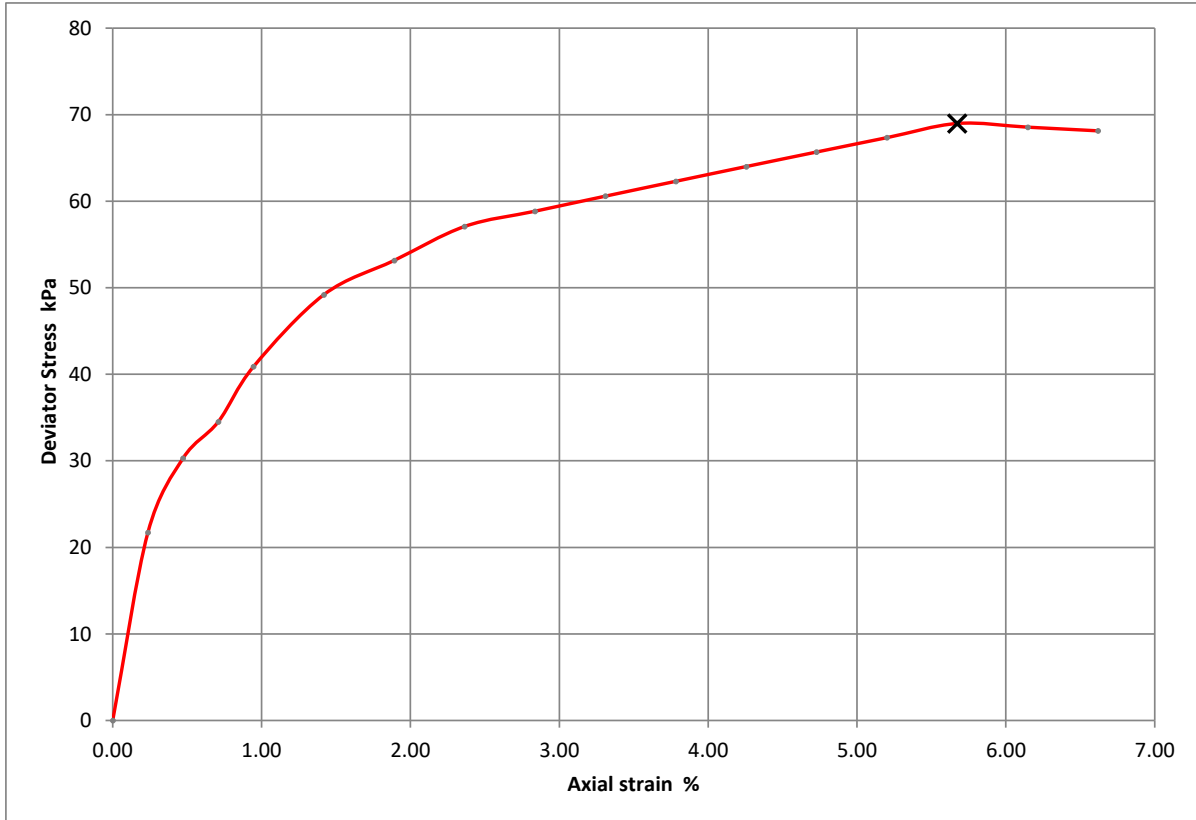
Depth Top (m) 4.80

Depth Base (m) 5.10

Date Tested 20/01/2023

Sample Type CS

Operator [REDACTED]



Moisture Content (%)	34
Bulk Density (Mg/m ³)	1.89
Dry Density (Mg/m ³)	1.41
Specimen Length (mm)	211.5
Specimen Diameter (mm)	97.2
Cell Pressure (kPa)	90
Deviator Stress (kPa)	69
Undrained Shear Strength (kPa)	34
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



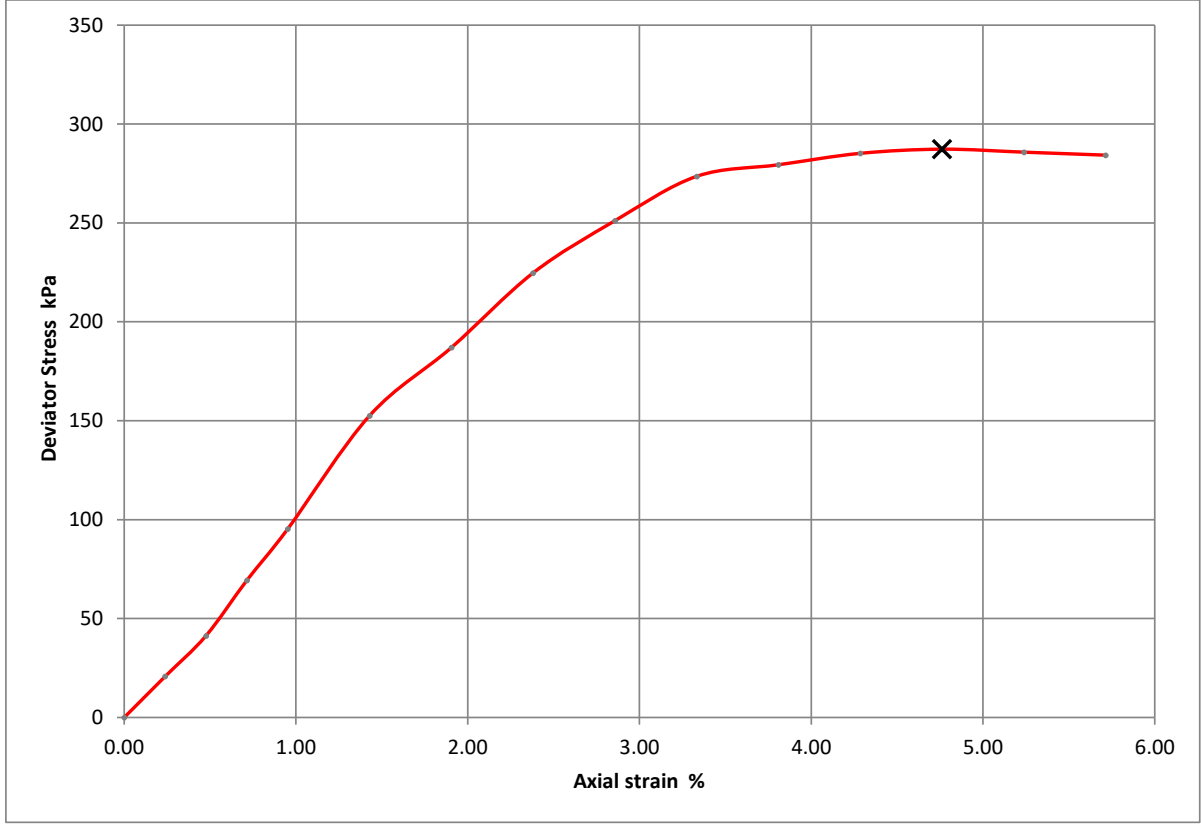
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATK_BH09
Sample No.	114
Depth Top (m)	13.70
Depth Base (m)	14.00
Sample Type	CS
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	22
Bulk Density (Mg/m ³)	1.96
Dry Density (Mg/m ³)	1.60
Specimen Length (mm)	210
Specimen Diameter (mm)	104.4
Cell Pressure (kPa)	160
Deviator Stress (kPa)	287
Undrained Shear Strength (kPa)	144
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43





Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH10

Project Name Lyneham Banks

Sample No. 5

Soil Description Brown silty CLAY

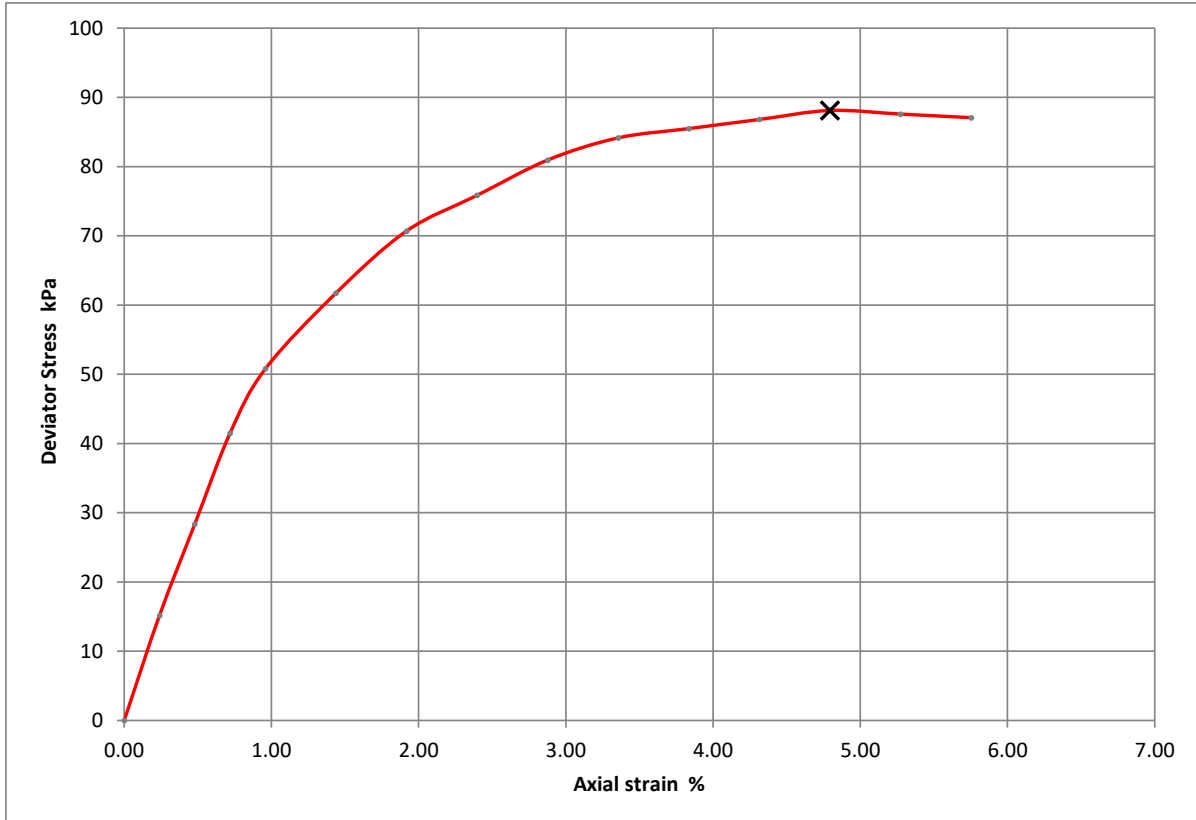
Depth Top (m) 2.20

Depth Base (m) 2.65

Date Tested 20/01/2023

Sample Type UT

Operator XXXXXXXXXX



Moisture Content (%)	25
Bulk Density (Mg/m ³)	1.90
Dry Density (Mg/m ³)	1.52
Specimen Length (mm)	208.6
Specimen Diameter (mm)	104
Cell Pressure (kPa)	40
Deviator Stress (kPa)	88
Undrained Shear Strength (kPa)	44
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH10

Project Name Lyneham Banks

Sample No. 112

Soil Description Grey silty CLAY

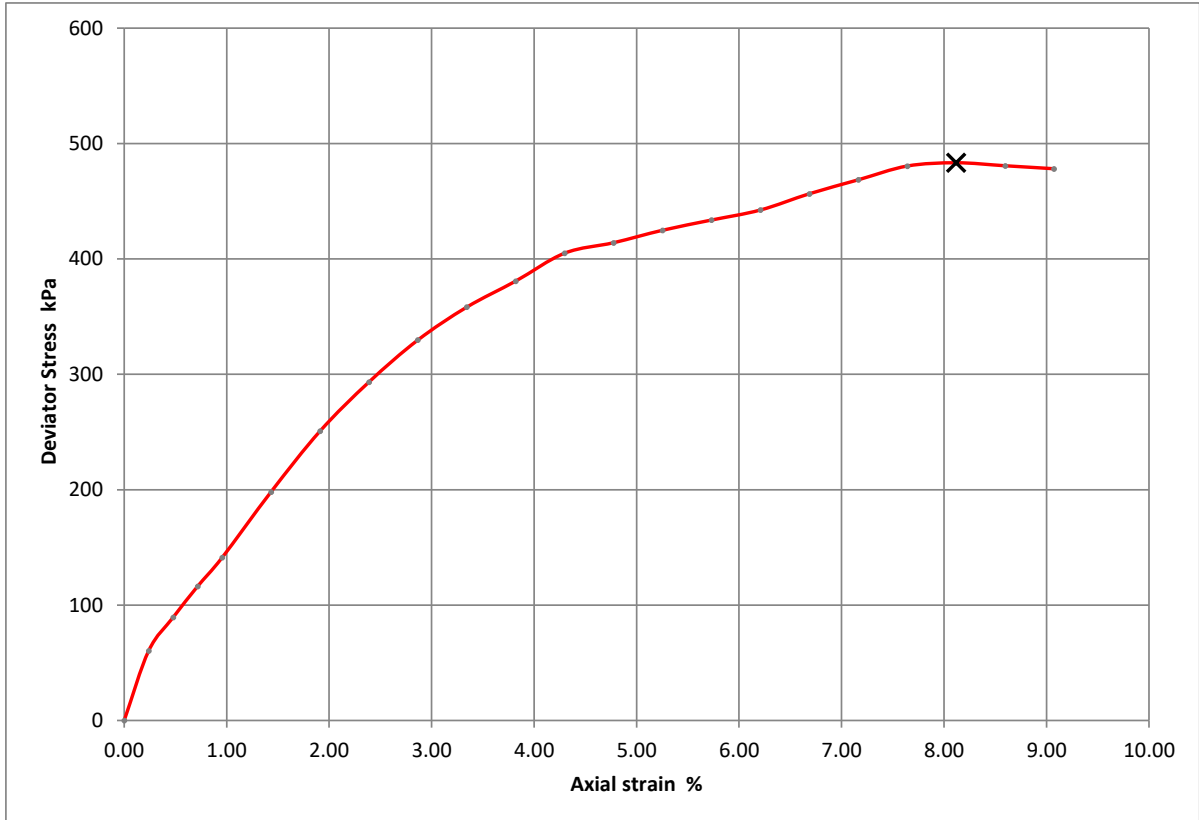
Depth Top (m) 10.39

Depth Base (m) 10.60

Date Tested 20/01/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	20
Bulk Density (Mg/m ³)	2.11
Dry Density (Mg/m ³)	1.75
Specimen Length (mm)	209.4
Specimen Diameter (mm)	102.7
Cell Pressure (kPa)	210
Deviator Stress (kPa)	483
Undrained Shear Strength (kPa)	242
Failure Strain (%)	8
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH11

Project Name Lyneham Banks

Sample No. 4

Soil Description Brown fine to medium gravelly silty CLAY

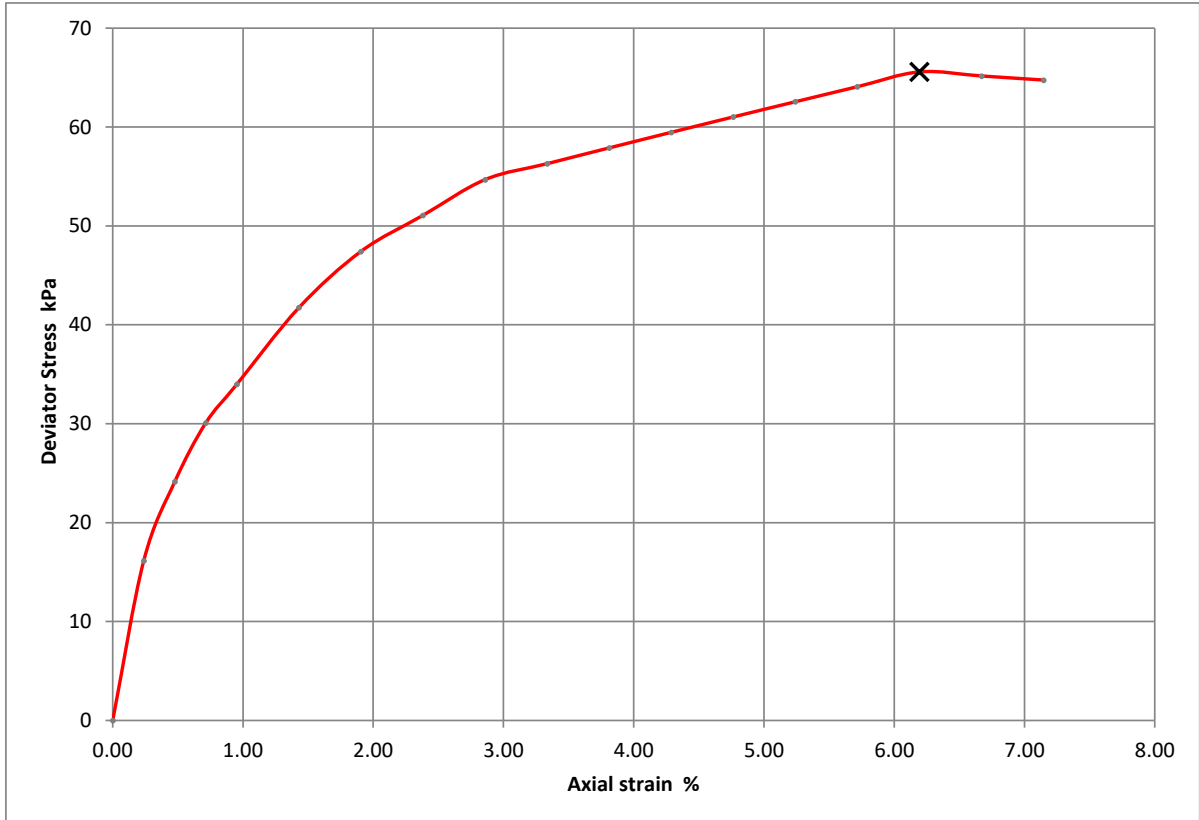
Depth Top (m) 2.20

Depth Base (m) 2.65

Date Tested 20/01/2023

Sample Type UT

Operator XXXXXXXXXX



Moisture Content (%)	29
Bulk Density (Mg/m ³)	2.05
Dry Density (Mg/m ³)	1.59
Specimen Length (mm)	209.9
Specimen Diameter (mm)	100.8
Cell Pressure (kPa)	45
Deviator Stress (kPa)	66
Undrained Shear Strength (kPa)	33
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH11

Project Name Lyneham Banks

Sample No. 110

Soil Description Grey silty CLAY

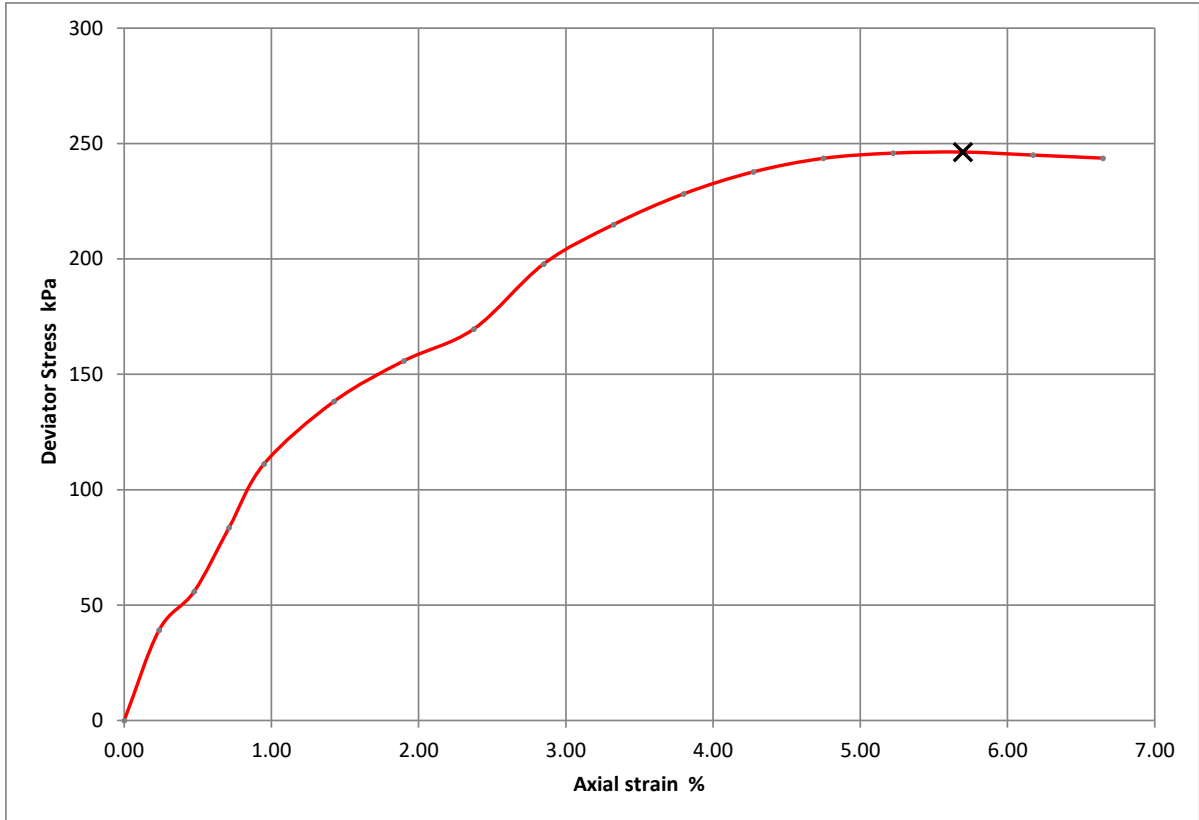
Depth Top (m) 10.10

Depth Base (m) 10.40

Date Tested 20/01/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	17
Bulk Density (Mg/m ³)	2.03
Dry Density (Mg/m ³)	1.74
Specimen Length (mm)	210.6
Specimen Diameter (mm)	104.9
Cell Pressure (kPa)	200
Deviator Stress (kPa)	246
Undrained Shear Strength (kPa)	123
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH12

Project Name Lyneham Banks

Sample No.

Soil Description Brown silty CLAY

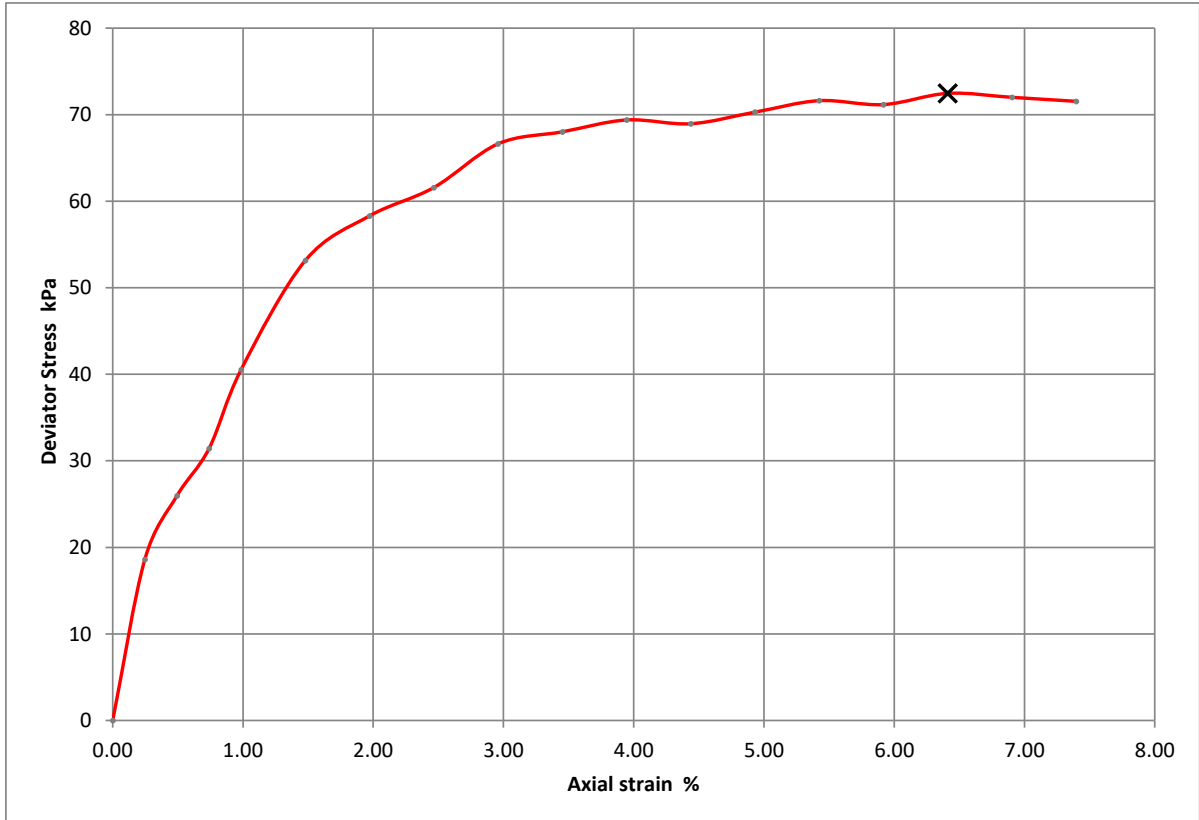
Depth Top (m) 4.00

Depth Base (m) 4.45

Date Tested 20/01/2023

Sample Type UT

Operator



Moisture Content (%)	38
Bulk Density (Mg/m ³)	1.82
Dry Density (Mg/m ³)	1.32
Specimen Length (mm)	202.8
Specimen Diameter (mm)	105
Cell Pressure (kPa)	80
Deviator Stress (kPa)	72
Undrained Shear Strength (kPa)	36
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.48



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH12

Project Name Lyneham Banks

Sample No.

Soil Description Brown sandy silty CLAY

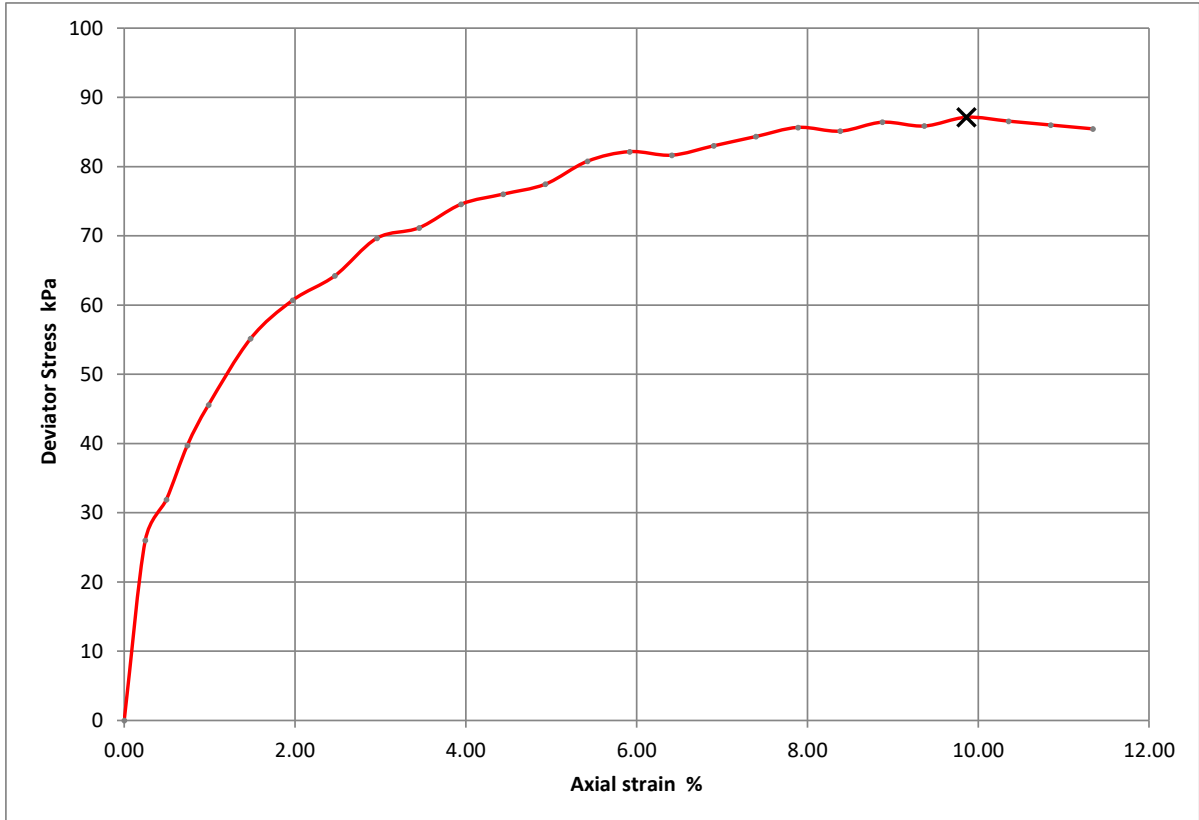
Depth Top (m) 6.00

Depth Base (m) 6.40

Date Tested 20/01/2023

Sample Type UT

Operator XXXXXXXXXX



Moisture Content (%)	34
Bulk Density (Mg/m ³)	1.82
Dry Density (Mg/m ³)	1.35
Specimen Length (mm)	202.8
Specimen Diameter (mm)	101.3
Cell Pressure (kPa)	120
Deviator Stress (kPa)	87
Undrained Shear Strength (kPa)	44
Failure Strain (%)	10
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.48



2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH13

Project Name Lyneham Banks

Sample No. 5

Soil Description Brown silty CLAY

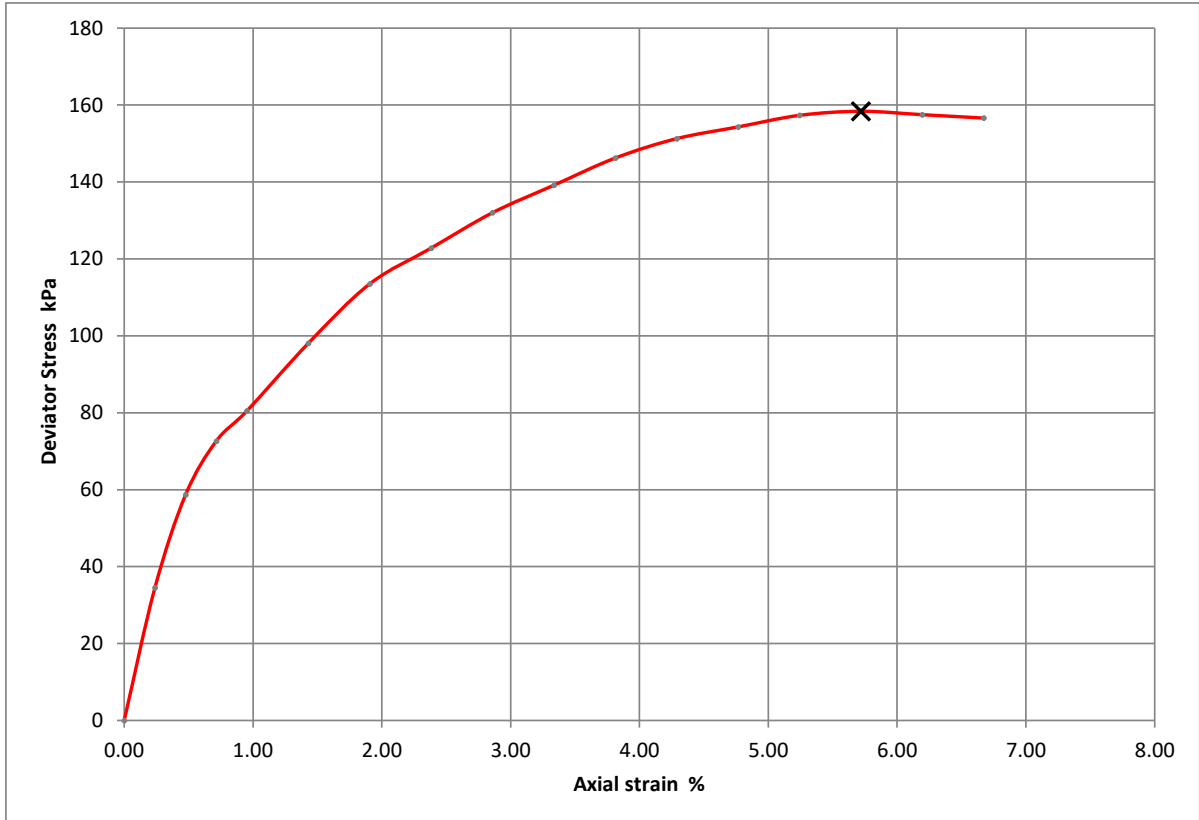
Depth Top (m) 2.50

Depth Base (m) 2.90

Date Tested 20/01/2023

Sample Type UT

Operator XXXXXXXXXX



Moisture Content (%)	22
Bulk Density (Mg/m ³)	1.97
Dry Density (Mg/m ³)	1.61
Specimen Length (mm)	209.8
Specimen Diameter (mm)	100.6
Cell Pressure (kPa)	50
Deviator Stress (kPa)	158
Undrained Shear Strength (kPa)	79
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH13

Project Name Lyneham Banks

Sample No. 7

Soil Description Brown silty CLAY

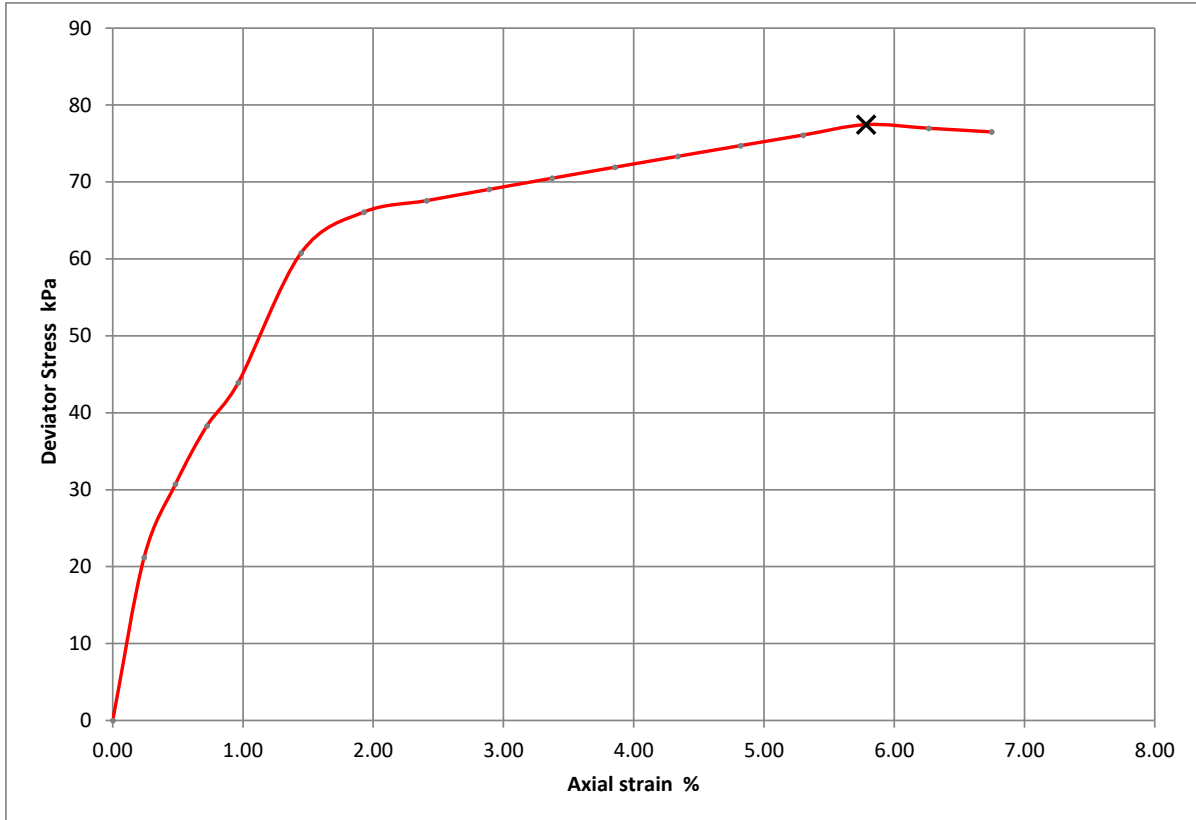
Depth Top (m) 3.50

Depth Base (m) 4.00

Date Tested 20/01/2023

Sample Type UT

Operator XXXXXXXXXX



Moisture Content (%)	31
Bulk Density (Mg/m ³)	1.83
Dry Density (Mg/m ³)	1.40
Specimen Length (mm)	207.5
Specimen Diameter (mm)	103.2
Cell Pressure (kPa)	70
Deviator Stress (kPa)	77
Undrained Shear Strength (kPa)	39
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.45



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH13

Project Name Lyneham Banks

Sample No. 11

Soil Description Brown fine to medium gravelly sandy silty CLAY

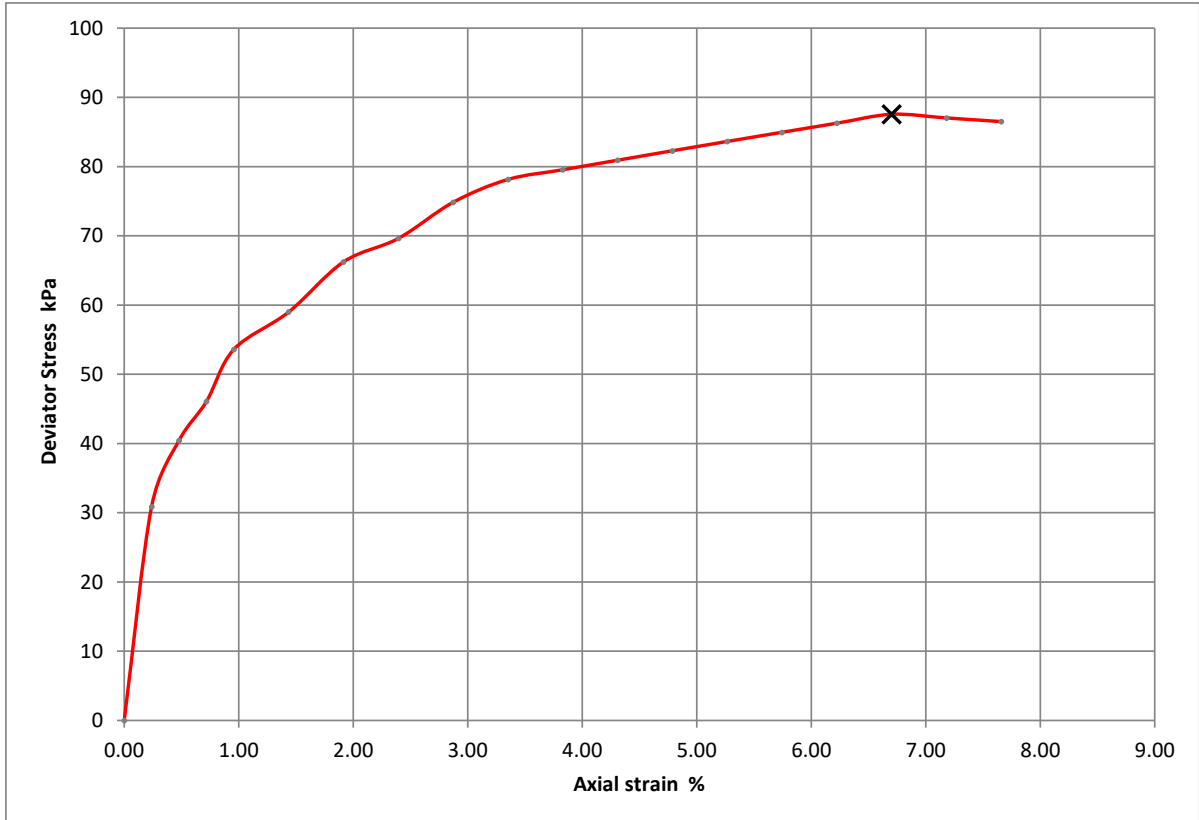
Depth Top (m) 5.00

Depth Base (m) 5.40

Date Tested 20/01/2023

Sample Type UT

Operator XXXXXXXXXX



Moisture Content (%)	26
Bulk Density (Mg/m ³)	1.87
Dry Density (Mg/m ³)	1.48
Specimen Length (mm)	208.9
Specimen Diameter (mm)	103.1
Cell Pressure (kPa)	100
Deviator Stress (kPa)	88
Undrained Shear Strength (kPa)	44
Failure Strain (%)	7
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



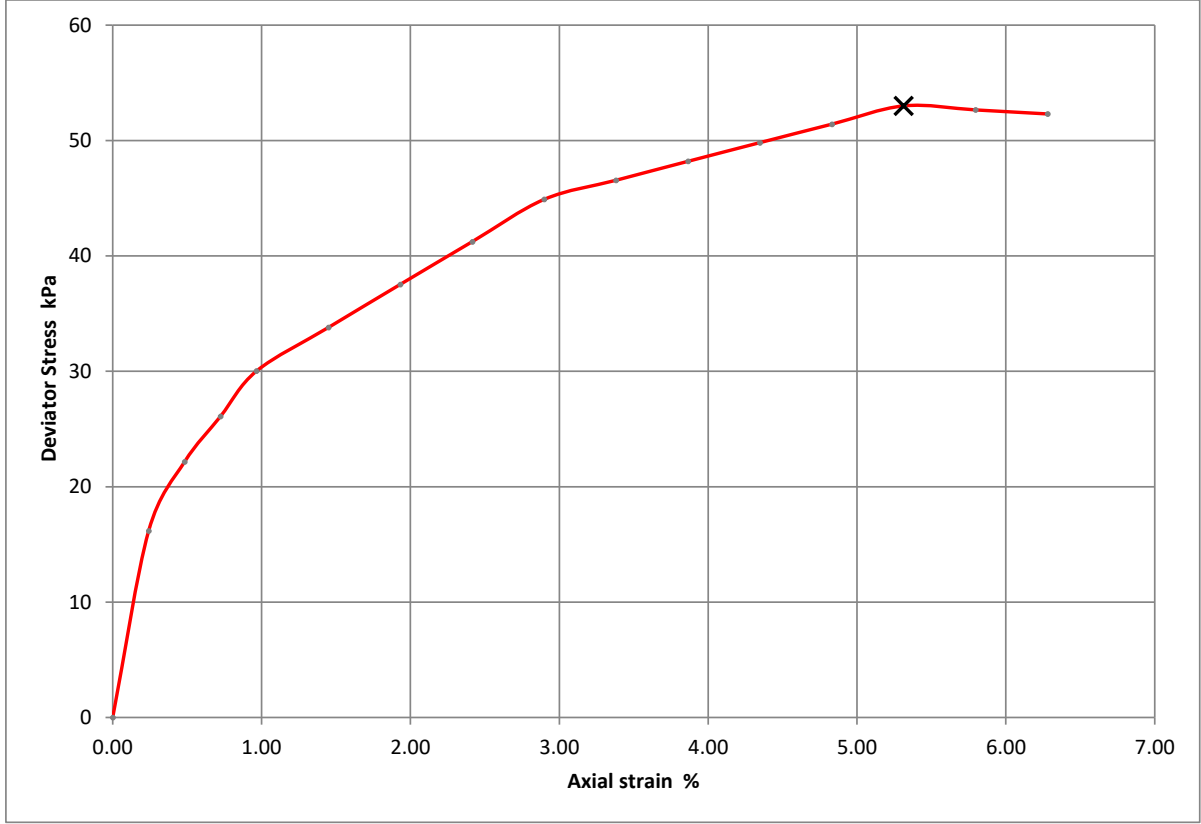
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATK_BH15
Sample No.	4
Depth Top (m)	2.00
Depth Base (m)	2.45
Sample Type	UT
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Brown silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	34
Bulk Density (Mg/m ³)	1.88
Dry Density (Mg/m ³)	1.40
Specimen Length (mm)	207
Specimen Diameter (mm)	100.7
Cell Pressure (kPa)	40
Deviator Stress (kPa)	53
Undrained Shear Strength (kPa)	27
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.45



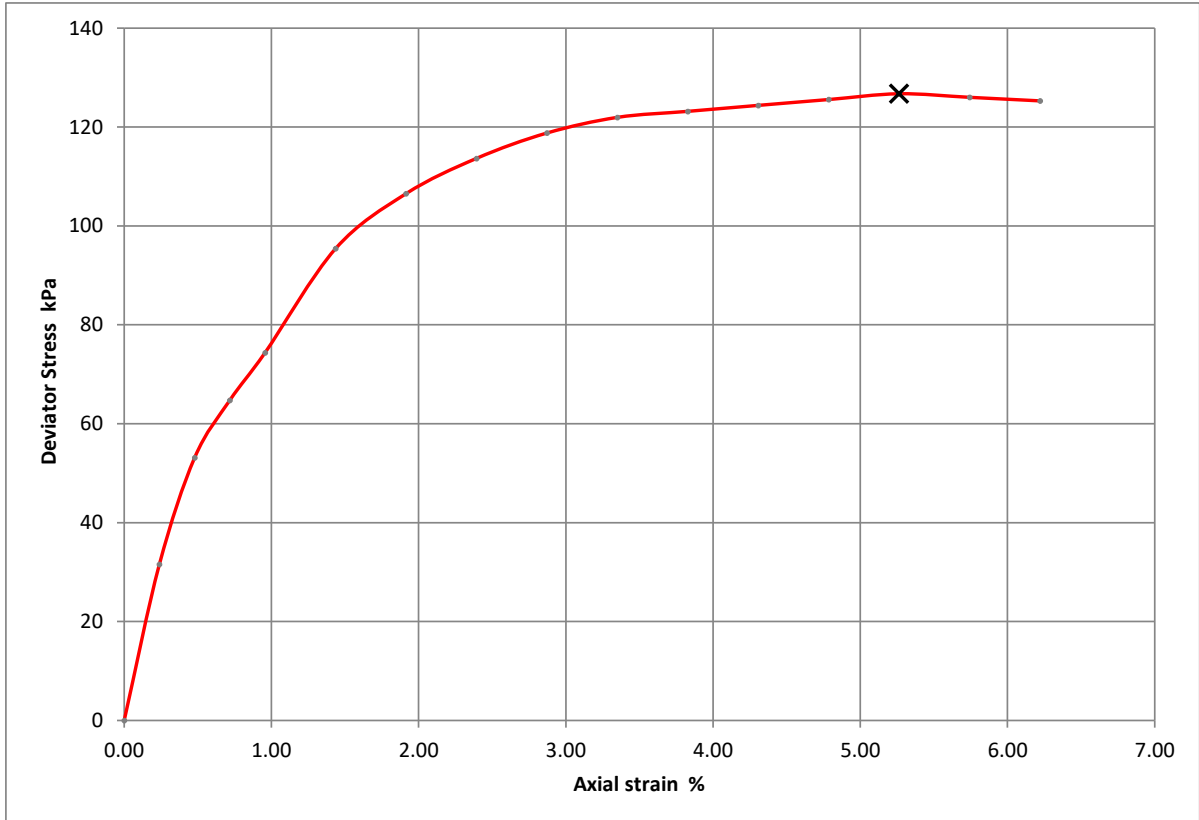
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63583
Borehole/Pit No.	ATK_BH15
Sample No.	113
Depth Top (m)	13.10
Depth Base (m)	13.40
Sample Type	CS
Operator	██████████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	20/01/2023



Moisture Content (%)	18
Bulk Density (Mg/m ³)	2.12
Dry Density (Mg/m ³)	1.80
Specimen Length (mm)	209
Specimen Diameter (mm)	102
Cell Pressure (kPa)	260
Deviator Stress (kPa)	127
Undrained Shear Strength (kPa)	63
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH16

Project Name Lyneham Banks

Sample No. 104

Soil Description Brown fine to medium gravelly silty CLAY

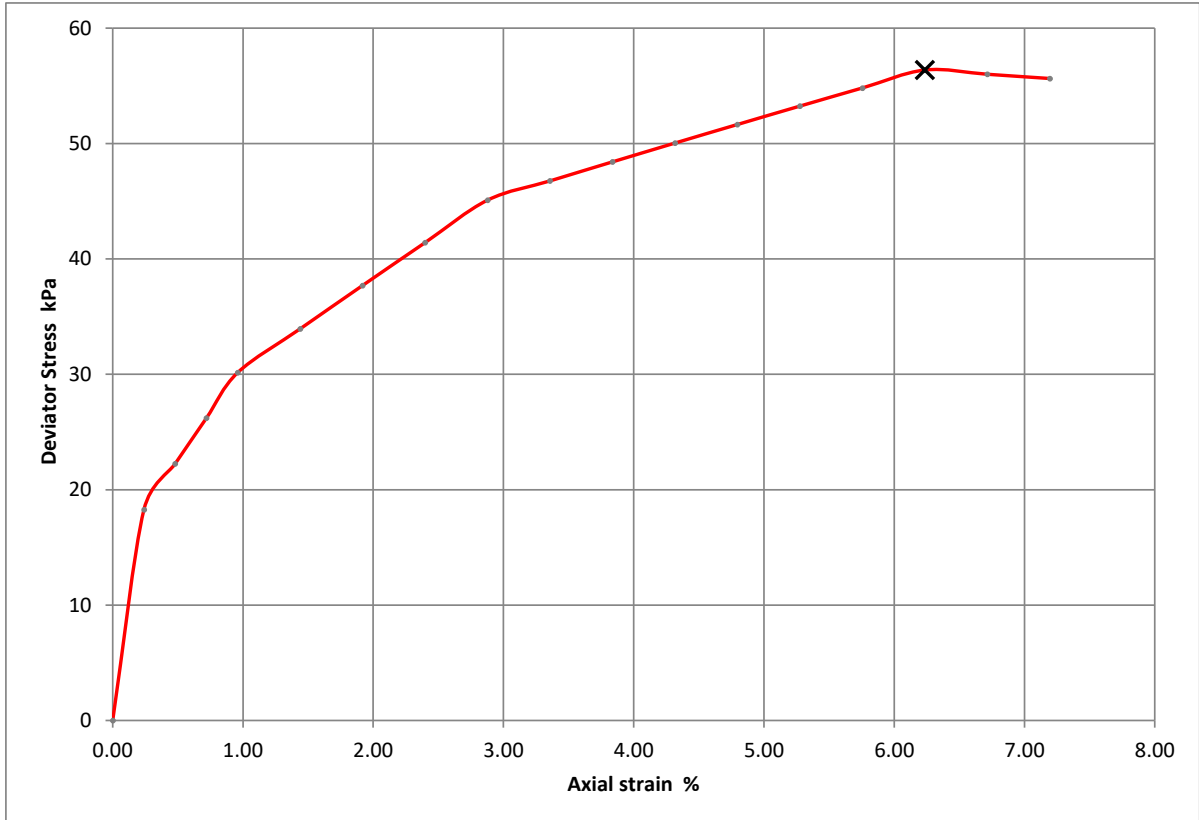
Depth Top (m) 2.60

Depth Base (m) 2.90

Date Tested 20/01/2023

Sample Type CS

Operator [REDACTED]



Moisture Content (%)	29
Bulk Density (Mg/m ³)	1.99
Dry Density (Mg/m ³)	1.54
Specimen Length (mm)	208.5
Specimen Diameter (mm)	100.5
Cell Pressure (kPa)	50
Deviator Stress (kPa)	56
Undrained Shear Strength (kPa)	28
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH16

Project Name Lyneham Banks

Sample No. 4

Soil Description Brown fine to medium gravelly sandy silty CLAY

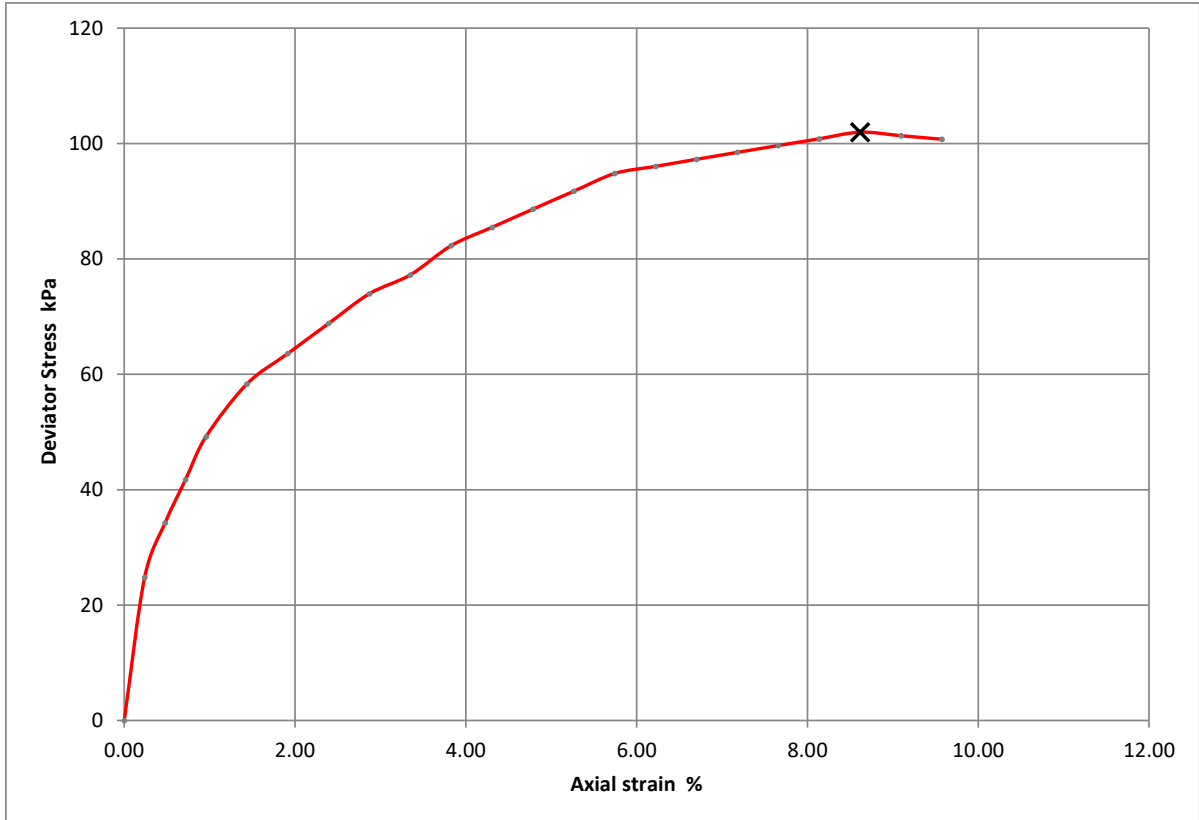
Depth Top (m) 4.00

Depth Base (m) 4.45

Date Tested 20/01/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	34
Bulk Density (Mg/m ³)	1.81
Dry Density (Mg/m ³)	1.35
Specimen Length (mm)	208.9
Specimen Diameter (mm)	103.7
Cell Pressure (kPa)	80
Deviator Stress (kPa)	102
Undrained Shear Strength (kPa)	51
Failure Strain (%)	9
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63583

Borehole/Pit No. ATK_BH16

Project Name Lyneham Banks

Sample No. 9

Soil Description Brown silty CLAY

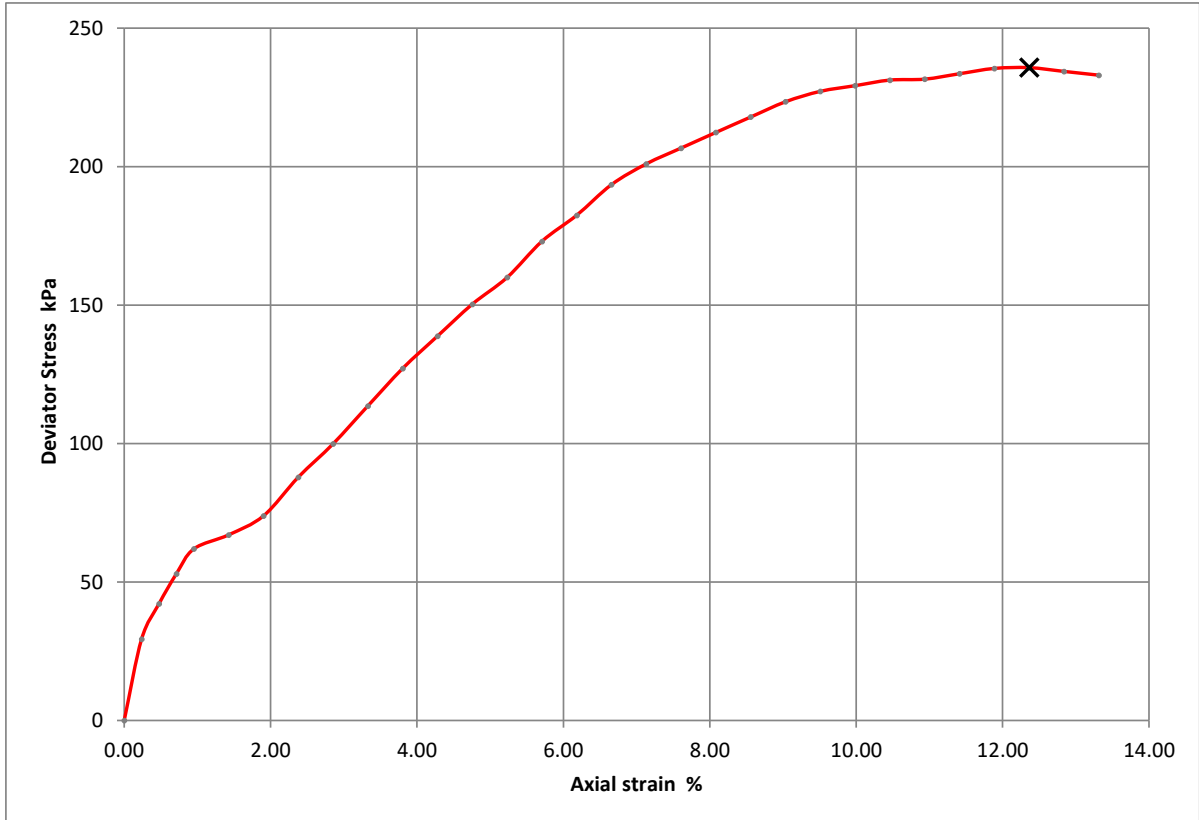
Depth Top (m) 7.70

Depth Base (m) 8.15

Date Tested 20/01/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	28
Bulk Density (Mg/m ³)	1.63
Dry Density (Mg/m ³)	1.27
Specimen Length (mm)	210.3
Specimen Diameter (mm)	105.7
Cell Pressure (kPa)	150
Deviator Stress (kPa)	236
Undrained Shear Strength (kPa)	118
Failure Strain (%)	12
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

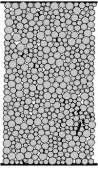


2788

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report


Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">3.0-3.6</td> </tr> <tr> <td>Description</td> <td colspan="3">Brown, Fine to Coarse Gravel, Silty, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>212.1</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.3</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3226.2</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.75</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	3.0-3.6			Description	Brown, Fine to Coarse Gravel, Silty, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	212.1	Initial Sample Diameter	D_0	(mm)	105.3	Initial Sample Weight	W_0	(gr)	3226.2	Initial Bulk Density	ρ_0	(Mg/m ³)	1.75	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	3.0-3.6																																
Description	Brown, Fine to Coarse Gravel, Silty, CLAY																																
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Initial Bulk Density	ρ_0	(Mg/m ³)	1.75																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														


Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	630	660	720	
Initial Back Pressure	U_{bi}	(kPa)	600	600	600	
Strain Rate	m_s	(mm/min)	0.08795	0.00053	0.02900	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	ω_i	(%)	36			
Initial Dry Density	ρ_{di}	(Mg/m ³)	1.29			
Initial Voids Ratio	e_i	.	1.059			
Initial Degree of Saturation	S_i	(%)	89			
B Value	B	.	1.00			

Final Conditions			Stage 1	2	3	4
Final Moisture	ω_f	(%)	33			
Final Dry Density	ρ_{df}	(Mg/m ³)	1.39			
Final Voids Ratio	e_f	.	0.910			
Final Degree of Saturation	S_f	(%)	96.6			
Failure Criteria	.	.	Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)	3.46	5.48	9.61	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)	45.4	68.9	96.3	
Minor Stress At Failure	σ_3'	(kPa)	15.7	58.0	107.3	
Major Stress At Failure	σ_1'	(kPa)	61.1	126.9	203.5	
Principal Stress At Failure	σ_1' / σ_3'		3.893	2.189	1.897	
PwP At Failure Criteria	u_f		614.8	602.0	612.7	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.32	3.32	3.32
Membrane Correction at Failure (kpa)	0.36	0.57	0.82


 Plastic

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 8	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH04	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	3.0-3.6	
Operator	██████████	Checked	██████████	Approved	██████████


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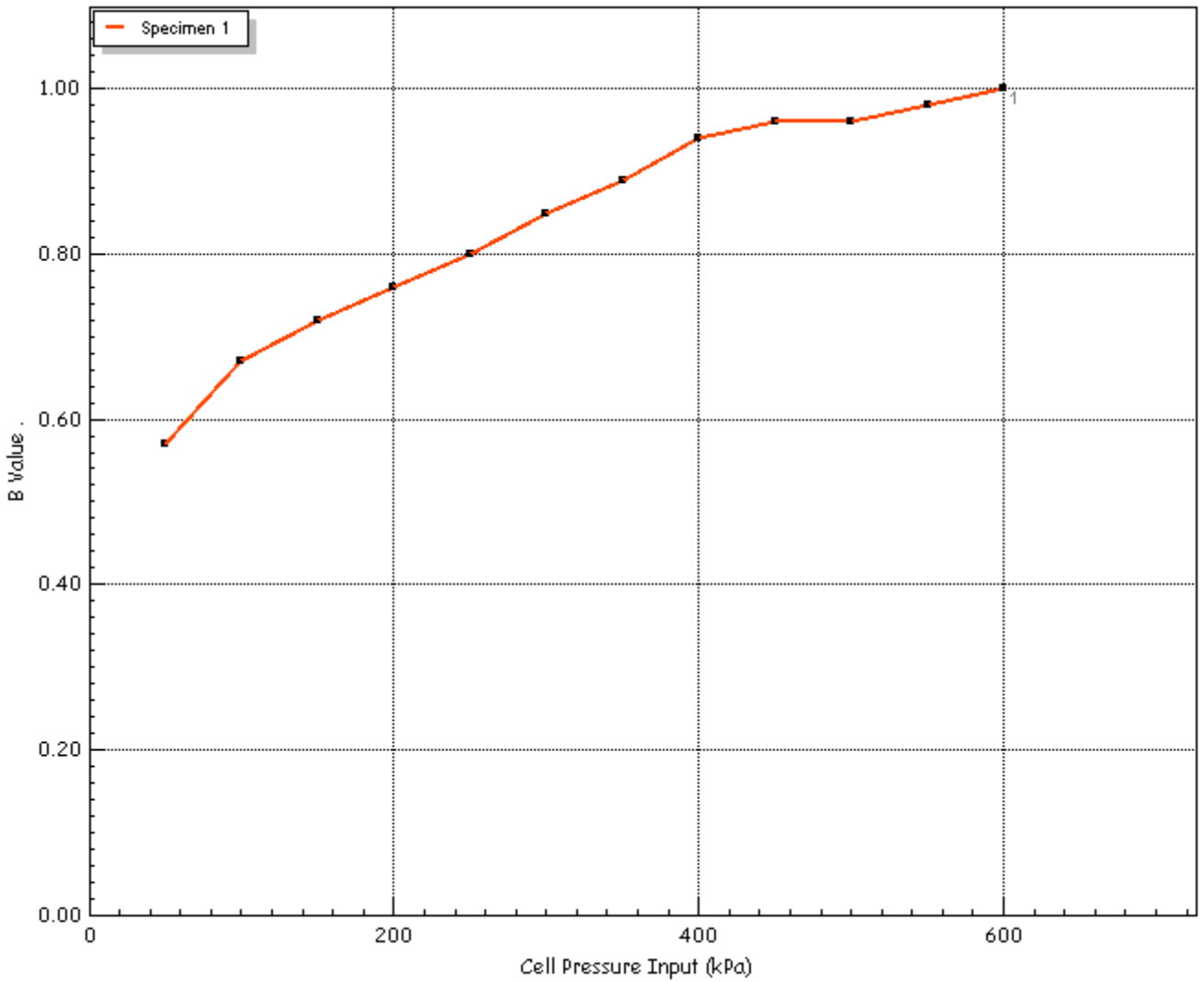
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	600
Pore Water Pressure Input	u_{pwp}	(kPa)	587
B Value	B	.	1.00



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 8	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH04	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	3.0-3.6	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

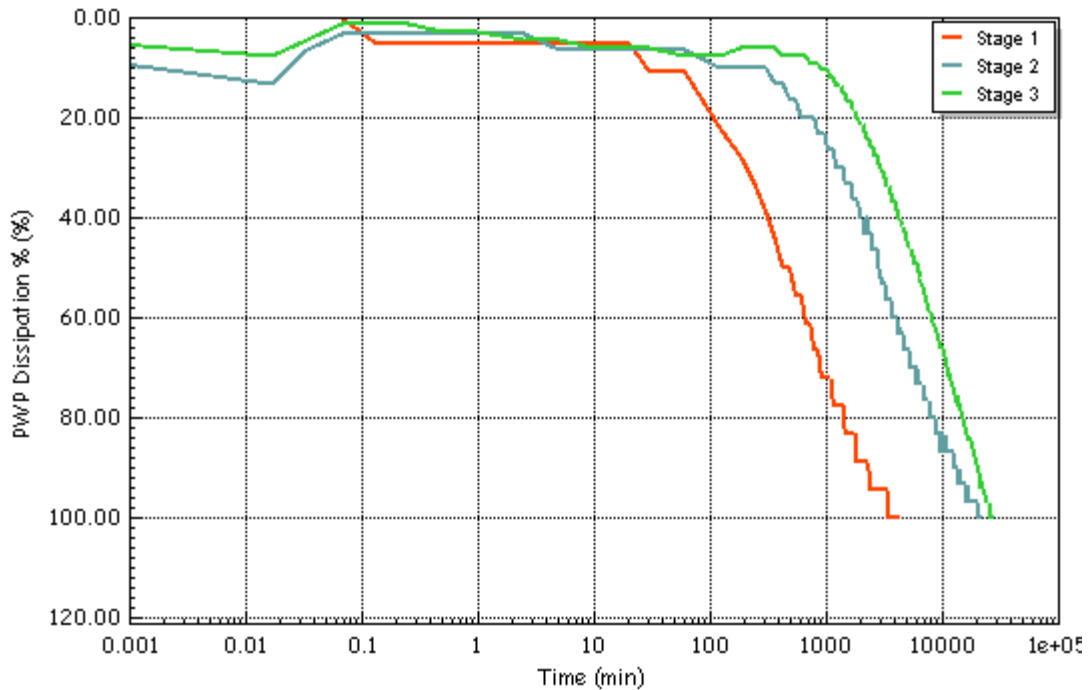
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	630	660	720
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	618	630	665
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	1.43	2.46	3.34
Corrected Length	L_c	(mm)	211.1	202.1	194.8
Corrected Area	A_c	(cm ²)	86.26	87.85	88.01
Corrected Volume	V_c	(cc)	1820.672	1775.288	1713.589
t100	t_{100}	(min)	27.84	10521.46	18778.59
Consolidation	c_v	(m ² /year)	0.081	0.000	0.000
Compressibility	m_v	(m ² /MN)	0.79	0.82	0.51
Test Time	t_F	(h:m:s)	02:00:00	315:38:37	563:21:27
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08795	0.00053	0.00029

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 8	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH04	
	Jobfile	63583	Sample	6	
Client	SOCOTEC	Depth	3.0-3.6		
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

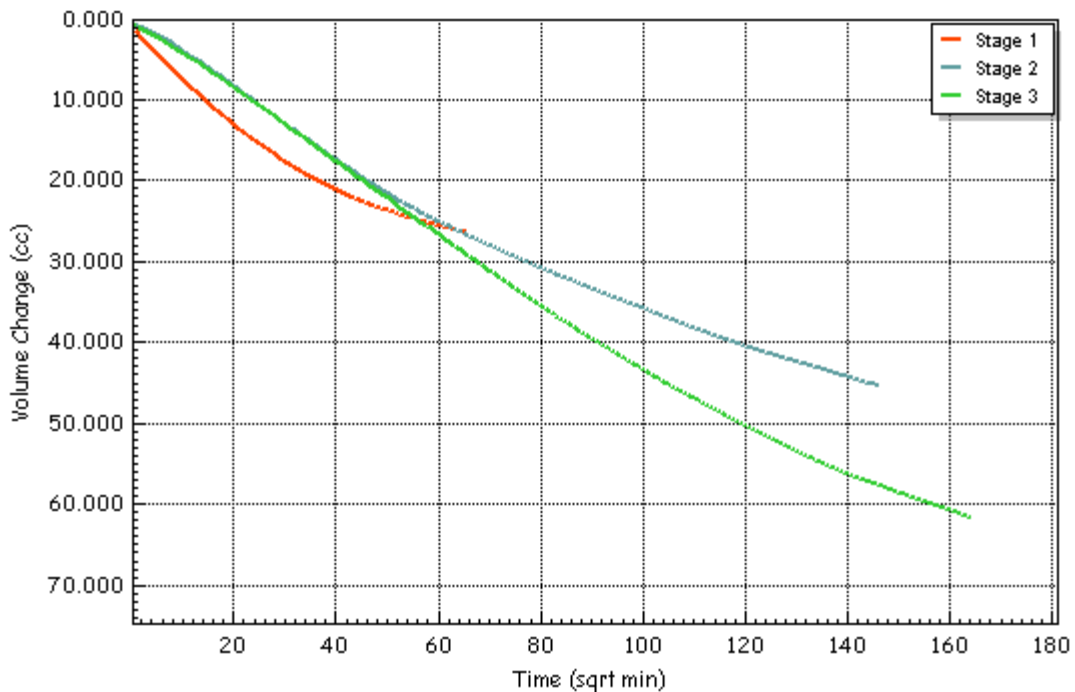
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	630	660	720
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	618	630	665
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
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Notes

Side Drains Used During Test



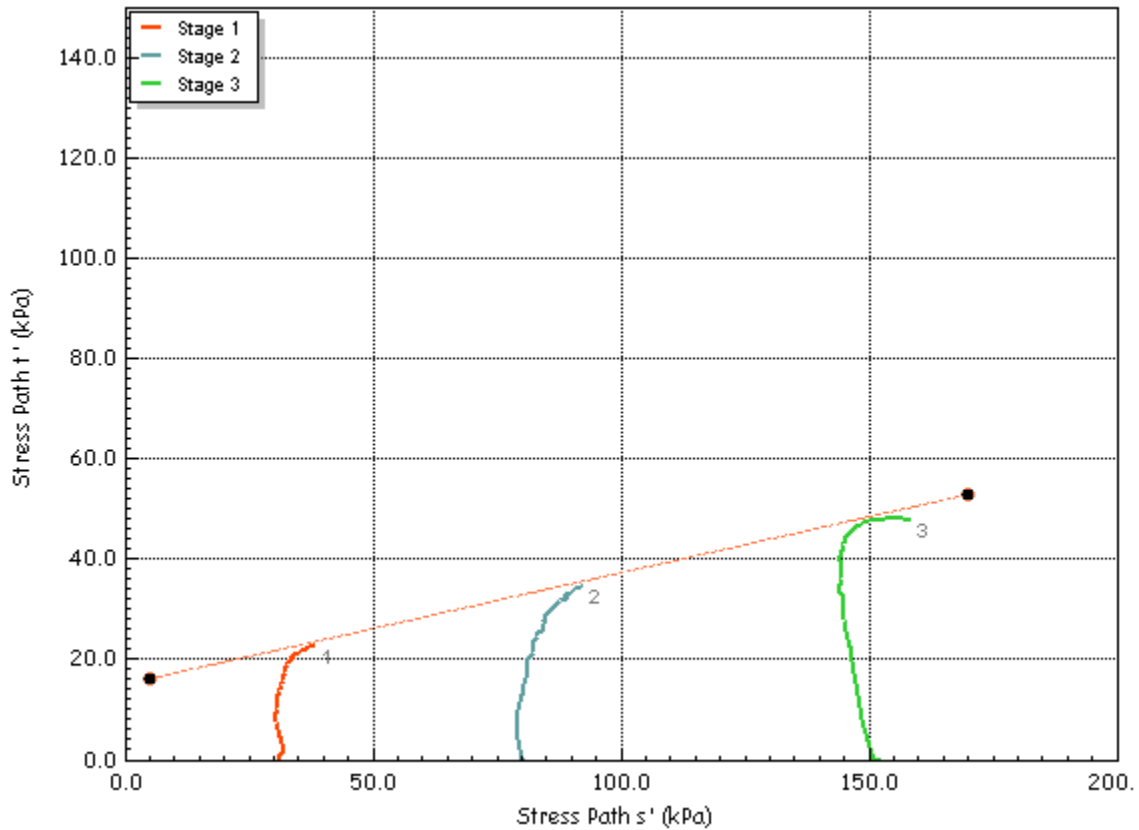
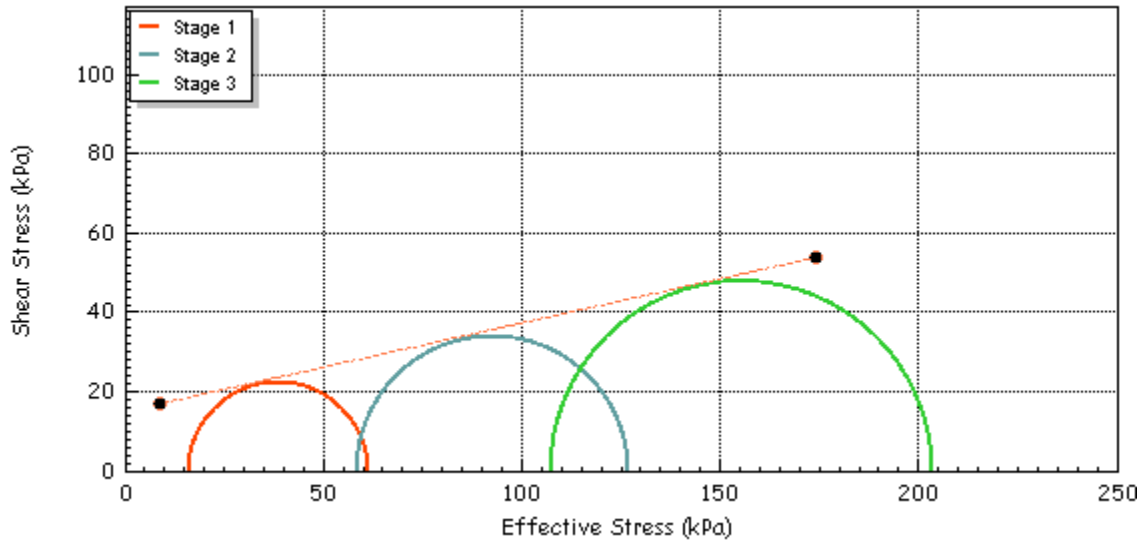
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	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH04	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	3.0-3.6	
	Operator	██████████	Checked	██████████	Approved

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	14.91	Effective Cohesion c'	(kPa)	15.24
Effective Friction ϕ'	(deg)	12.6	Effective Friction ϕ'	(deg)	13.0

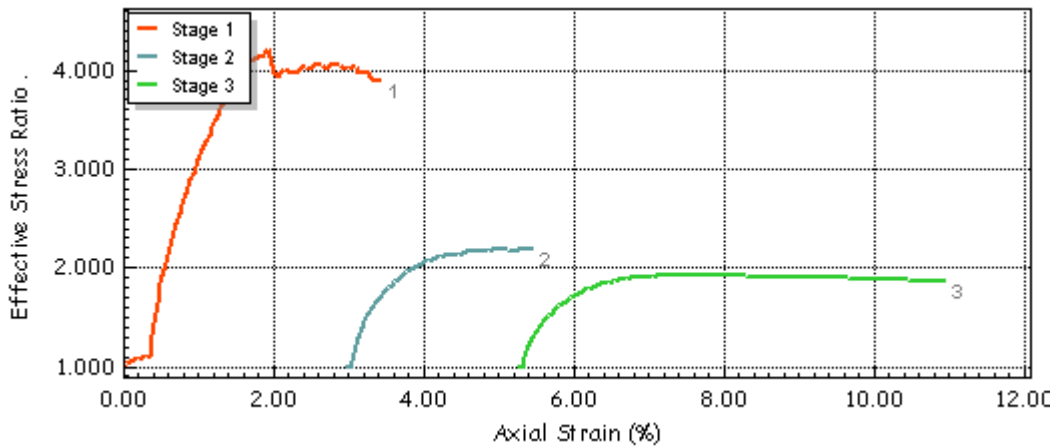
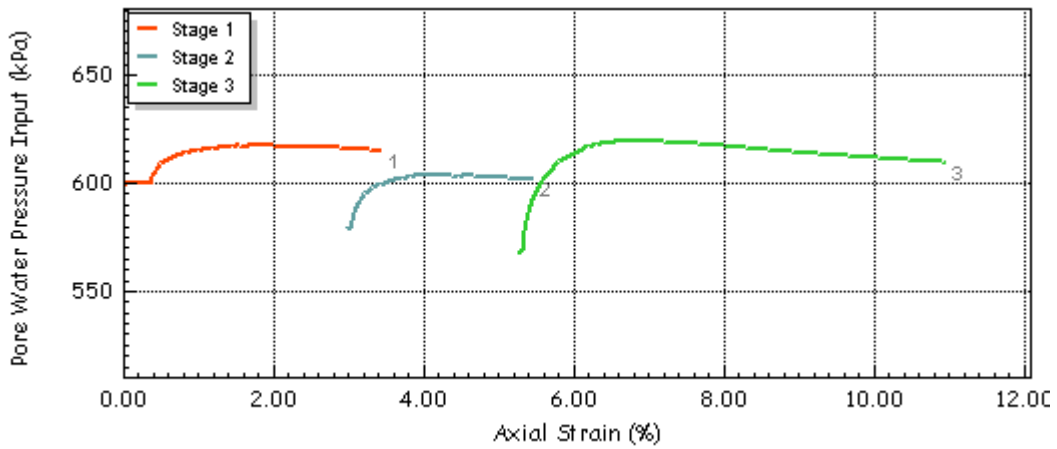
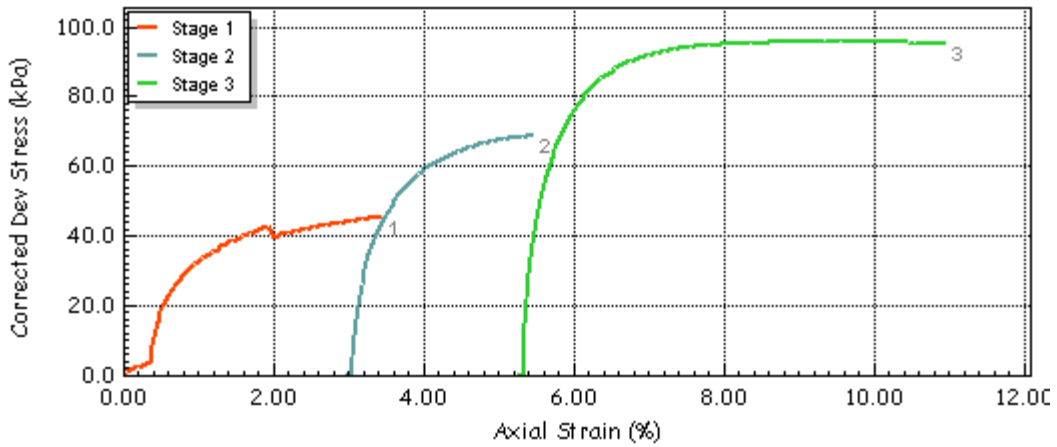


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 8	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH04	
	Jobfile	63583	Sample	6	
Client	SOCOTEC	Depth	3.0-3.6		
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

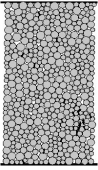


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 8	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH04	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	3.0-3.6	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

<p>Sample Details</p>  <p><i>sketch showing specimen location in original sample</i></p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">4.0-4.5</td> </tr> <tr> <td>Description</td> <td colspan="3">Greyish Brown, Silty, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.4</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.4</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3417.7</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.85</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	4.0-4.5			Description	Greyish Brown, Silty, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.4	Initial Sample Diameter	D_0	(mm)	105.4	Initial Sample Weight	W_0	(gr)	3417.7	Initial Bulk Density	ρ_0	(Mg/m ³)	1.85	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
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Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														



Initial Conditions		Stage 1	2	3	4
Initial Cell Pressure	σ_{3i} (kPa)	350	400	500	
Initial Back Pressure	U_{bi} (kPa)	300	300	300	
Strain Rate	m_s (mm/min)	0.00152	0.01900	0.04000	
Membrane Thickness	m_b (mm)	0.400			
Displacement Input	L_{IP} (mm)	CH 2			
Load Input	N_{IP} (N)	CH 4			
Pore Water Pressure Input	u_{pwp} (kPa)	CH 3			
Sample Volume	V (cc)	CH 6			
Initial Moisture	ω_i (%)	32			
Initial Dry Density	ρ_{di} (Mg/m ³)	1.41			
Initial Voids Ratio	e_i	0.884			
Initial Degree of Saturation	S_i (%)	95			
B Value	B	1.00			

Final Conditions					
Final Moisture	ω_f (%)	32			
Final Dry Density	ρ_{df} (Mg/m ³)	1.49			
Final Voids Ratio	e_f	0.781			
Final Degree of Saturation	S_f (%)	100.0			
Failure Criteria		Stage 1	2	3	4
Strain At Failure	ϵ_f (%)	1.95	4.60	0.00	
Stress At Failure	$(\sigma_1 - \sigma_3)$ (kPa)	42.4	77.1	0.0	
Minor Stress At Failure	σ_3' (kPa)	15.3	55.0	0.0	
Major Stress At Failure	σ_1' (kPa)	57.7	132.1	0.0	
Principal Stress At Failure	σ_1' / σ_3'	3.764	2.402	0.000	
PwP At Failure Criteria	u_f	335.1	345.0	0.0	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.32	3.32	0.00
Membrane Correction at Failure (kpa)	0.20	0.48	0.00



Compound

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 3	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	09/01/2023	
	Site Reference		Borehole	ATK_BH05	
	Jobfile	63583	Sample	5	
	Client	SOCOTEC	Depth	4.0-4.5	
Operator	██████████	Checked	██████████	Approved	██████████

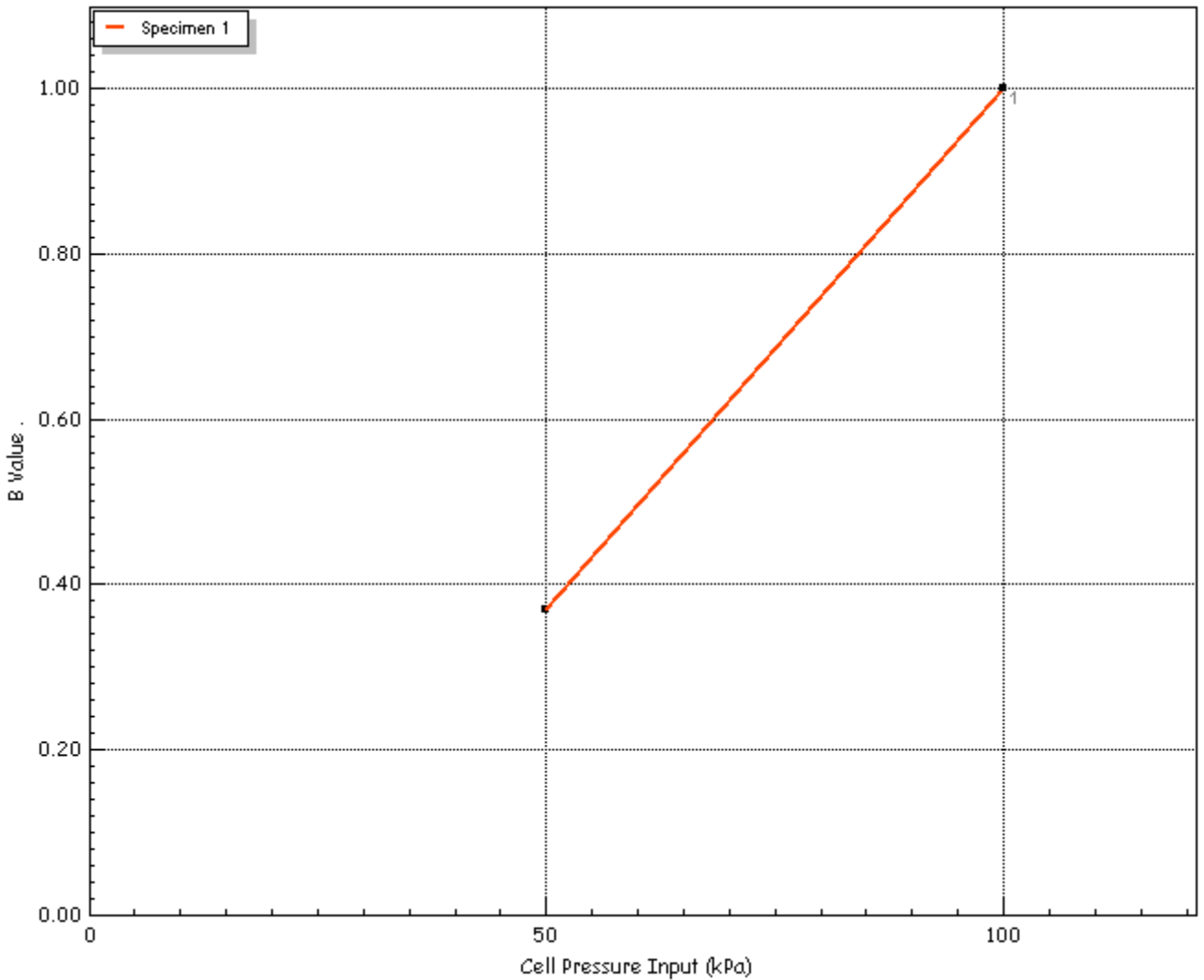
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	100
Pore Water Pressure Input	u_{pwp}	(kPa)	94
B Value	B	.	1.00



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 3	
	Database: GEOSIT-151825\SQLXPRESS2019 \ Effective		Test Date	09/01/2023	
	Site Reference		Borehole	ATK_BH05	
	Jobfile	63583	Sample	5	
	Client	SOCOTEC	Depth	4.0-4.5	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

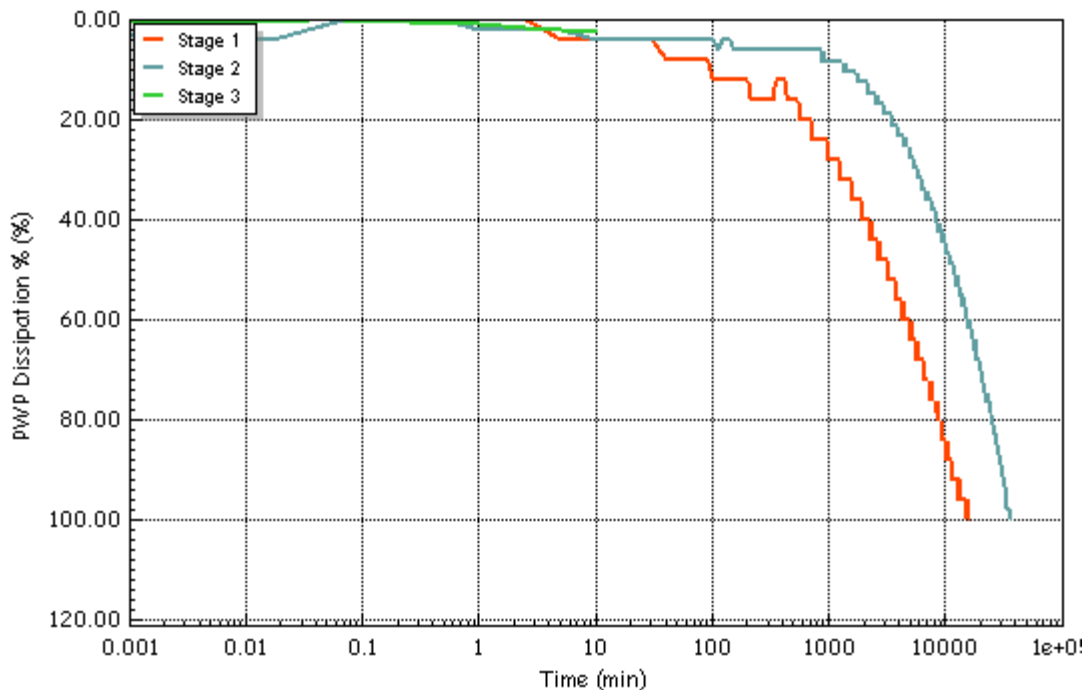
Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	350	400	500
Initial Back Pressure	u_{bi} (kPa)	300	300	300
Pore Water Pressure Input	u_{pwp} (kPa)	325	347	447
Drainage Method		Radial+One End		

Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	2.65
Volumetric Strain	$\epsilon_v\%$ (%)	3.33	2.13	0.04
Corrected Length	L_c (mm)	209.1	201.8	197.6
Corrected Area	A_c (cm ²)	85.31	86.42	88.20
Corrected Volume	V_c (cc)	1783.019	1743.823	1743.034
t100	t_{100} (min)	3826.86	29738.84	5.71
Consolidation	c_v (m ² /year)	0.001	0.000	0.41
Compressibility	m_v (m ² /MN)	1.33	0.45	0.11
Test Time	t_F (h:m:s)	114:48:20	892:09:54	02:00:00
Estimated Strain to Failure	$\epsilon_f\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.00152	0.00019	0.08234

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 3	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	09/01/2023	
	Site Reference		Borehole	ATK_BH05	
	Jobfile	63583	Sample	5	
	Client	SOCOTEC	Depth	4.0-4.5	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

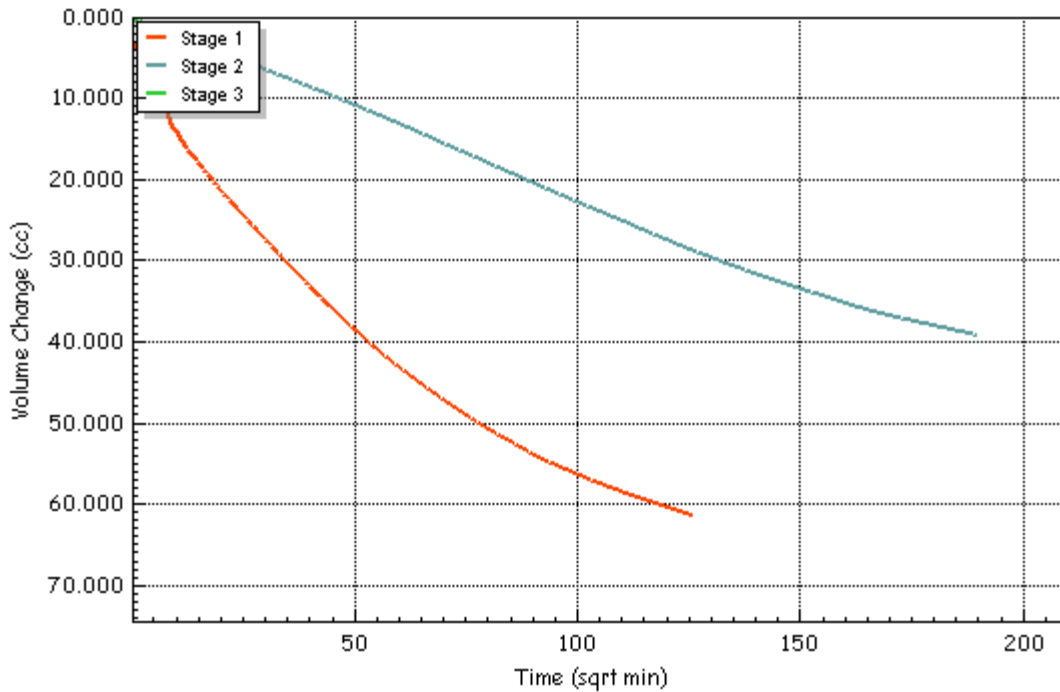
Consolidation Plots

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Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.00152	0.00019	0.08234

Notes

Side Drains Used During Test



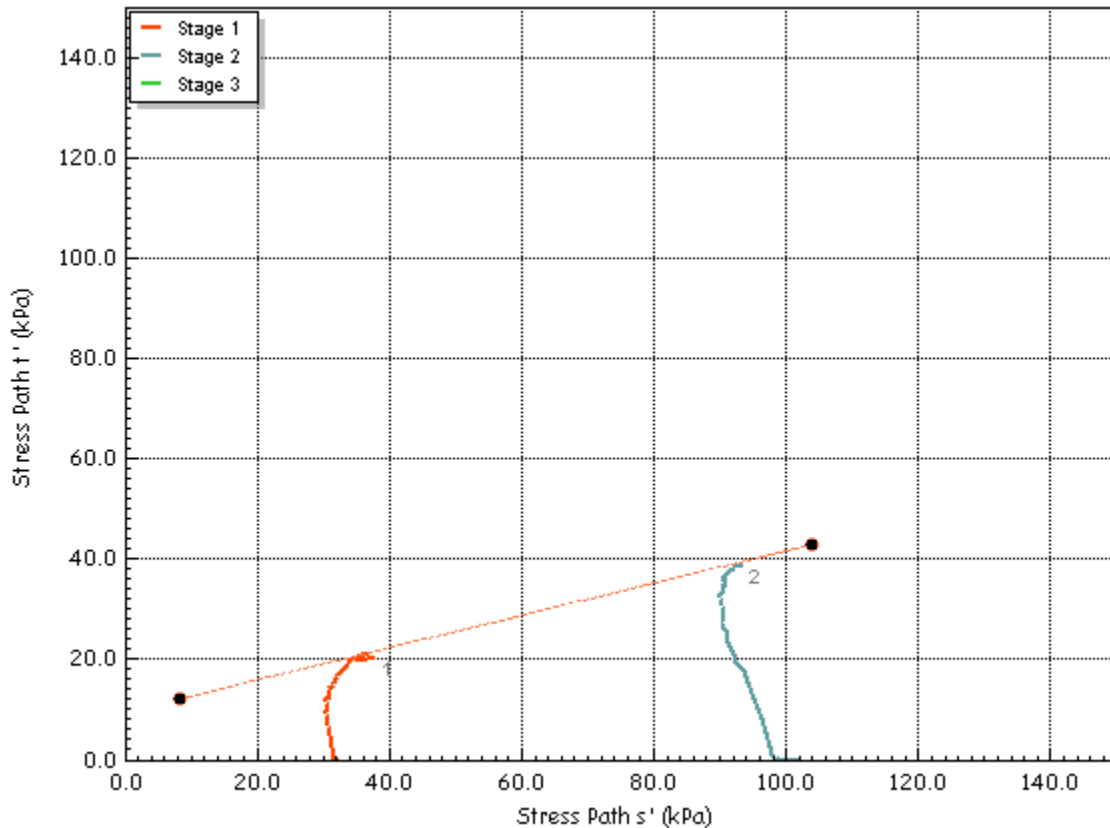
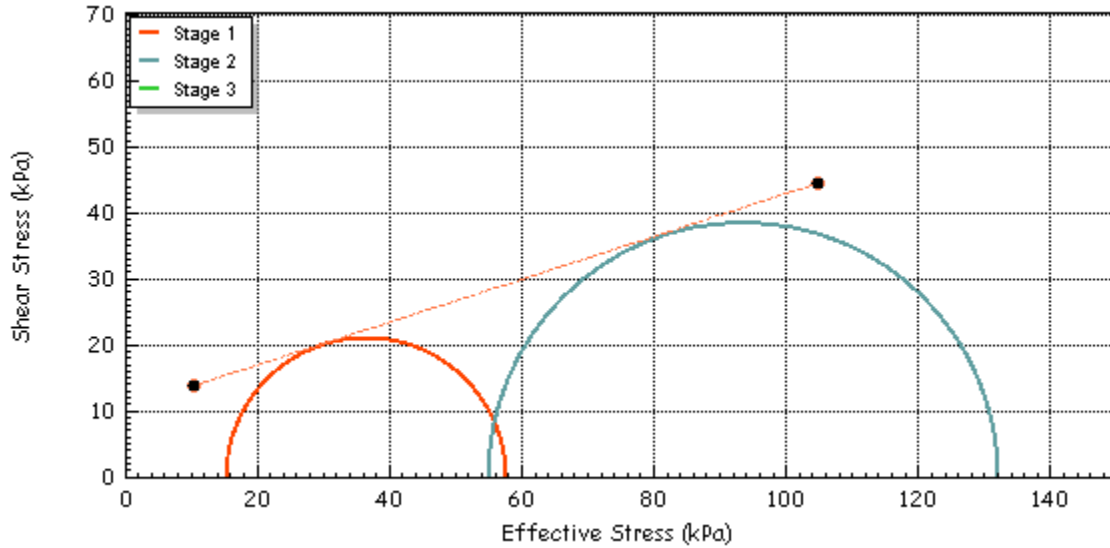
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	Site Reference		Borehole	ATK_BH05	
	Jobfile	63583	Sample	5	
	Client	SOCOTEC	Depth	4.0-4.5	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	10.40	Effective Cohesion c'	(kPa)	10.24
Effective Friction ϕ'	(deg)	18.0	Effective Friction ϕ'	(deg)	18.6

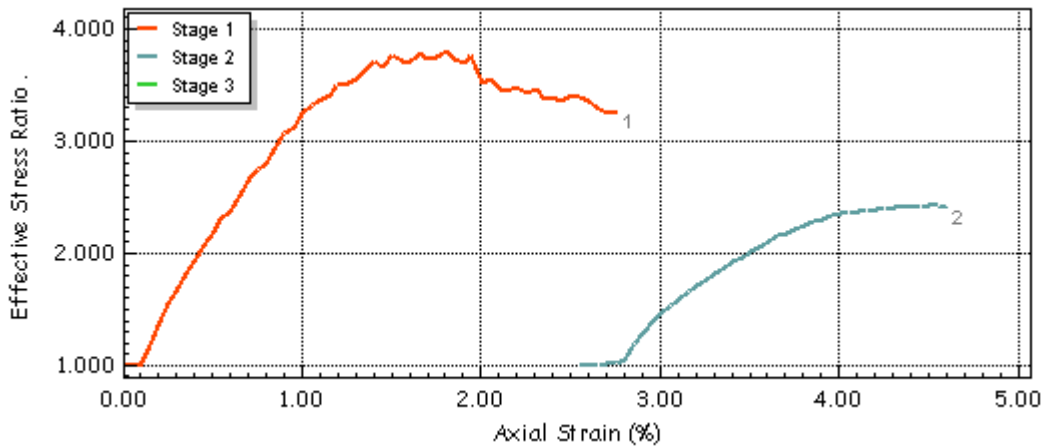
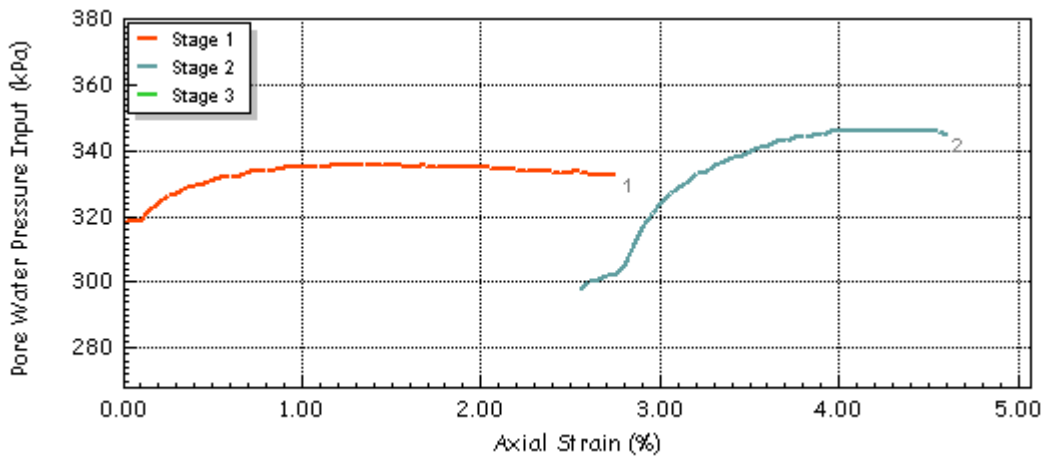
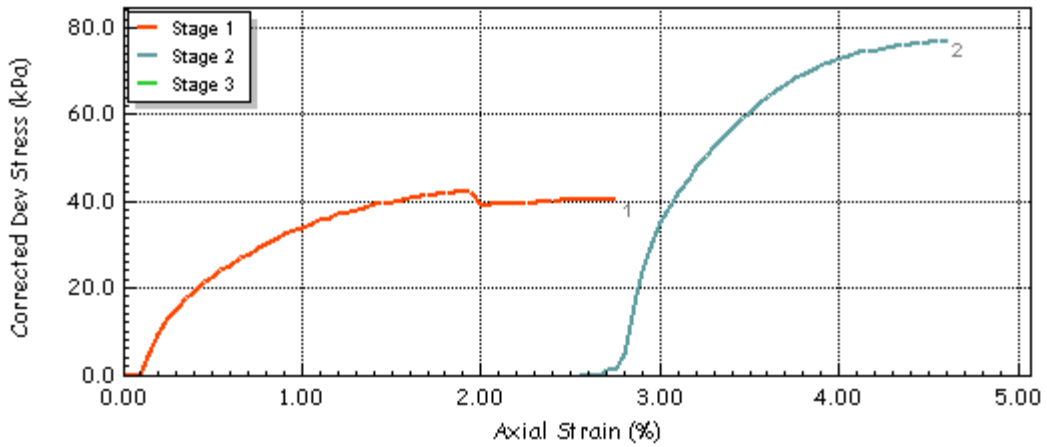


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	Jobfile	63583	Sample	5	
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Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

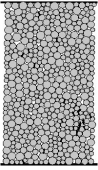


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	Site Reference		Borehole	ATK_BH05	
	Jobfile	63583	Sample	5	
	Client	SOCOTEC	Depth	4.0-4.5	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained


Summary Report

Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">2.2-2.65</td> </tr> <tr> <td>Description</td> <td colspan="3">Brown, Slightly Sandy, Fine to Coarse Gravel, Silty, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.6</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.7</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3470.9</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.87</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	2.2-2.65			Description	Brown, Slightly Sandy, Fine to Coarse Gravel, Silty, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.6	Initial Sample Diameter	D_0	(mm)	105.7	Initial Sample Weight	W_0	(gr)	3470.9	Initial Bulk Density	ρ_0	(Mg/m ³)	1.87	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	2.2-2.65																																
Description	Brown, Slightly Sandy, Fine to Coarse Gravel, Silty, CLAY																																
Type	UT																																
Initial Sample Length	L_0	(mm)	211.6																														
Initial Sample Diameter	D_0	(mm)	105.7																														
Initial Sample Weight	W_0	(gr)	3470.9																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.87																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions		Stage 1	2	3	4
Initial Cell Pressure	σ_{3i} (kPa)	620	690	730	
Initial Back Pressure	U_{bi} (kPa)	600	650	650	
Strain Rate	m_s (mm/min)	0.04000	0.00412	0.04600	
Membrane Thickness	m_b (mm)	0.400			
Displacement Input	L_{IP} (mm)	CH 2			
Load Input	N_{IP} (N)	CH 4			
Pore Water Pressure Input	u_{pwp} (kPa)	CH 3			
Sample Volume	V (cc)	CH 6			
Initial Moisture	ω_i (%)	28			
Initial Dry Density	ρ_{di} (Mg/m ³)	1.45			
Initial Voids Ratio	e_i	0.822			
Initial Degree of Saturation	S_i (%)	92			
B Value	B	0.97			

Final Conditions					
Final Moisture	ω_f (%)	29			
Final Dry Density	ρ_{df} (Mg/m ³)	1.51			
Final Voids Ratio	e_f	0.760			
Final Degree of Saturation	S_f (%)	100.0			
		Stage 1	2	3	4
Failure Criteria		Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f (%)	1.95	4.10	10.82	
Stress At Failure	$(\sigma_1 - \sigma_3)$ (kPa)	36.1	52.8	75.9	
Minor Stress At Failure	σ_3' (kPa)	9.6	40.0	81.0	
Major Stress At Failure	σ_1' (kPa)	45.7	92.8	156.9	
Principal Stress At Failure	σ_1' / σ_3'	4.757	2.321	1.937	
PwP At Failure Criteria	u_f	610.8	650.0	649.0	

Notes				 Compound
Side Drains Used During				
	1	2	3	
Side Drain Correction at Failure (kpa)	3.31	3.31	3.31	
Membrane Correction at Failure (kpa)	0.20	0.42	0.89	

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 6	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH09	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	2.2-2.65	
Operator	██████████	Checked	██████████	Approved	██████████



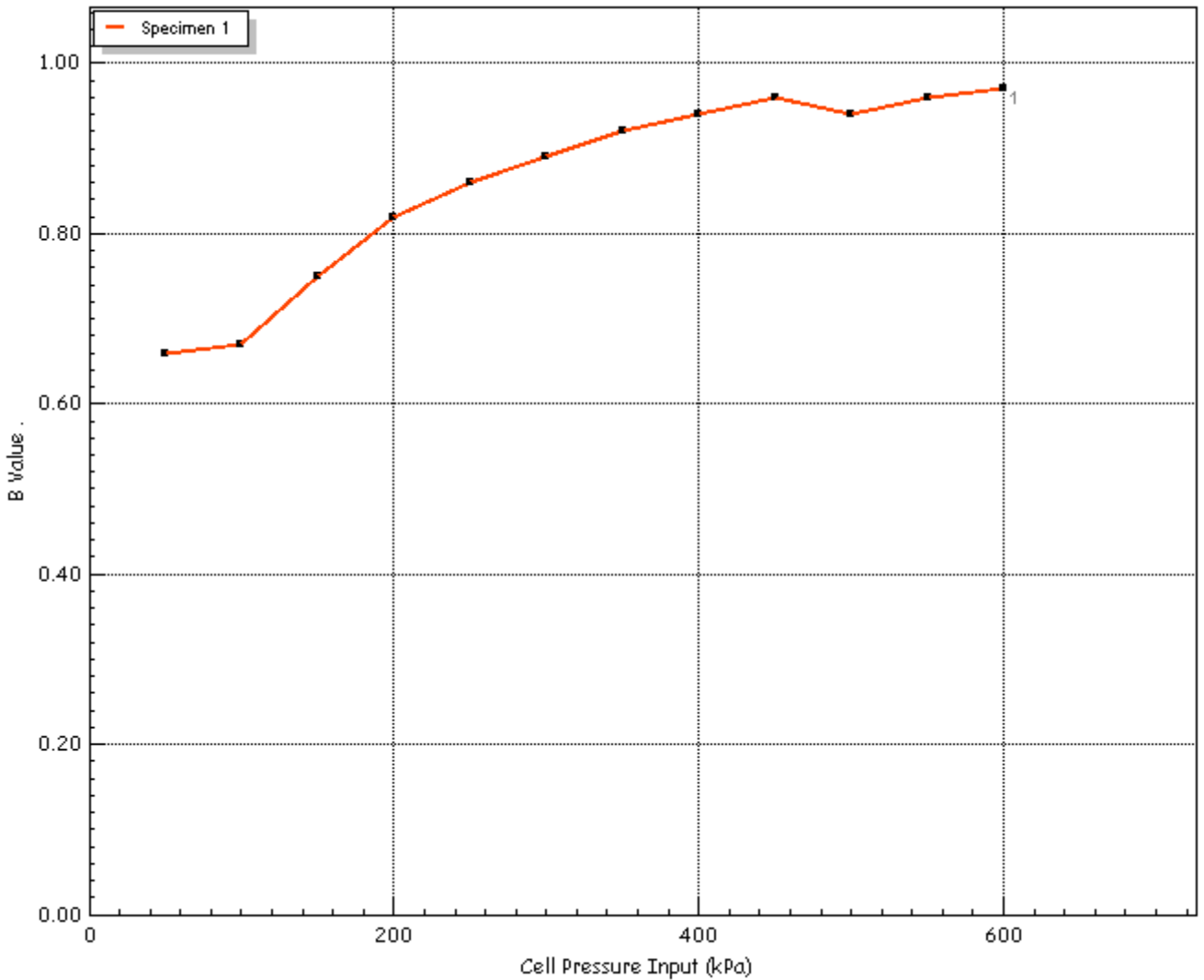
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	600
Pore Water Pressure Input	u_{pwp}	(kPa)	592
B Value	B	.	0.97



GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 6
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023
	Site Reference		Borehole	ATK_BH09
	Jobfile	63583	Sample	6
	Client	SOCOTEC	Depth	2.2-2.65
	Operator	██████████	Checked	██████████
			Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

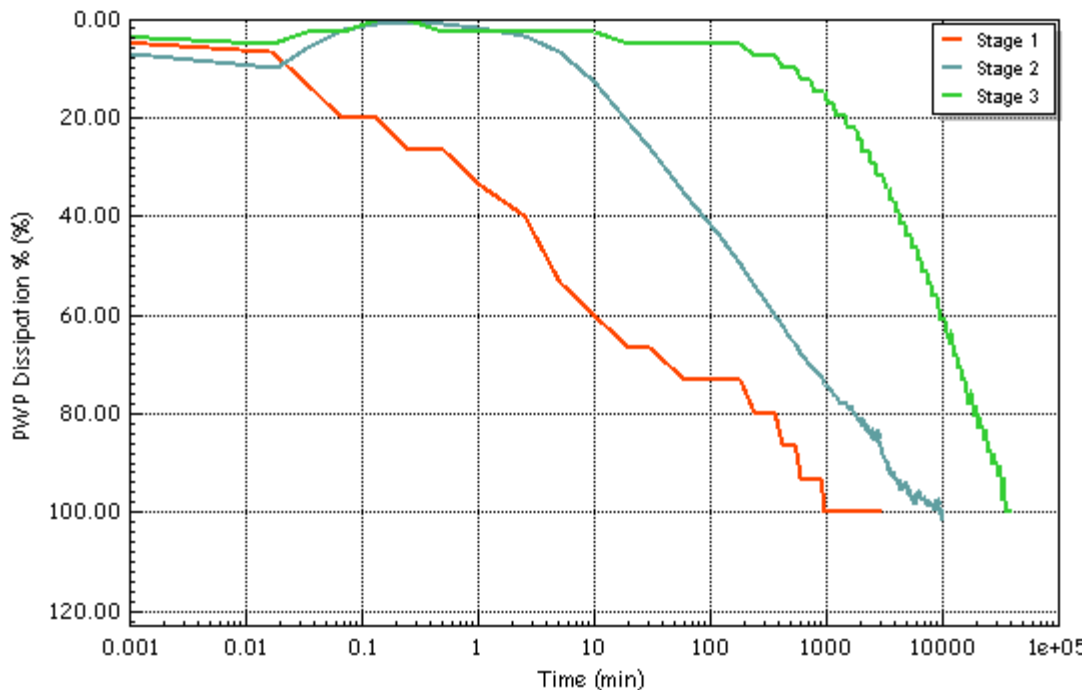
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	620	690	730
Initial Back Pressure	u_{bi}	(kPa)	600	650	650
Pore Water Pressure Input	u_{pwp}	(kPa)	615	673	691
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	101.46	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	0.49	1.16	1.75
Corrected Length	L_c	(mm)	211.3	205.1	199.7
Corrected Area	A_c	(cm ²)	87.46	89.06	89.84
Corrected Volume	V_c	(cc)	1847.648	1826.167	1793.595
t100	t_{100}	(min)	27.84	1382.00	12112.54
Consolidation	c_v	(m ² /year)	0.083	0.002	0.000
Compressibility	m_v	(m ² /MN)	0.33	0.51	0.43
Test Time	t_F	(h:m:s)	02:00:00	41:27:36	363:22:33
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08802	0.00412	0.00046

Notes

Side Drains Used During



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 6	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH09	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	2.2-2.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

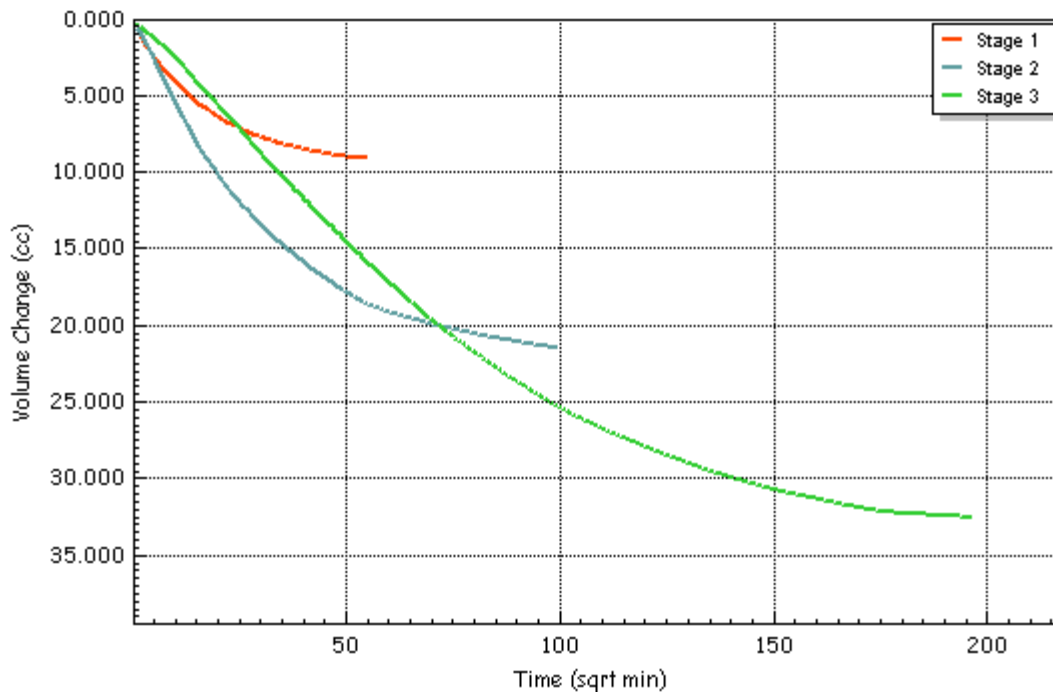
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	620	690	730
Initial Back Pressure	u_{bi}	(kPa)	600	650	650
Pore Water Pressure Input	u_{pwp}	(kPa)	615	673	691
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	101.46	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	0.49	1.16	1.75
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Corrected Area	A_c	(cm ²)	87.46	89.06	89.84
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Compressibility	m_v	(m ² /MN)	0.33	0.51	0.43
Test Time	t_F	(h:m:s)	02:00:00	41:27:36	363:22:33
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08802	0.00412	0.00046

Notes

Side Drains Used During



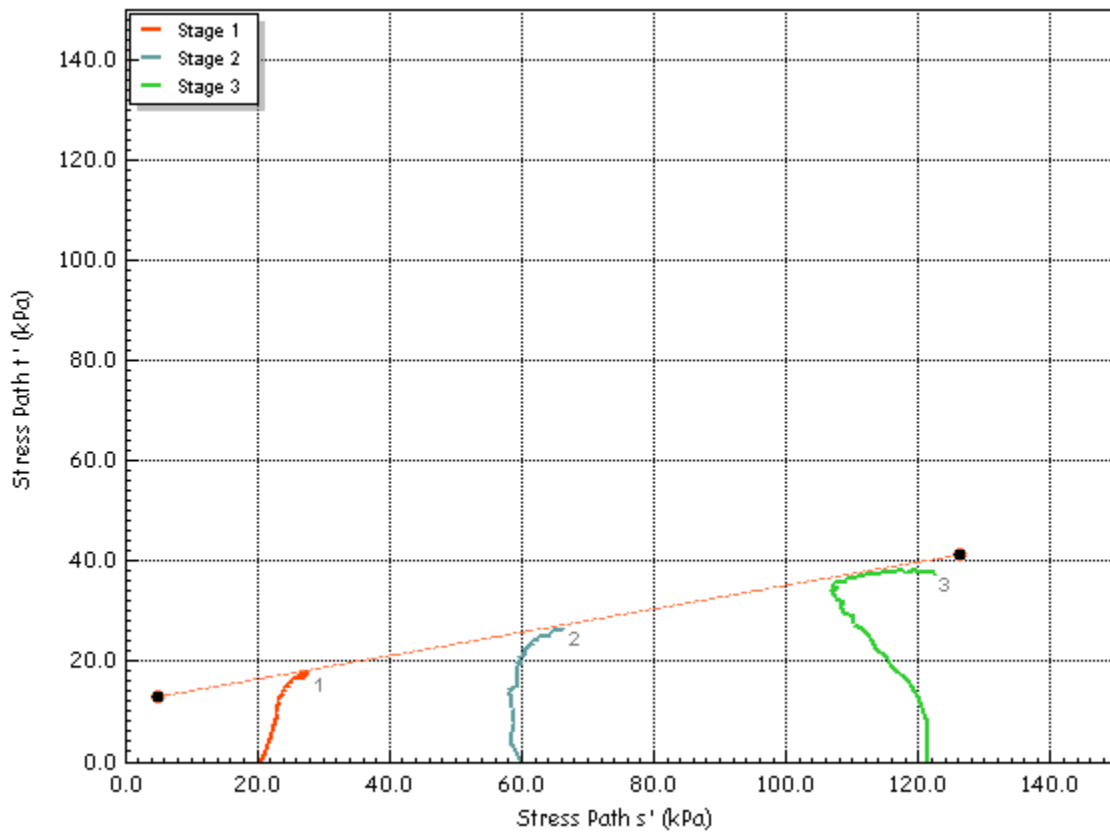
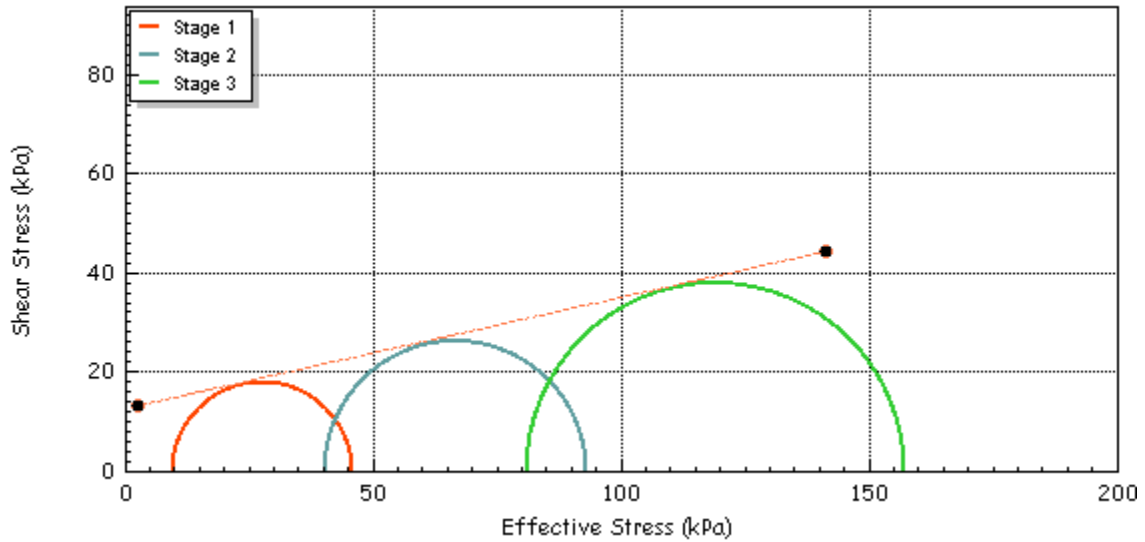
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	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH09	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	2.2-2.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	12.64	Effective Cohesion c'	(kPa)	12.15
Effective Friction ϕ'	(deg)	12.6	Effective Friction ϕ'	(deg)	13.6

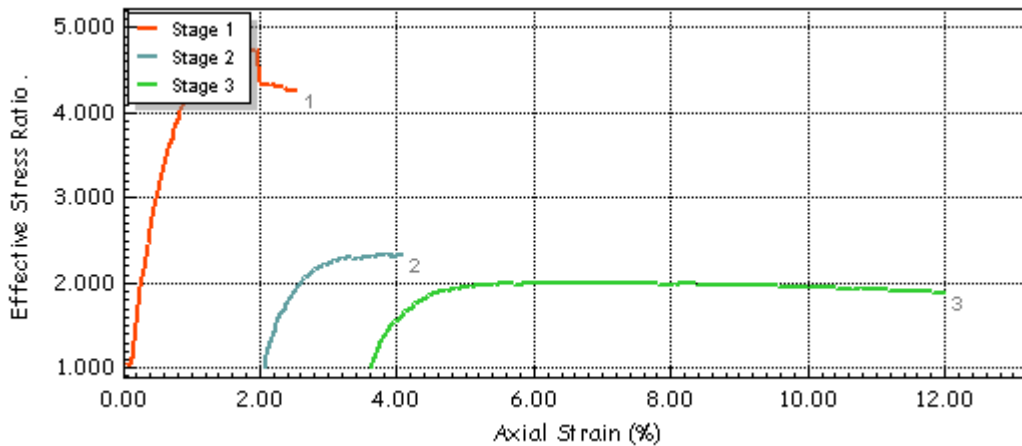
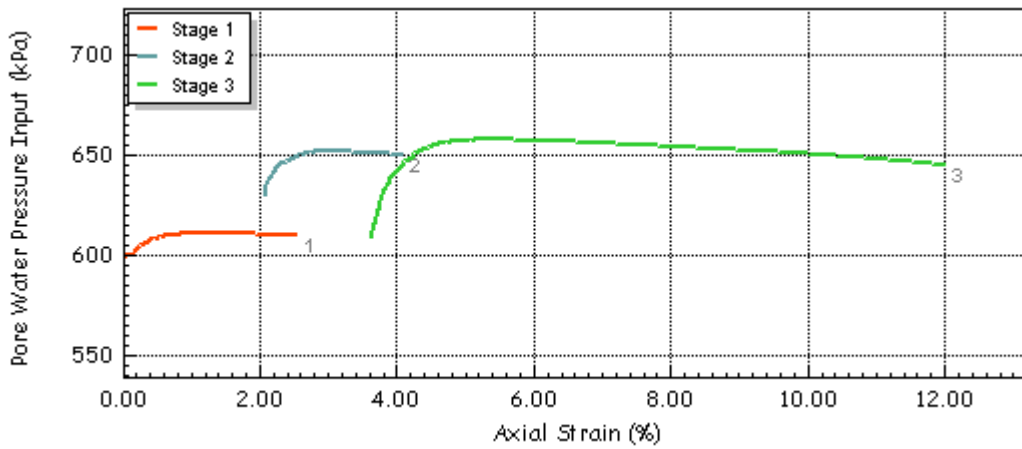
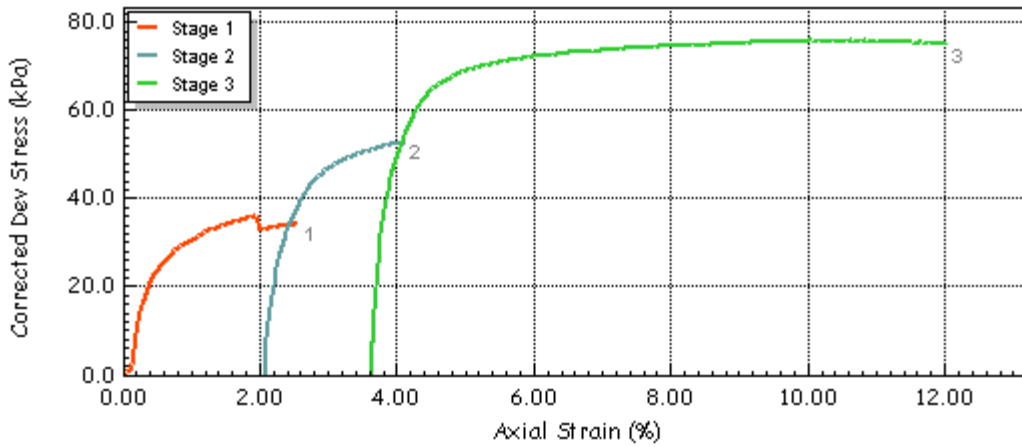



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 6	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH09	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	2.2-2.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

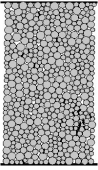


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 6	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH09	
	Jobfile	63583	Sample	6	
	Client	SOCOTEC	Depth	2.2-2.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report



Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">9.0-9.3</td> </tr> <tr> <td>Description</td> <td colspan="3">Grey, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>203.4</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>101.2</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3254.8</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.99</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	9.0-9.3			Description	Grey, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	203.4	Initial Sample Diameter	D_0	(mm)	101.2	Initial Sample Weight	W_0	(gr)	3254.8	Initial Bulk Density	ρ_0	(Mg/m ³)	1.99	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	9.0-9.3																																
Description	Grey, CLAY																																
Type	UT																																
Initial Sample Length	L_0	(mm)	203.4																														
Initial Sample Diameter	D_0	(mm)	101.2																														
Initial Sample Weight	W_0	(gr)	3254.8																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.99																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions		Stage 1	2	3	4
Initial Cell Pressure	σ_{3i} (kPa)	700	800	1000	
Initial Back Pressure	U_{bi} (kPa)	600	600	600	
Strain Rate	m_s (mm/min)	0.04815	0.04669	0.01330	
Membrane Thickness	m_b (mm)	0.400			
Displacement Input	L_{IP} (mm)	CH 2			
Load Input	N_{IP} (N)	CH 4			
Pore Water Pressure Input	u_{pwp} (kPa)	CH 3			
Sample Volume	V (cc)	CH 6			
Initial Moisture	w_i (%)	23			
Initial Dry Density	ρ_{di} (Mg/m ³)	1.62			
Initial Voids Ratio	e_i	0.635			
Initial Degree of Saturation	S_i (%)	95			
B Value	B	1.00			

Final Conditions					
Final Moisture	w_f (%)	22			
Final Dry Density	ρ_{df} (Mg/m ³)	6.72			
Final Voids Ratio	e_f	-0.605			
Final Degree of Saturation	S_f (%)	0.0			
		Stage 1	2	3	4
Failure Criteria		Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f (%)	3.64	4.60	6.53	
Stress At Failure	$(\sigma_1 - \sigma_3)$ (kPa)	91.5	133.9	194.6	
Minor Stress At Failure	σ_3' (kPa)	17.9	79.0	177.0	
Major Stress At Failure	σ_1' (kPa)	109.4	212.9	371.6	
Principal Stress At Failure	σ_1' / σ_3'	6.113	2.694	2.100	
PwP At Failure Criteria	u_f	682.3	720.0	823.0	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.46	3.46	3.46
Membrane Correction at Failure (kpa)	0.39	0.50	0.66


 Plastic

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 5	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH10	
	Jobfile	63583	Sample	110	
	Client	SOCOTEC	Depth	9.0-9.3	
Operator	██████████	Checked	██████████	Approved	██████████

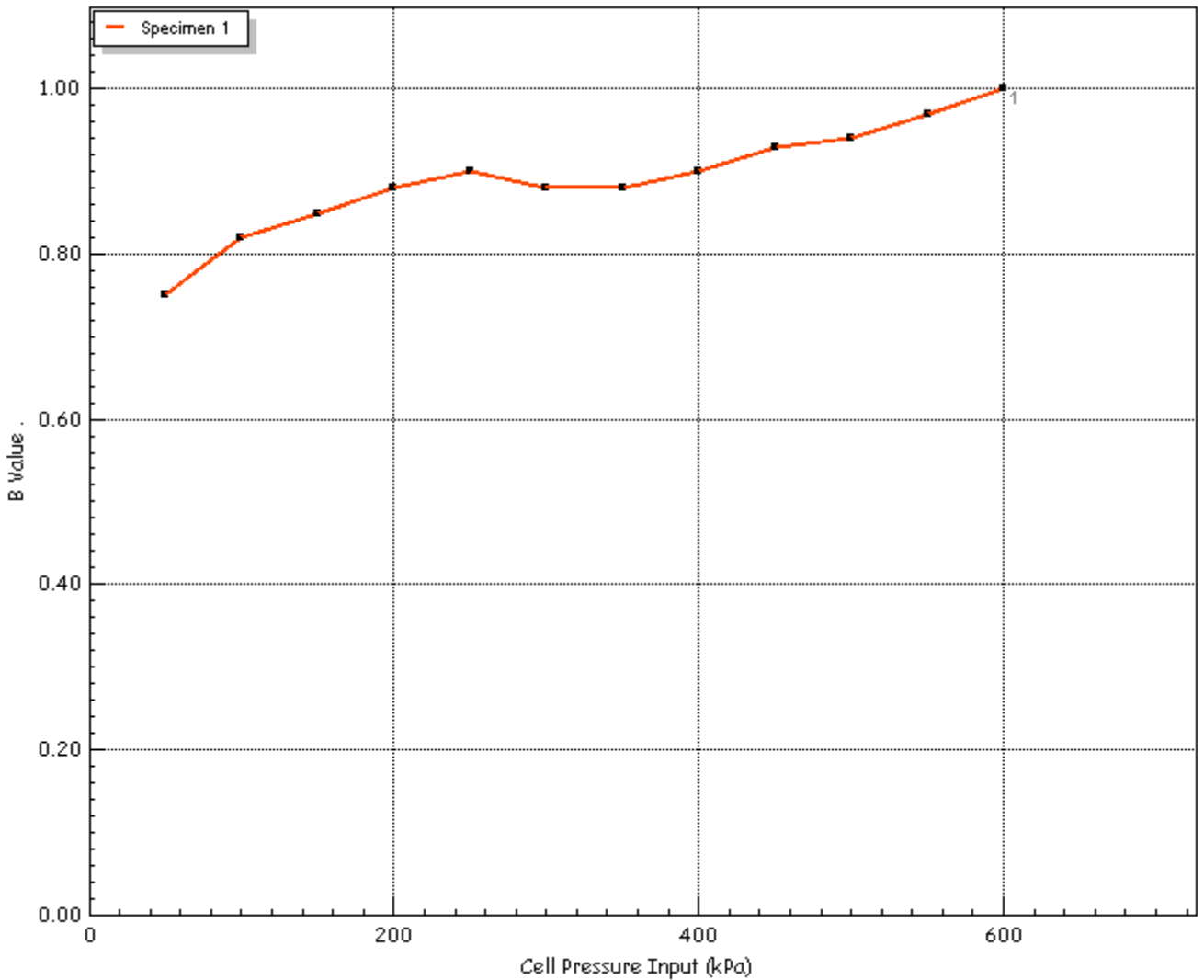
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	600
Pore Water Pressure Input	u_{pwp}	(kPa)	588
B Value	B	.	1.00



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 5	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH10	
	Jobfile	63583	Sample	110	
	Client	SOCOTEC	Depth	9.0-9.3	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

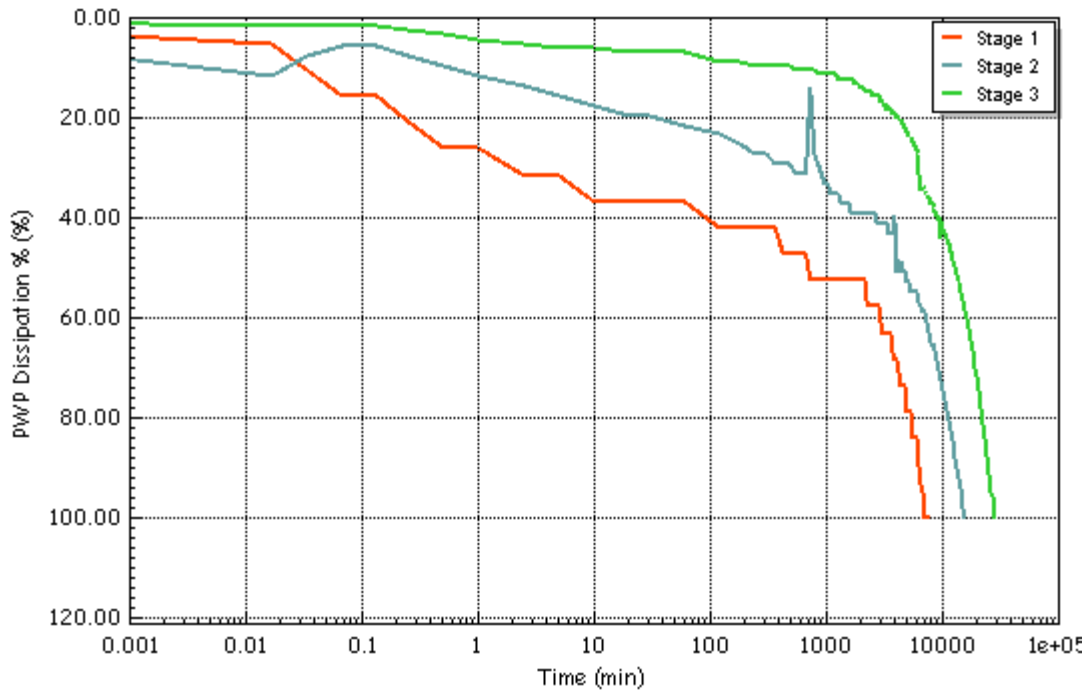
Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	700	800	1000
Initial Back Pressure	u_{bi} (kPa)	600	600	600
Pore Water Pressure Input	u_{pwp} (kPa)	619	651	713
Drainage Method		Radial+One End		

Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$ (%)	5.60	23.08	47.18
Corrected Length	L_c (mm)	199.6	176.4	135.1
Corrected Area	A_c (cm ²)	77.43	67.32	37.62
Corrected Volume	V_c (cc)	1544.452	1166.811	394.836
t100	t_{100} (min)	120.00	120.00	4049.66
Consolidation	c_v (m ² /year)	0.017	0.015	0.000
Compressibility	m_v (m ² /MN)	2.95	4.53	4.18
Test Time	t_F (h:m:s)	03:36:00	03:36:00	121:29:22
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.04620	0.04083	0.00093

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 5	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH10	
	Jobfile	63583	Sample	110	
Client	SOCOTEC	Depth	9.0-9.3		
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

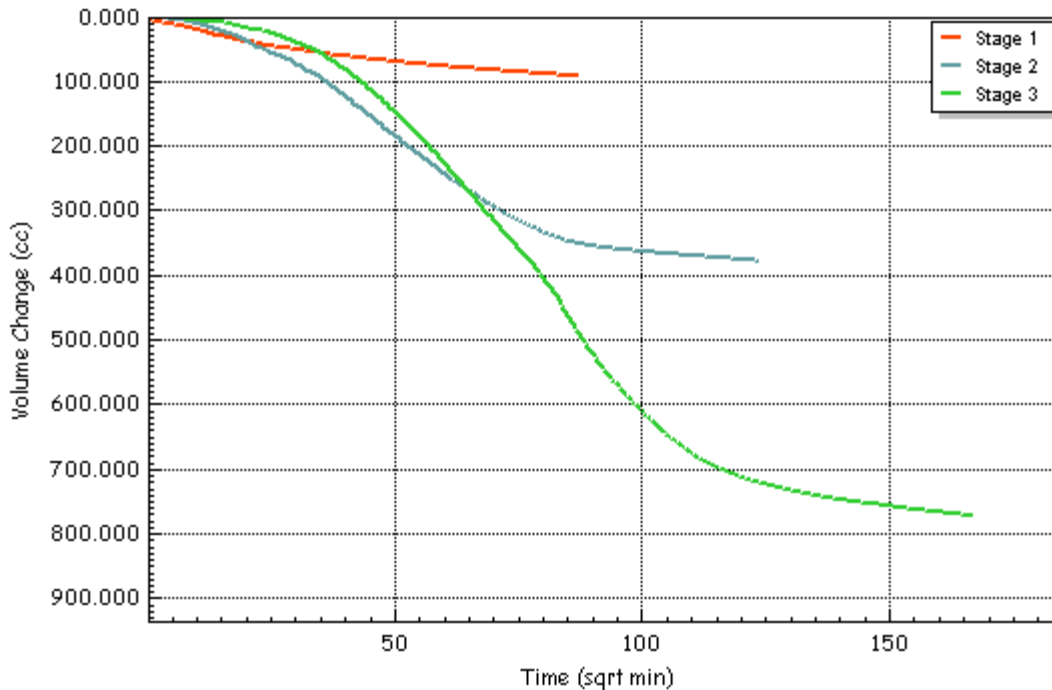
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	700	800	1000
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	619	651	713
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	5.60	23.08	47.18
Corrected Length	L_c	(mm)	199.6	176.4	135.1
Corrected Area	A_c	(cm ²)	77.43	67.32	37.62
Corrected Volume	V_c	(cc)	1544.452	1166.811	394.836
t100	t_{100}	(min)	120.00	120.00	4049.66
Consolidation	c_v	(m ² /year)	0.017	0.015	0.000
Compressibility	m_v	(m ² /MN)	2.95	4.53	4.18
Test Time	t_F	(h:m:s)	03:36:00	03:36:00	121:29:22
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.04620	0.04083	0.00093

Notes

Side Drains Used During Test



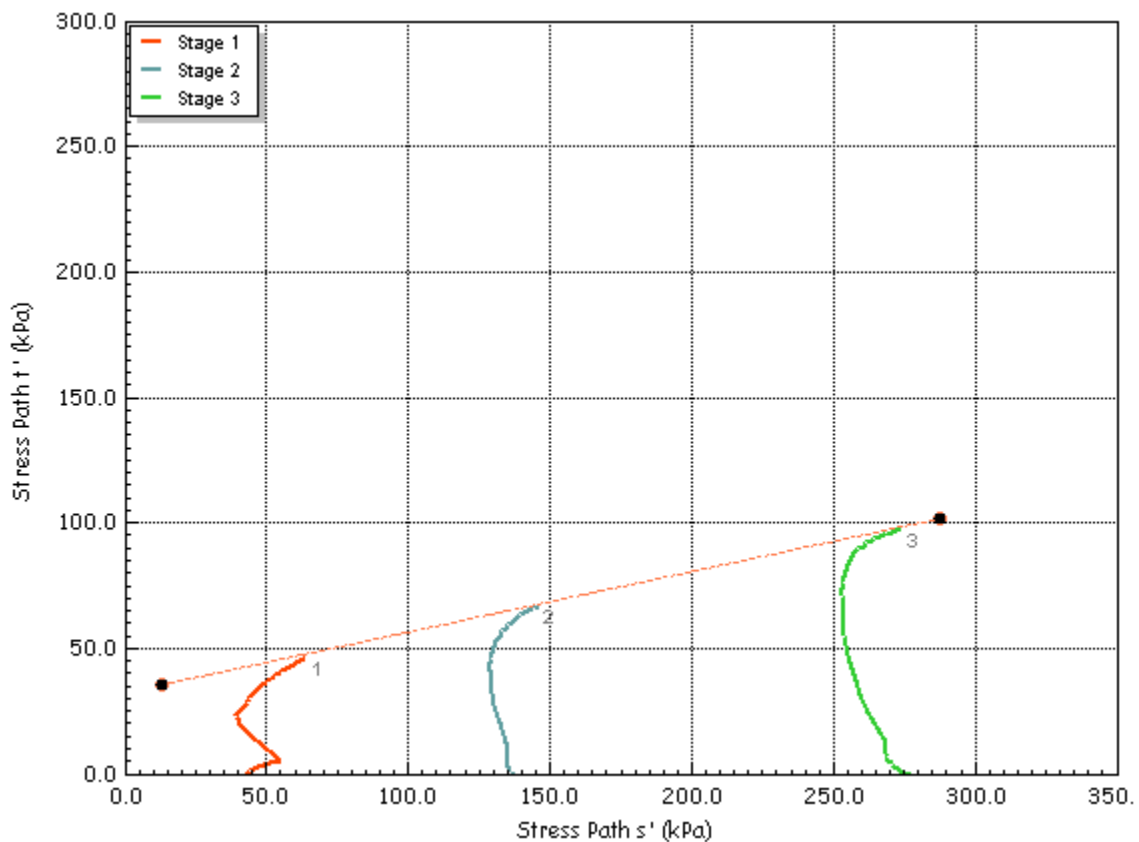
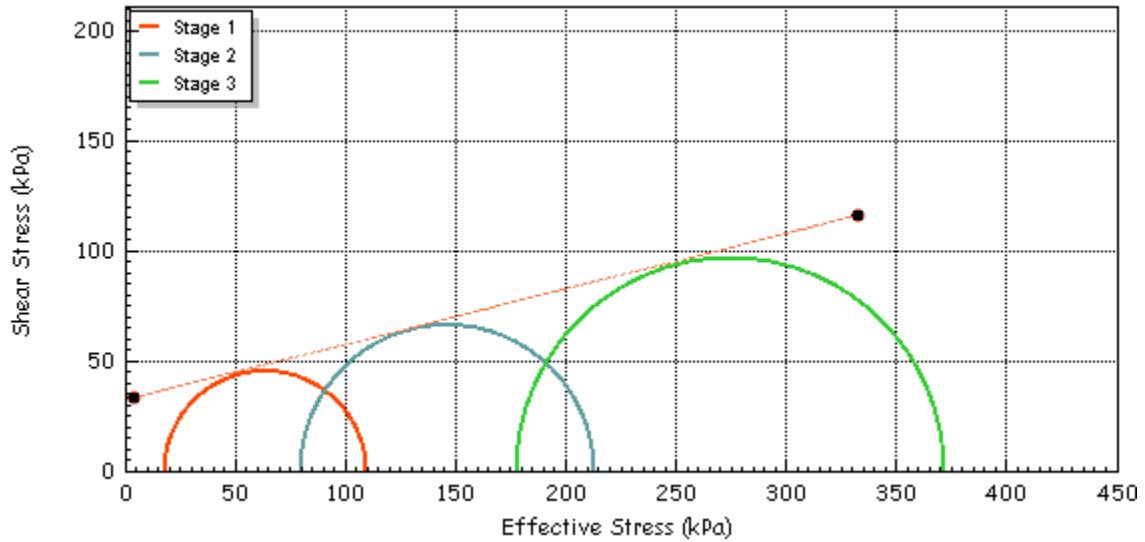
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	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH10	
	Jobfile	63583	Sample	110	
	Client	SOCOTEC	Depth	9.0-9.3	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	32.08	Effective Cohesion c'	(kPa)	33.46
Effective Friction ϕ'	(deg)	14.2	Effective Friction ϕ'	(deg)	14.0

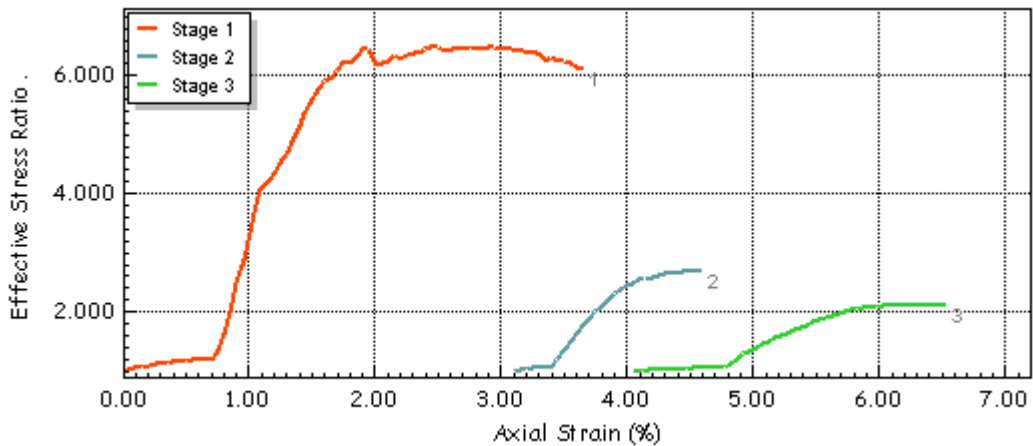
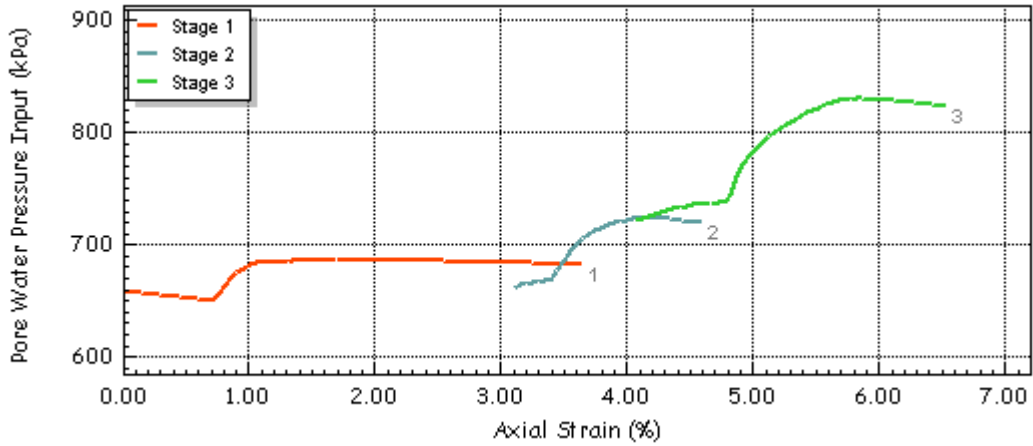
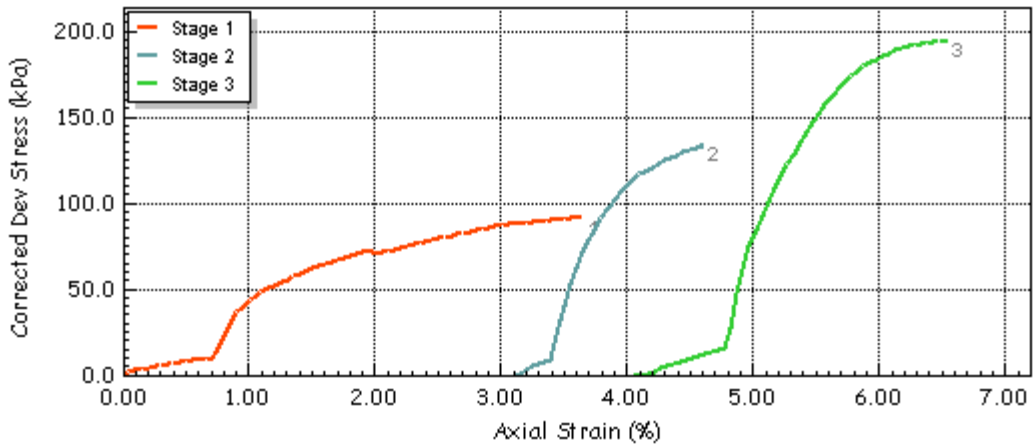


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 5	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH10	
	Jobfile	63583	Sample	110	
	Client	SOCOTEC	Depth	9.0-9.3	
	Operator	██████████	Checked	██████████	Approved

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

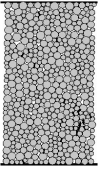


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 5	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH10	
	Jobfile	63583	Sample	110	
	Client	SOCOTEC	Depth	9.0-9.3	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report


Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">6.2-6.65</td> </tr> <tr> <td>Description</td> <td colspan="3">Brown, Silty, Sandy, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.8</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.3</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3559.9</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.93</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	6.2-6.65			Description	Brown, Silty, Sandy, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.8	Initial Sample Diameter	D_0	(mm)	105.3	Initial Sample Weight	W_0	(gr)	3559.9	Initial Bulk Density	ρ_0	(Mg/m ³)	1.93	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	6.2-6.65																																
Description	Brown, Silty, Sandy, CLAY																																
Type	UT																																
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Initial Sample Weight	W_0	(gr)	3559.9																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.93																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														


Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	360	420	540	
Initial Back Pressure	U_{bi}	(kPa)	300	300	300	
Strain Rate	m_s	(mm/min)	0.02753	0.04000	0.00490	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	w_i	(%)	28			
Initial Dry Density	ρ_{di}	(Mg/m ³)	1.51			
Initial Voids Ratio	e_i	.	0.753			
Initial Degree of Saturation	S_i	(%)	97			
B Value	B	.	0.99			

Final Conditions			Stage 1	2	3	4
Final Moisture	w_f	(%)	27			
Final Dry Density	ρ_{df}	(Mg/m ³)	1.61			
Final Voids Ratio	e_f	.	0.646			
Final Degree of Saturation	S_f	(%)	100.0			
Failure Criteria	.	.	Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)	3.46	4.86	7.13	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)	107.7	170.2	252.1	
Minor Stress At Failure	σ_3'	(kPa)	27.5	119.3	244.3	
Major Stress At Failure	σ_1'	(kPa)	135.2	289.5	496.3	
Principal Stress At Failure	σ_1' / σ_3'		4.920	2.427	2.032	
PwP At Failure Criteria	u_f		304.4	277.7	295.7	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.32	3.32	3.32
Membrane Correction at Failure (kpa)	0.36	0.51	0.67


 Compound

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH11	
	Jobfile	63583	Sample	14	
	Client	SOCOTEC	Depth	6.2-6.65	
Operator	██████████	Checked	██████████	Approved	██████████


 2788

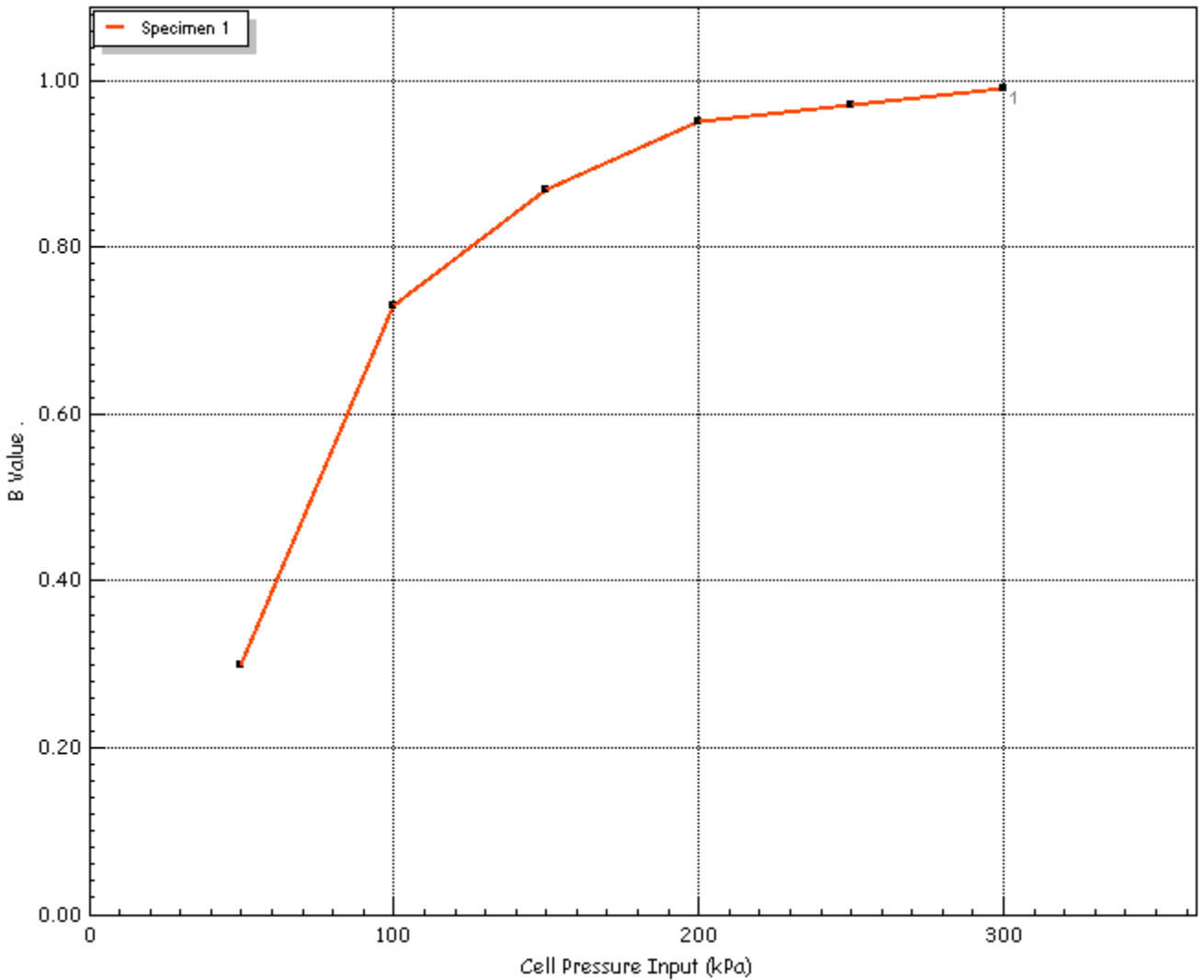
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	300
Pore Water Pressure Input	u_{pwp}	(kPa)	288
B Value	B	.	0.99



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH11	
	Jobfile	63583	Sample	14	
	Client	SOCOTEC	Depth	6.2-6.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

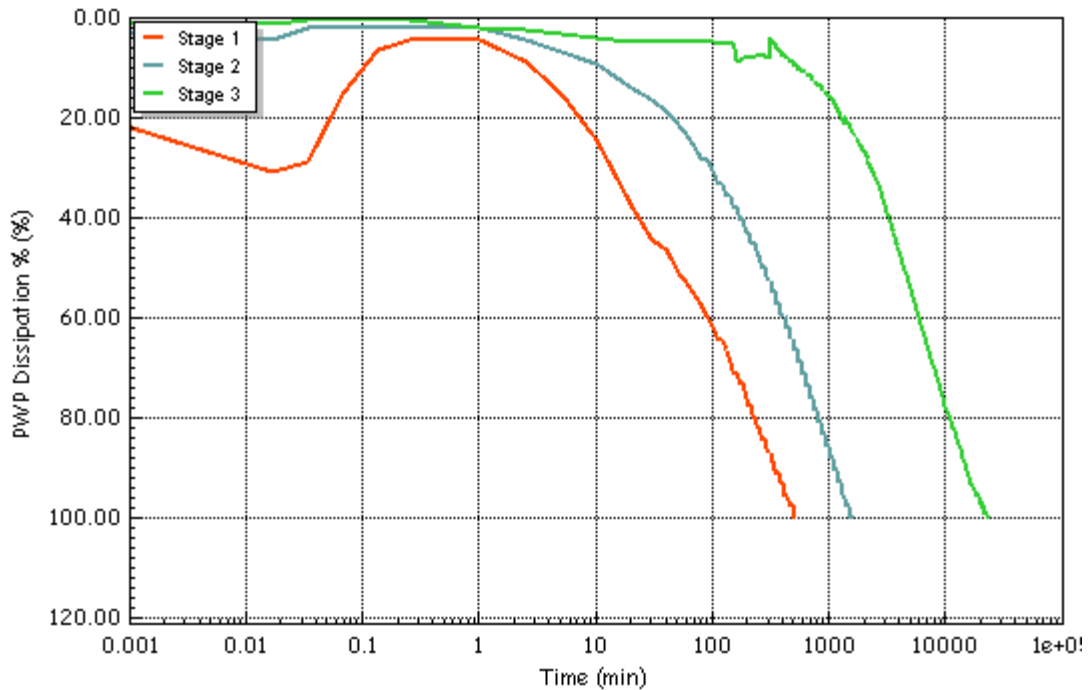
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	360	420	540
Initial Back Pressure	u_{bi}	(kPa)	300	300	300
Pore Water Pressure Input	u_{pwp}	(kPa)	345	342	444
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	2.35	1.07	2.72
Corrected Length	L_c	(mm)	210.1	202.1	195.5
Corrected Area	A_c	(cm ²)	85.72	88.13	88.55
Corrected Volume	V_c	(cc)	1801.218	1781.442	1731.320
t100	t_{100}	(min)	212.02	27.84	11197.75
Consolidation	c_v	(m ² /year)	0.011	0.083	0.000
Compressibility	m_v	(m ² /MN)	0.52	0.26	0.19
Test Time	t_F	(h:m:s)	06:21:37	02:00:00	335:55:57
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.02753	0.08423	0.00049

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH11	
	Jobfile	63583	Sample	14	
	Client	SOCOTEC	Depth	6.2-6.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

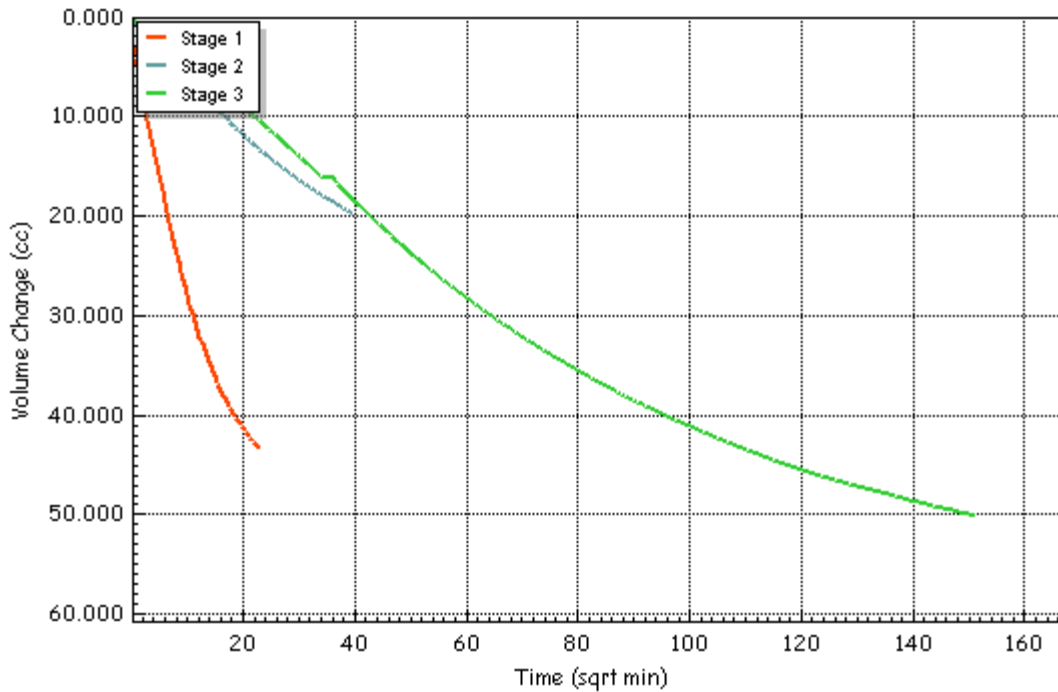
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	360	420	540
Initial Back Pressure	u_{bi}	(kPa)	300	300	300
Pore Water Pressure Input	u_{pwp}	(kPa)	345	342	444
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
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Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.02753	0.08423	0.00049

Notes

Side Drains Used During Test



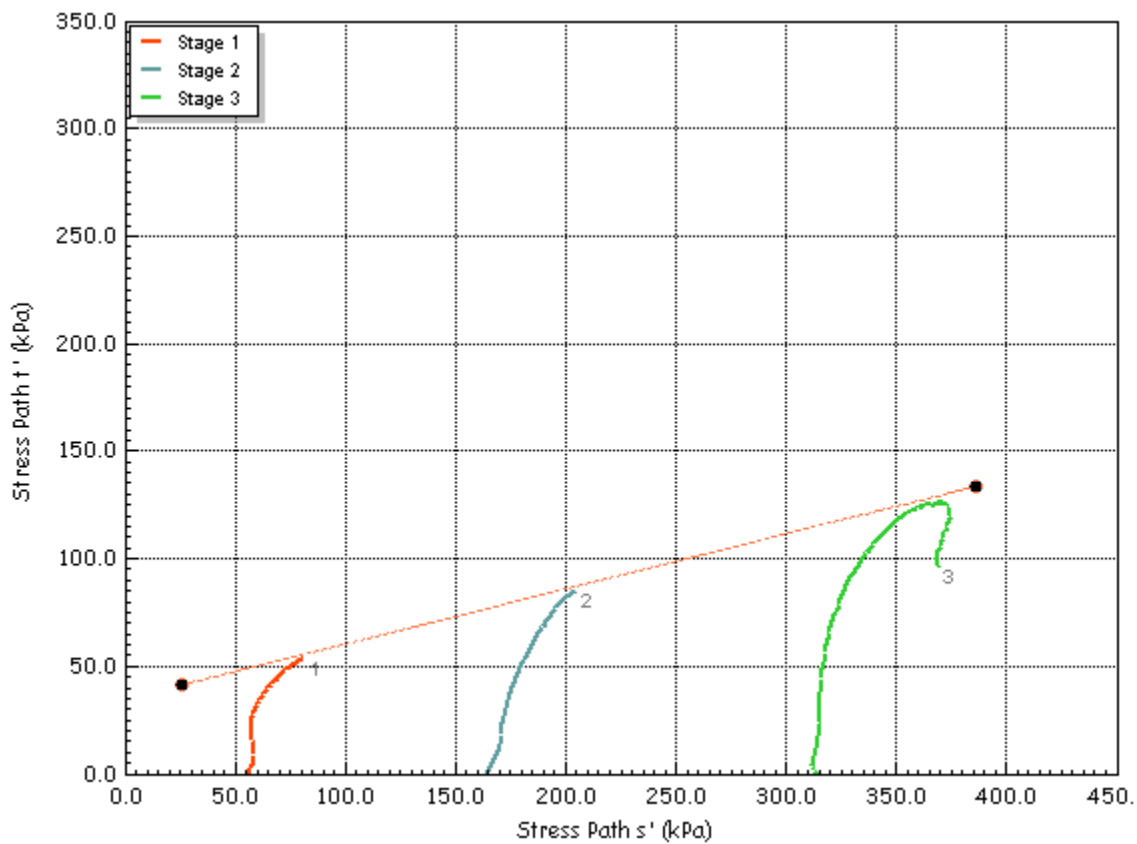
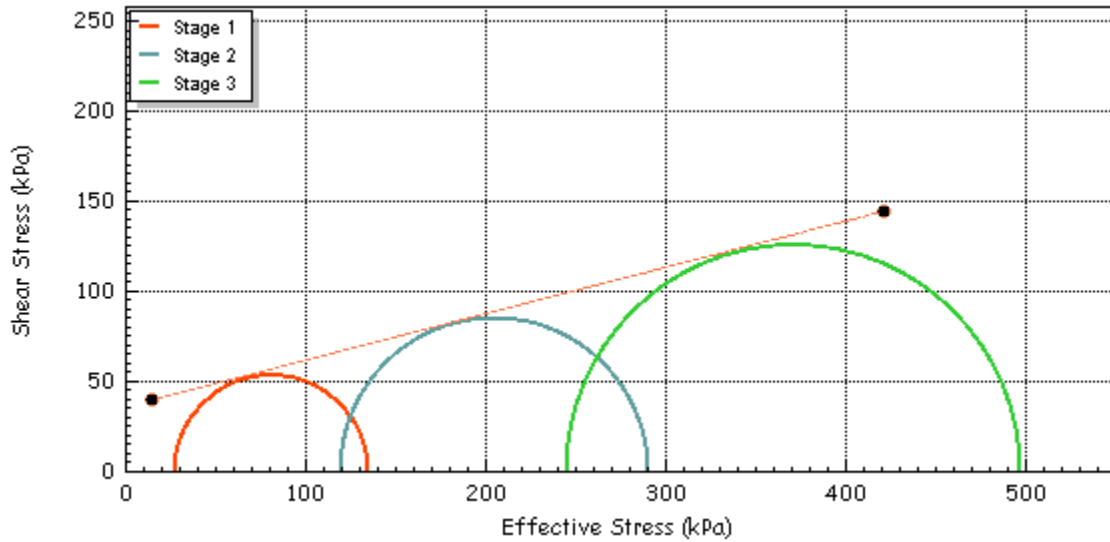
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	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH11	
	Jobfile	63583	Sample	14	
	Client	SOCOTEC	Depth	6.2-6.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	35.57	Effective Cohesion c'	(kPa)	35.75
Effective Friction ϕ'	(deg)	14.5	Effective Friction ϕ'	(deg)	14.8

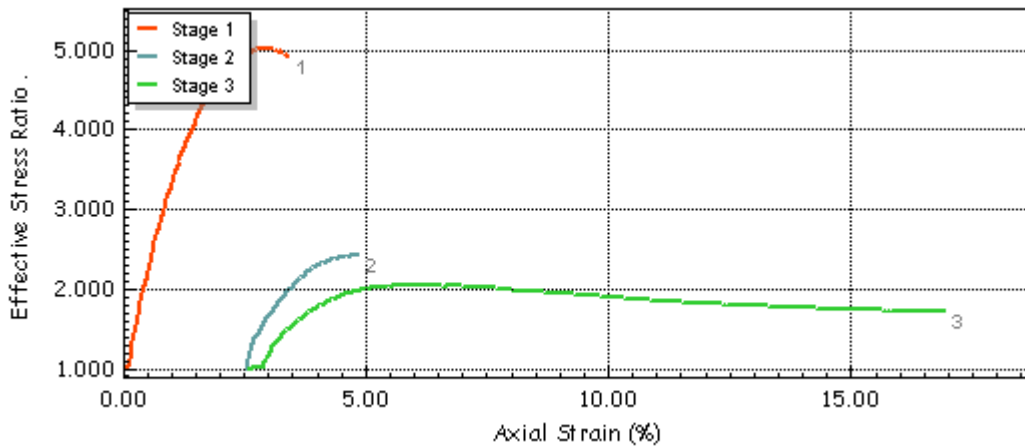
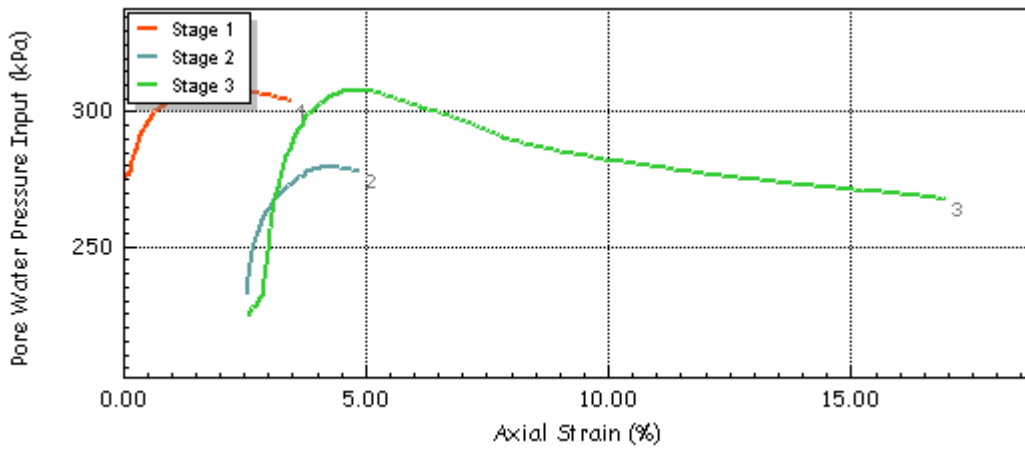
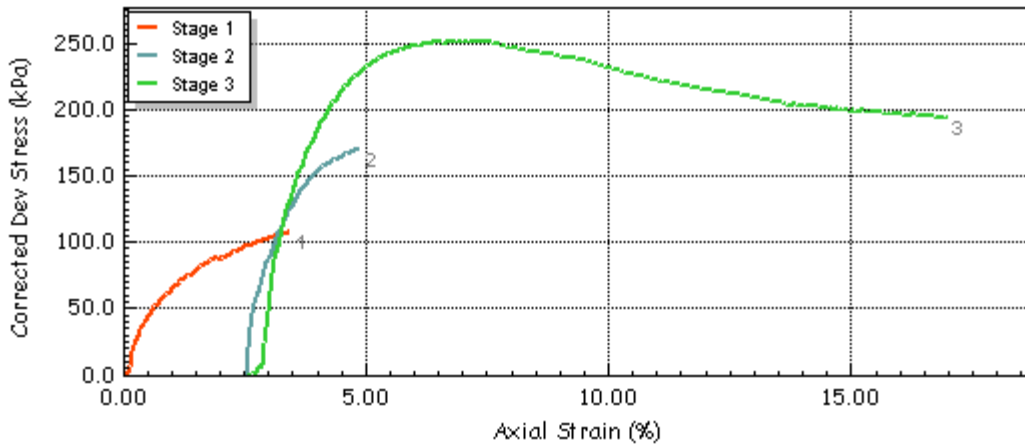


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH11	
	Jobfile	63583	Sample	14	
	Client	SOCOTEC	Depth	6.2-6.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

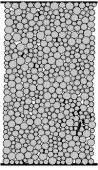


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH11	
	Jobfile	63583	Sample	14	
	Client	SOCOTEC	Depth	6.2-6.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained



Summary Report

Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">2.0-2.45</td> </tr> <tr> <td>Description</td> <td colspan="3">Brown, Fine to Medium Gravel, Silty, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>212.0</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.0</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3249.9</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.77</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	2.0-2.45			Description	Brown, Fine to Medium Gravel, Silty, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	212.0	Initial Sample Diameter	D_0	(mm)	105.0	Initial Sample Weight	W_0	(gr)	3249.9	Initial Bulk Density	ρ_0	(Mg/m ³)	1.77	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
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Initial Sample Weight	W_0	(gr)	3249.9																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.77																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions		Stage 1	2	3	4
Initial Cell Pressure	σ_{3i} (kPa)	520	540	580	
Initial Back Pressure	U_{bi} (kPa)	500	500	500	
Strain Rate	m_s (mm/min)	0.04000	0.00118	0.03400	
Membrane Thickness	m_b (mm)	0.400			
Displacement Input	L_{IP} (mm)	CH 2			
Load Input	N_{IP} (N)	CH 4			
Pore Water Pressure Input	u_{pwp} (kPa)	CH 3			
Sample Volume	V (cc)	CH 6			
Initial Moisture	ω_i (%)	37			
Initial Dry Density	ρ_{di} (Mg/m ³)	1.30			
Initial Voids Ratio	e_i	1.046			
Initial Degree of Saturation	S_i (%)	93			
B Value	B	1.00			

Final Conditions					
Final Moisture	ω_f (%)	37			
Final Dry Density	ρ_{df} (Mg/m ³)	1.34			
Final Voids Ratio	e_f	0.979			
Final Degree of Saturation	S_f (%)	99.2			
Failure Criteria		Stage 1	2	3	4
Strain At Failure	ϵ_f (%)	1.95	5.55	11.20	
Stress At Failure	$(\sigma_1 - \sigma_3)$ (kPa)	28.7	39.5	53.2	
Minor Stress At Failure	σ_3' (kPa)	10.8	26.0	49.4	
Major Stress At Failure	σ_1' (kPa)	39.5	65.5	102.6	
Principal Stress At Failure	σ_1' / σ_3'	3.661	2.519	2.077	
PwP At Failure Criteria	u_f	509.8	514.0	530.8	

Notes				 Plastic
Side Drains Used During Test				
	1	2	3	
Side Drain Correction at Failure (kpa)	3.33	3.33	3.33	
Membrane Correction at Failure (kpa)	0.20	0.57	0.92	

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 7	 2788
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH16	
	Jobfile	63583	Sample	1	
	Client	SOCOTEC	Depth	2.0-2.45	
Operator	██████████	Checked	██████████	Approved	██████████

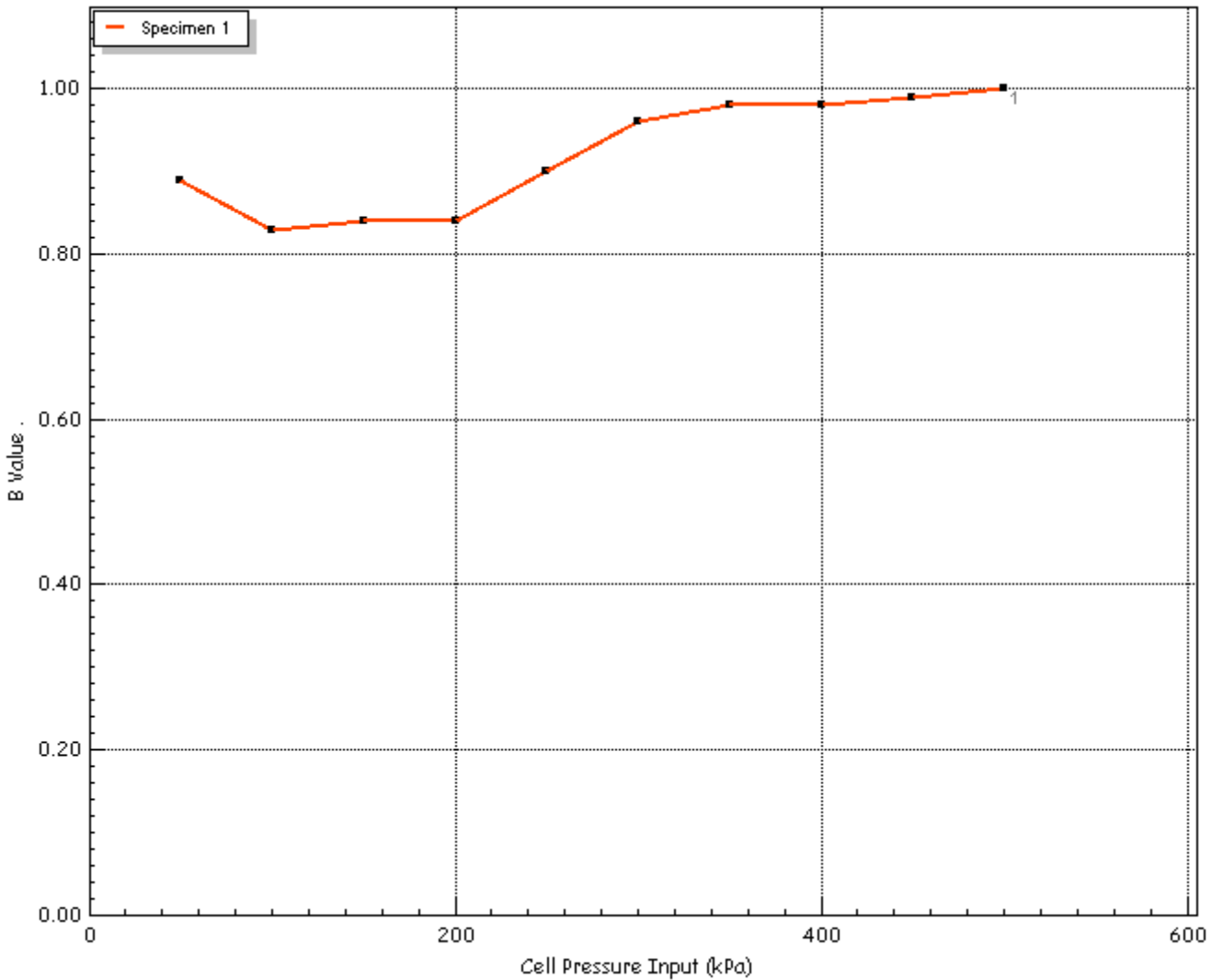
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	500
Pore Water Pressure Input	u_{pwp}	(kPa)	485
B Value	B	.	1.00



GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 7
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023
	Site Reference		Borehole	ATK_BH16
	Jobfile	63583	Sample	1
	Client	SOCOTEC	Depth	2.0-2.45
	Operator	██████████	Checked	██████████
			Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

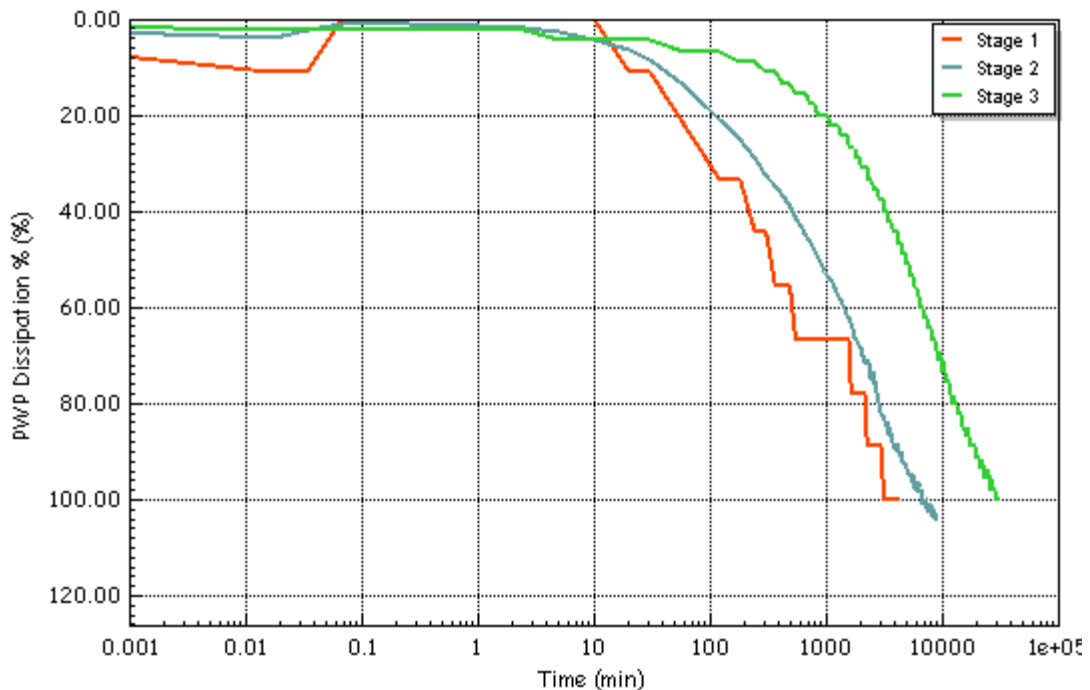
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	520	540	580
Initial Back Pressure	u_{bi}	(kPa)	500	500	500
Pore Water Pressure Input	u_{pwp}	(kPa)	509	521	545
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	103.82	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	0.56	1.52	2.82
Corrected Length	L_c	(mm)	211.6	204.1	192.3
Corrected Area	A_c	(cm ²)	86.27	88.08	90.78
Corrected Volume	V_c	(cc)	1825.479	1797.501	1745.682
t100	t_{100}	(min)	27.84	4788.00	15897.35
Consolidation	c_v	(m ² /year)	0.081	0.000	0.000
Compressibility	m_v	(m ² /MN)	0.62	0.72	0.63
Test Time	t_F	(h:m:s)	02:00:00	143:38:23	476:55:14
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08817	0.00118	0.00034

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 7	
	Database: GEOSIT-151826\SQLXPRESS2019 \ Test 1		Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH16	
	Jobfile	63583	Sample	1	
	Client	SOCOTEC	Depth	2.0-2.45	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

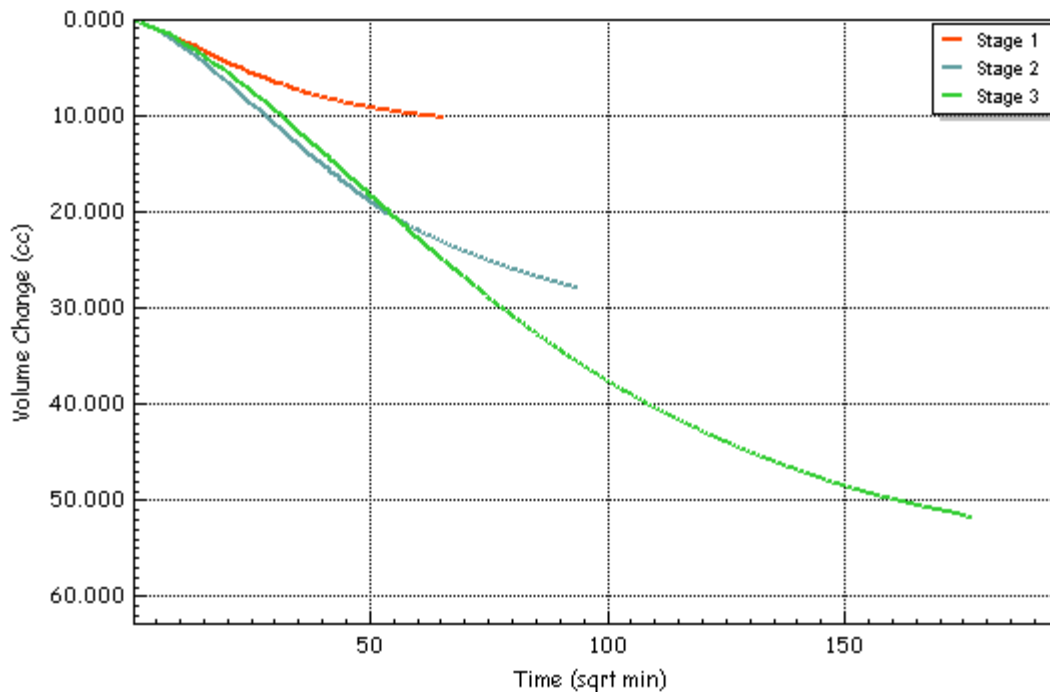
Consolidation Plots

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Compressibility	m_v	(m ² /MN)	0.62	0.72	0.63
Test Time	t_F	(h:m:s)	02:00:00	143:38:23	476:55:14
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08817	0.00118	0.00034

Notes

Side Drains Used During Test



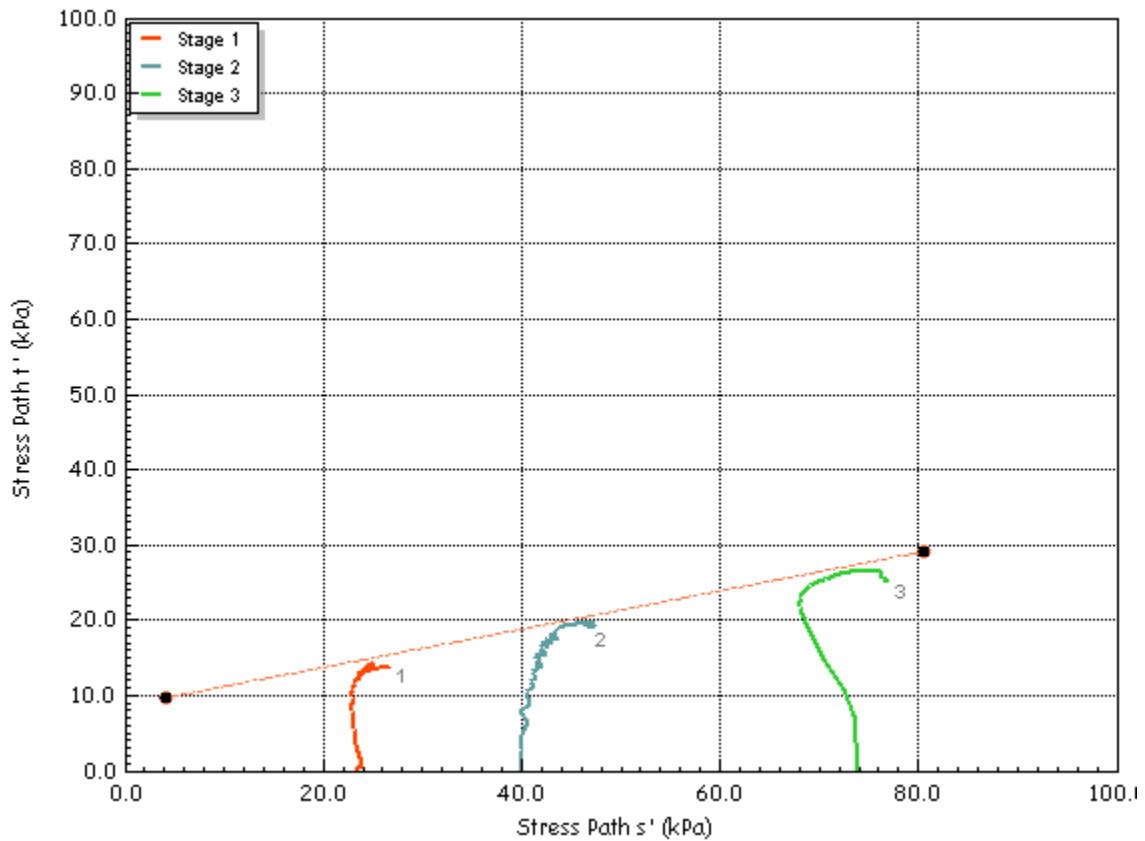
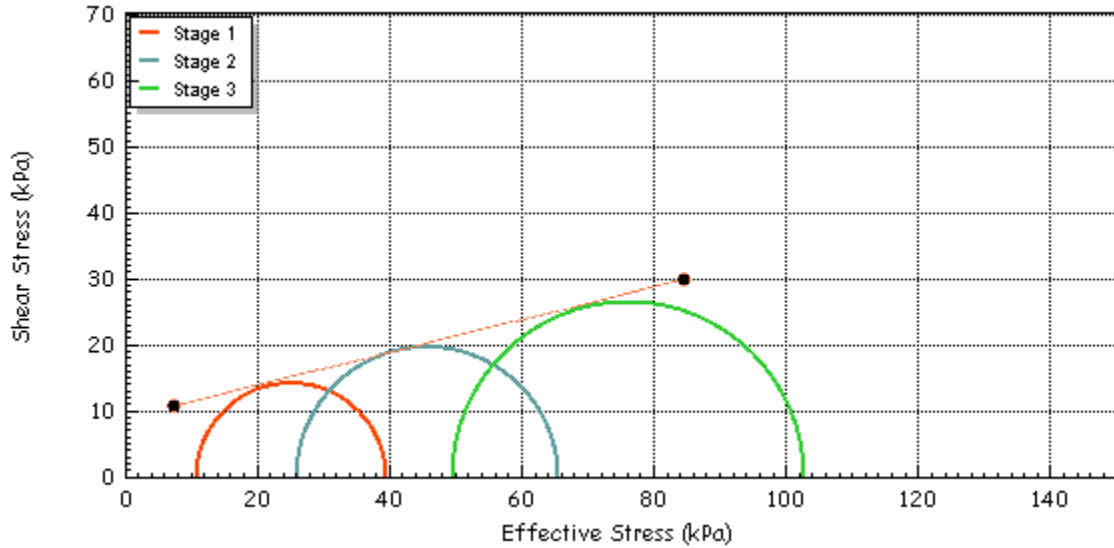
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	Database: GEOSIT-151826\SQLXPRESS2019 \ Test 1		Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH16	
	Jobfile	63583	Sample	1	
	Client	SOCOTEC	Depth	2.0-2.45	
	Operator	██████████	Checked	██████████	Approved

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	8.85	Effective Cohesion c'	(kPa)	8.84
Effective Friction ϕ'	(deg)	13.9	Effective Friction ϕ'	(deg)	14.7

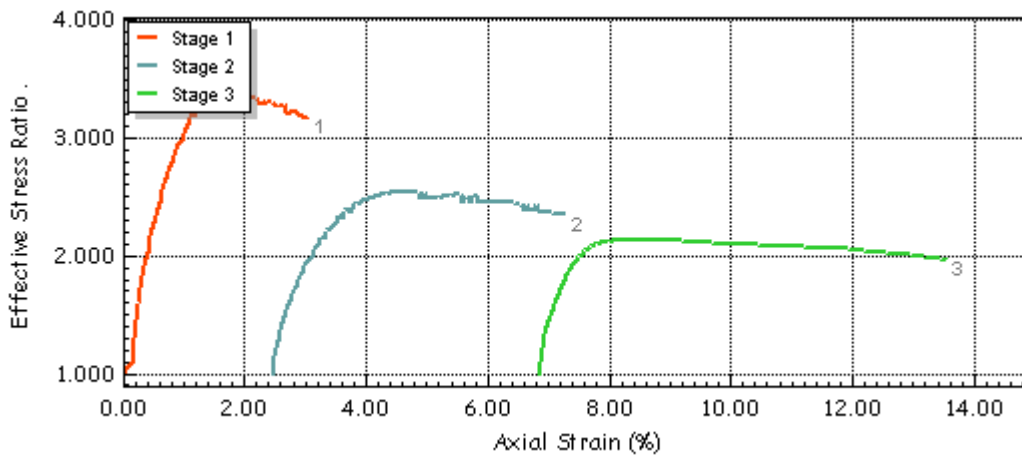
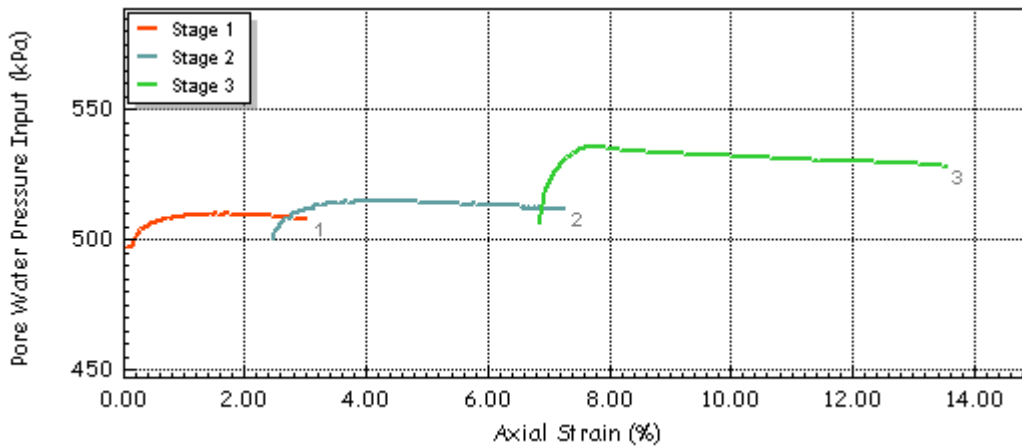
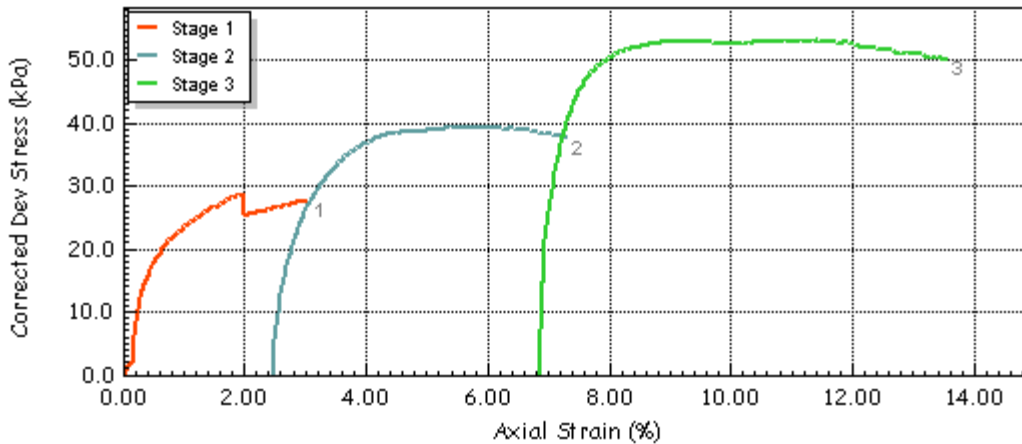



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 7	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH16	
	Jobfile	63583	Sample	1	
	Client	SOCOTEC	Depth	2.0-2.45	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 7	
	Database:	GEOSIT-151826\SQLXPRESS2019 \ Test 1	Test Date	05/01/2023	
	Site Reference		Borehole	ATK_BH16	
	Jobfile	63583	Sample	1	
	Client	SOCOTEC	Depth	2.0-2.45	
Operator	██████████	Checked	██████████	Approved	██████████



2788

Laboratory Report



Contract Number: 63955

Client Ref: **H2060-22**

Client PO:

Date Received: **20-01-2023**

Date Completed: **28-02-2023**

Report Date: **28-02-2023**

Client: **SOCOTEC**

Unit 15

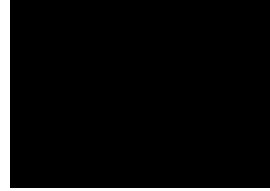
Crosby Yard Industrial Estate

Wildmill

Bridgend

CF31 1JZ

This report has been checked and approved by:



Office Administrator

Contract Title: **Lyneham Banks**

For the attention of:

Test Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	18
Determination of water content BS EN ISO 17892-1:2014 - * UKAS	4
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	22
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	22
PSD: Sedimentation by pipette carried out with Wet Sieve (Wet Sieve must also be selected) BS 1377:1990 - Part 2 : 9.4 - * UKAS	22
Quick Undrained Triaxial Compression test - single specimen at one confining pressure (100mm or 38mm diameter) BS 1377:1990 - Part 7 : 8 - * UKAS	15
CUT 100mm Consolidated undrained triaxial compression test on a Single Specimen with Multistage Loading with the measurement of pore water pressure including saturation and consolidation, test duration FOUR days. PLEASE NOTE IT IS LIKELY THIS TEST WILL INCUR EXTRA OVER DAY CHARGES. BS 1377:1990 - Part 8 : 7 - * UKAS	4

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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 test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (Human Resources/ Health and Safety Manager)

GEO Site & Testing Services Ltd

Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk



2788

Laboratory Report



Contract Number: 63955

Test Description	Qty
Extra over items for test duration in excess of four days.	39
One-dimensional Consolidation 75mm or 50mm diameter specimens (up to 5 stages/days) BS 1377:1990 - Part 5 : 3 - * UKAS	6
As 5.01, 5.03 & 5.04 each extra additional stage/day BS 1377:1990 - Part 5 : 3	12
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

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Determination of Water Content
BS EN ISO 17892-1:2014+A1:2022

Contract Number	63955
Project Name	Lyneham Banks
Date Tested	31/01/2023

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Water Content %	Remarks
ATKRD_BH03	103	D	2.20	-		40.6	
ATKRD_BH03	10	L	4.70	-	5.20	39.6	
ATKRD_BH03	111	D	6.60	-		22.1	
ATKRD_BH03	117	D	10.00	-		20.8	
				-			
				-			
				-			
				-			
				-			
				-			
				-			
				-			
				-			
				-			
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				-			

*For sample descriptions please see sample descriptions sheet

Operator

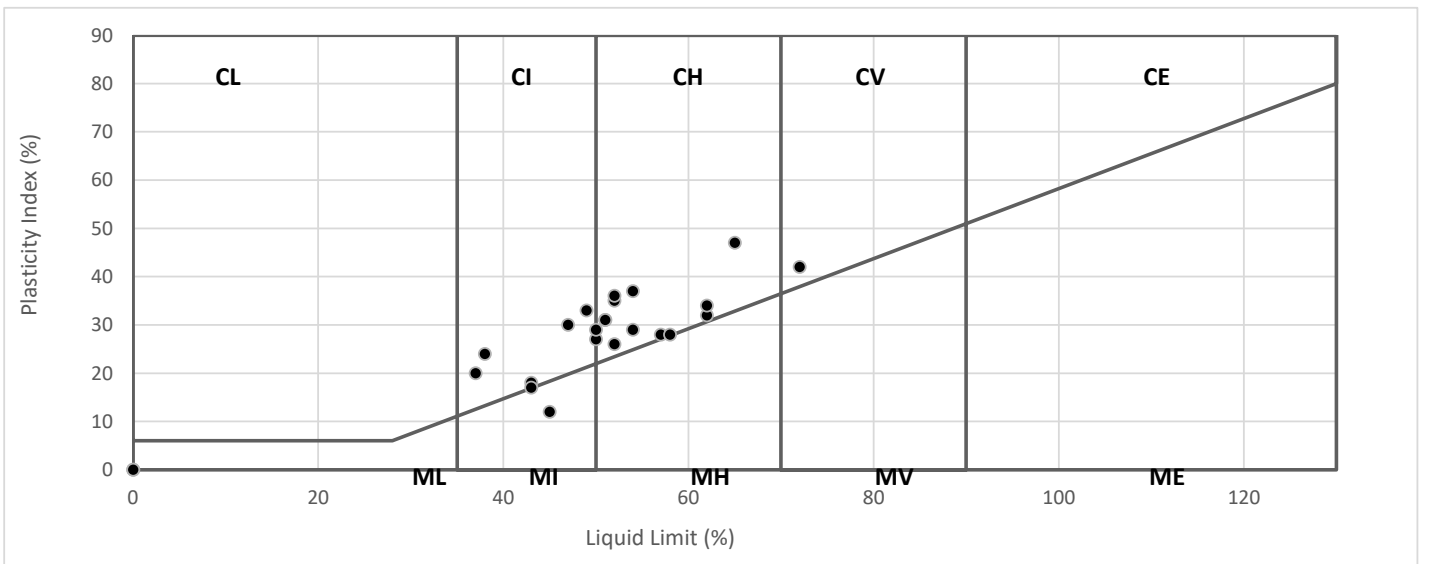
NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)

Contract Number	63955
Project Name	Lyneham Banks
Date Tested	31/01/2023

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)		Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks	
ATK_BH01	9	B	0.80	-	1.20	47	62	30	32	97	CH High Plasticity
ATKRD_BH02	101	D	2.00	-		40	57	29	28	98	CH High Plasticity
ATKRD_BH02	103	D	4.20	-		24	51	20	31	94	CH High Plasticity
ATKRD_BH02	106	D	6.60	-		18	37	17	20	100	CI Intermediate Plasticity
ATKRD_BH02	14	D	11.10	-		20	49	16	33	99	CI Intermediate Plasticity
ATKRD_BH03	103	D	2.20	-			62	28	34	98	CH High Plasticity
ATKRD_BH03	10	L	4.70	-	5.20		72	30	42	99	CV Very High Plasticity
ATKRD_BH03	111	D	6.60	-			38	14	24	99	CI Intermediate Plasticity
ATKRD_BH03	117	D	10.00	-			54	25	29	84	CH High Plasticity
ATKRD_BH04	101	D	3.50	-		20	47	17	30	99	CI Intermediate Plasticity
ATKRD_BH04	10	L	4.70	-	5.70	22	52	17	35	100	CH High Plasticity
ATKRD_BH04	12	D	6.20	-		23	65	18	47	99	CH High Plasticity
ATKRD_BH04	15	D	8.80	-		30	50	23	27	100	CI/H Inter/High Plasticity
ATK_BH07	8	D	1.10	-		25	52	16	36	96	CH High Plasticity
ATK_BH07	104	D	3.90	-		28	54	17	37	99	CH High Plasticity
ATK_BH07	118	D	12.50	-		23	43	25	18	100	CI Intermediate Plasticity
ATKRD_BH08	104	D	3.80	-		30	45	33	12	91	MI Intermediate Plasticity
ATKRD_BH08	107	D	5.80	-		29	50	21	29	98	CI/H Inter/High Plasticity
ATKRD_BH08	111	D	7.80	-		25	51	20	31	97	CH High Plasticity
ATKRD_BH08	118	D	13.30	-		21	43	26	17	99	CI Intermediate Plasticity
ATKRD_BH09	105	D	3.80	-		35	52	26	26	99	CH High Plasticity
ATKRD_BH09	109	D	6.70	-		26	58	30	28	100	CH High Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:2015+A1:2020



Operator
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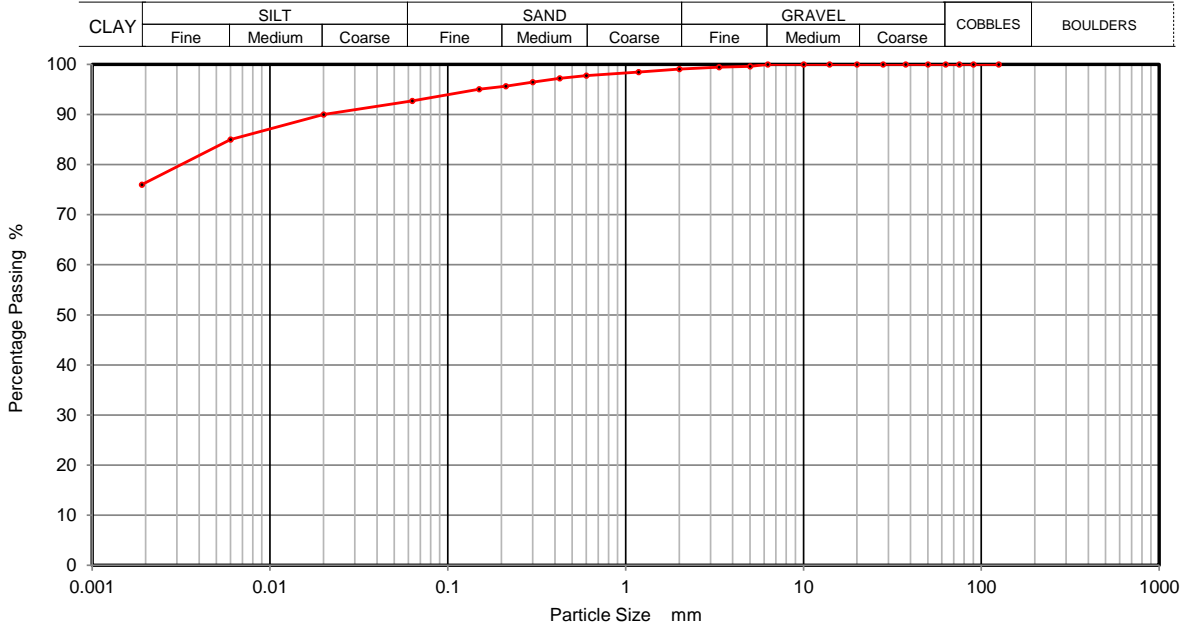




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATK_BH01
Sample No.	9
Depth Top	0.80
Depth Base	1.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	90
90	100	0.0060	85
75	100	0.0020	76
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	98		
0.6	98		
0.425	97		
0.3	96		
0.212	96		
0.15	95		
0.063	93		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	6
Silt	17
Clay	76

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



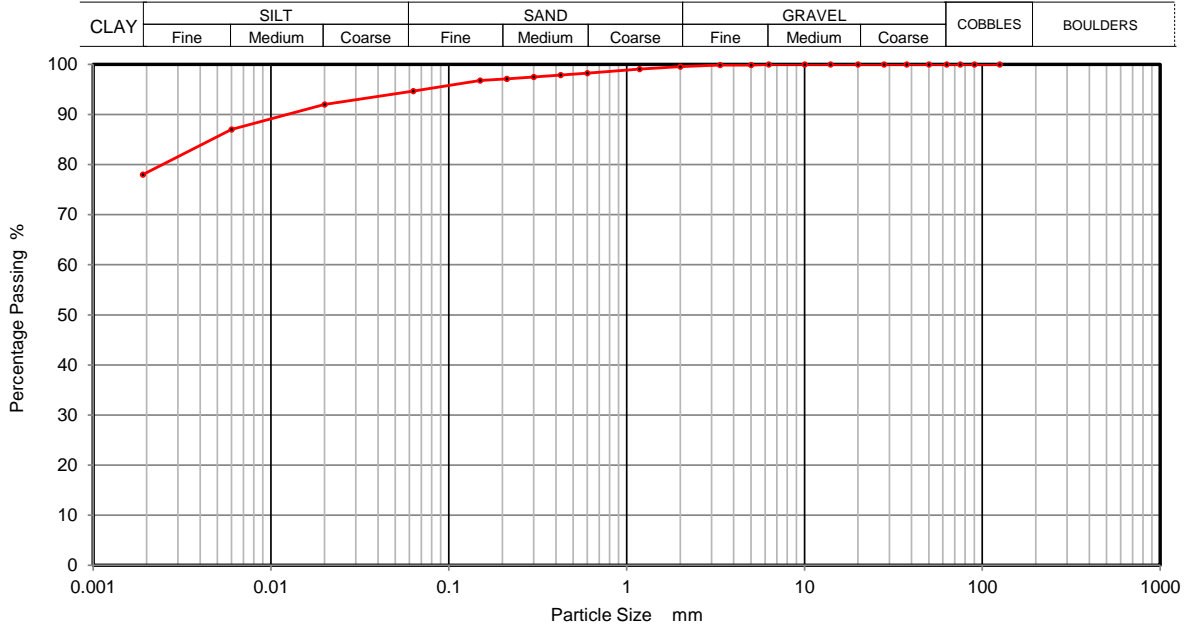
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH02
Sample No.	101
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	92
90	100	0.0060	87
75	100	0.0020	78
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	98		
0.425	98		
0.3	97		
0.212	97		
0.15	97		
0.063	95		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	5
Silt	17
Clay	78

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



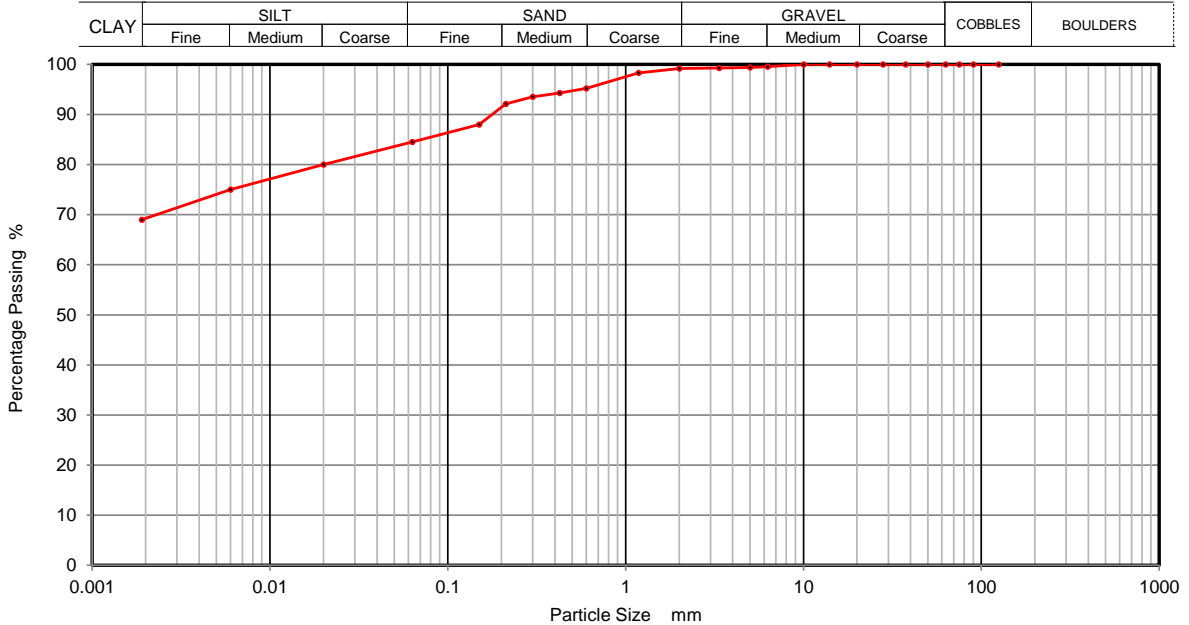
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH02
Sample No.	103
Depth Top	4.20
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	80
90	100	0.0060	75
75	100	0.0020	69
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	99		
2	99		
1.18	98		
0.6	95		
0.425	94		
0.3	93		
0.212	92		
0.15	88		
0.063	84		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	15
Silt	15
Clay	69

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



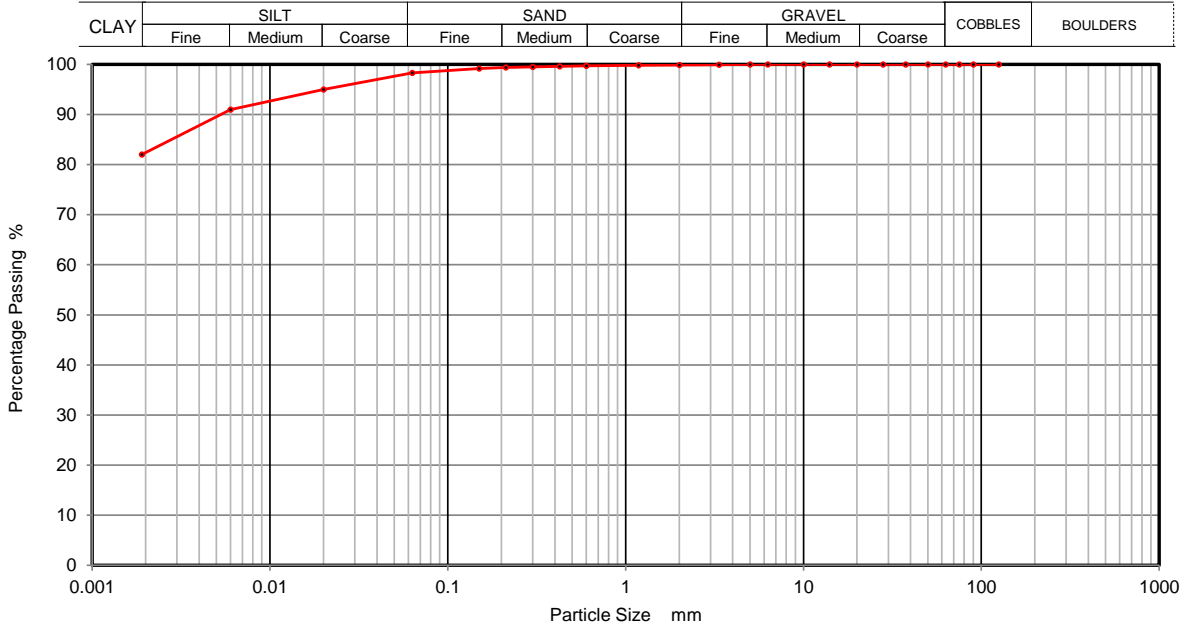
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH02
Sample No.	106
Depth Top	6.60
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	95
90	100	0.0060	91
75	100	0.0020	82
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	99		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Silt	16
Clay	82

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████



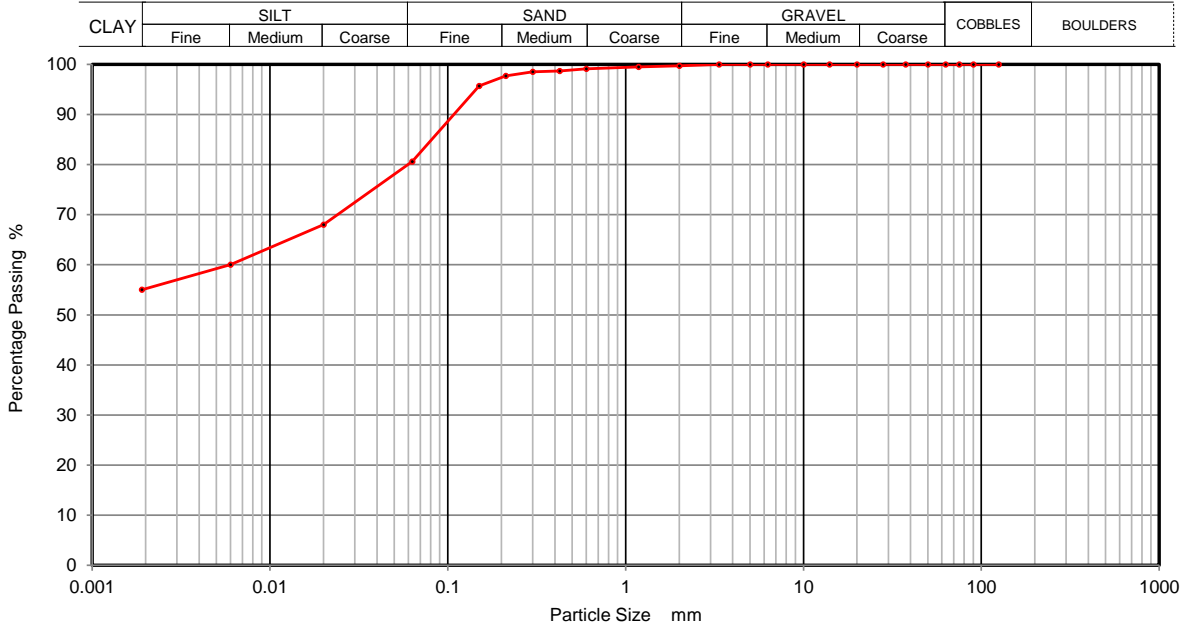
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH02
Sample No.	14
Depth Top	11.10
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	68
90	100	0.0060	60
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	99		
0.3	99		
0.212	98		
0.15	96		
0.063	81		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	19
Silt	26
Clay	55

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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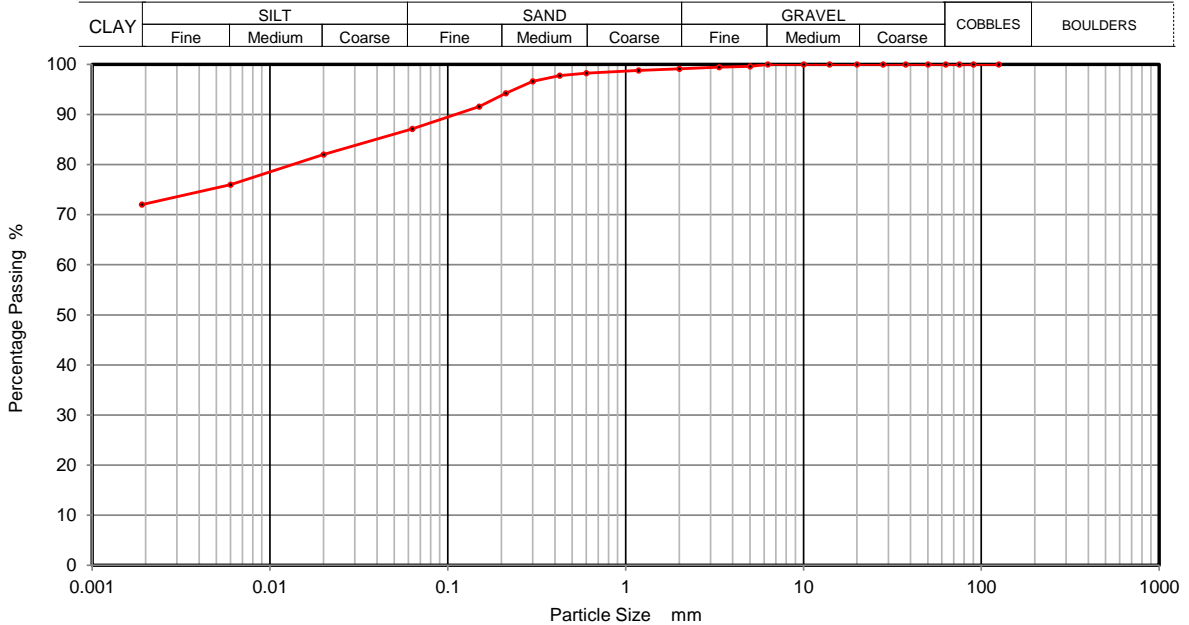
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH03
Sample No.	103
Depth Top	2.20
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	82
90	100	0.0060	76
75	100	0.0020	72
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	99		
0.6	98		
0.425	98		
0.3	97		
0.212	94		
0.15	92		
0.063	87		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	12
Silt	15
Clay	72

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



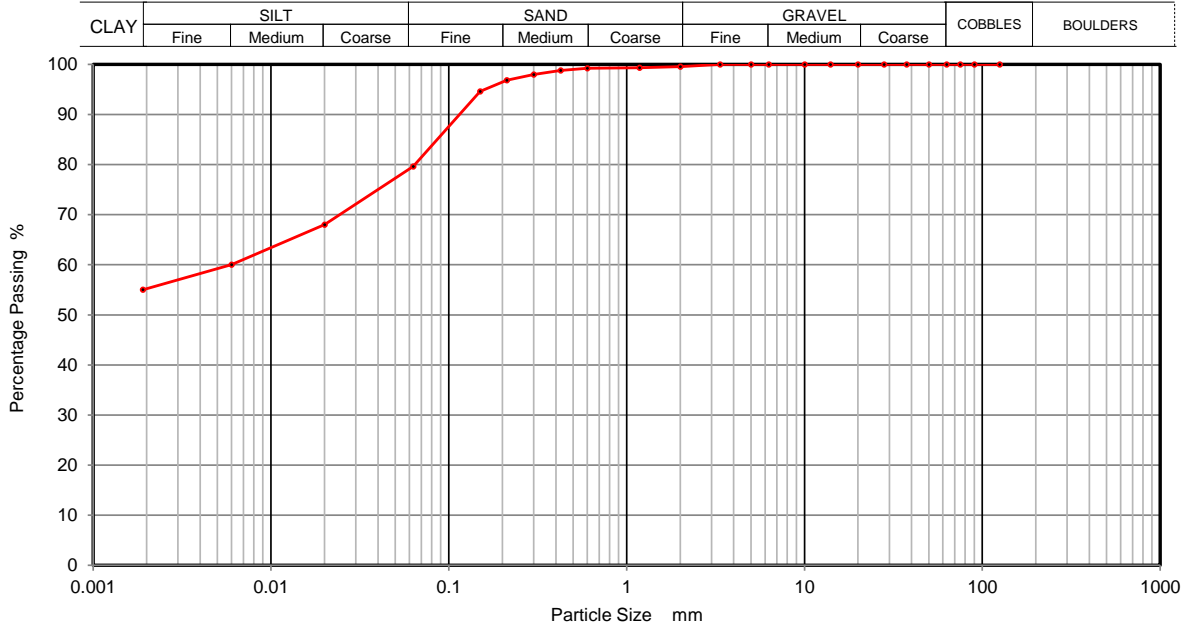
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH03
Sample No.	10
Depth Top	4.70
Depth Base	5.20
Sample Type	L

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	68
90	100	0.0060	60
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	99		
0.3	98		
0.212	97		
0.15	95		
0.063	80		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	20
Silt	25
Clay	55

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



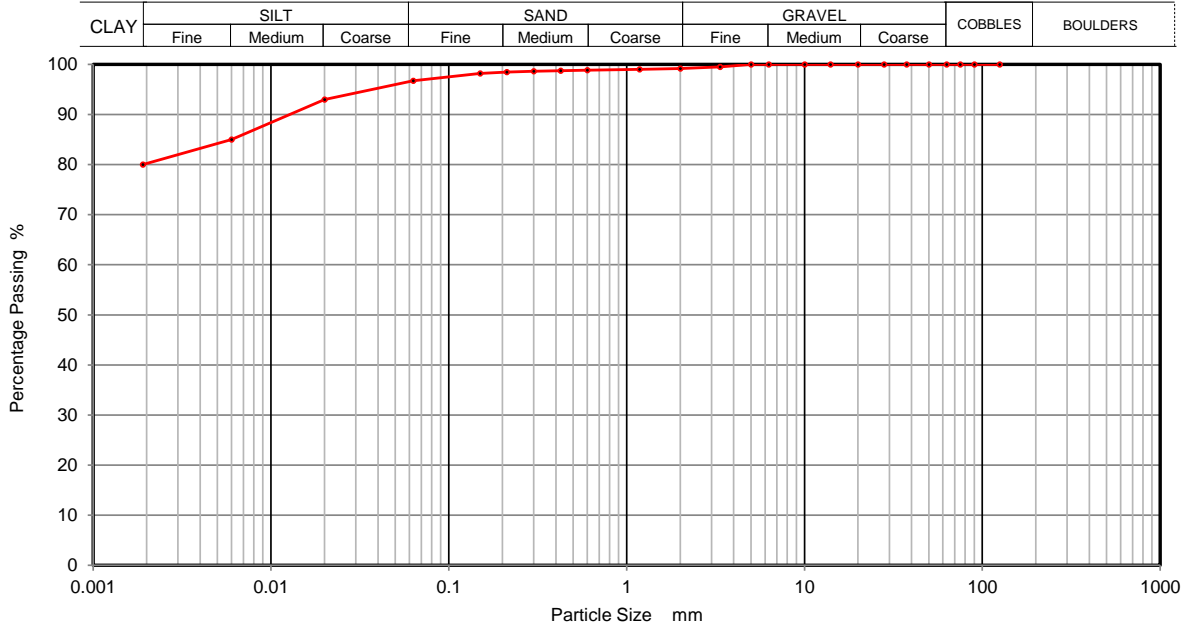
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH03
Sample No.	111
Depth Top	6.60
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	93
90	100	0.0060	85
75	100	0.0020	80
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	99		
0.6	99		
0.425	99		
0.3	99		
0.212	98		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	2
Silt	17
Clay	80

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



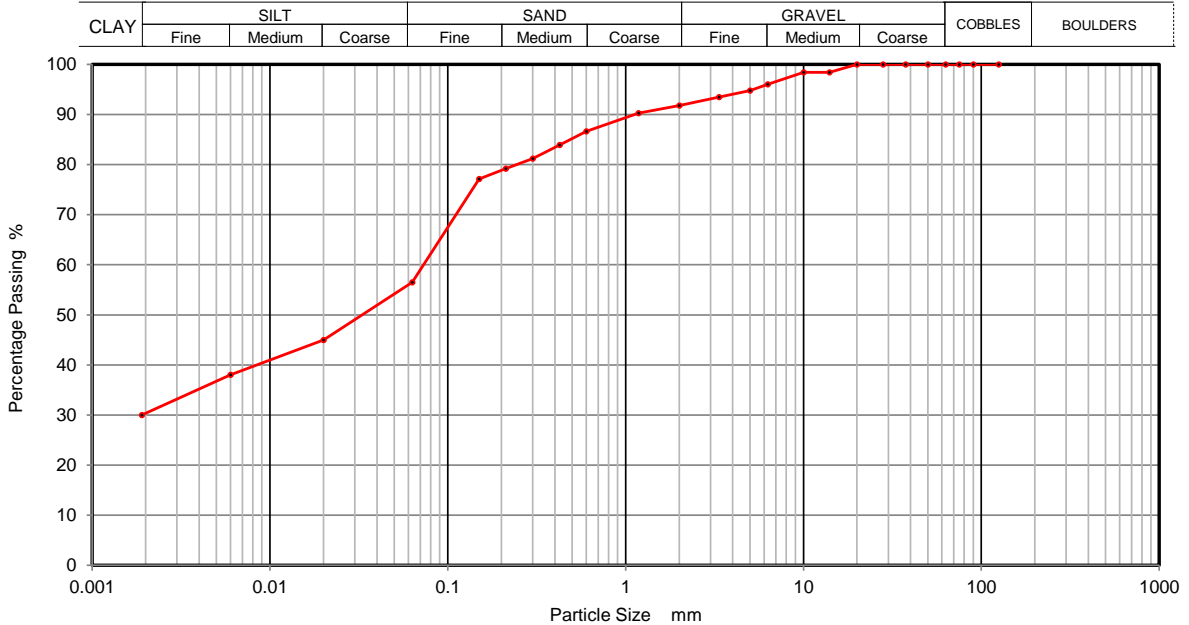
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	63955
Borehole/Pit No.	ATKRD_BH03
Sample No.	117
Depth Top	10.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	45
90	100	0.0060	38
75	100	0.0020	30
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	98		
6.3	96		
5	95		
3.35	93		
2	92		
1.18	90		
0.6	87		
0.425	84		
0.3	81		
0.212	79		
0.15	77		
0.063	57		

Sample Proportions	% dry mass
Cobbles	0
Gravel	8
Sand	35
Silt	27
Clay	30

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]



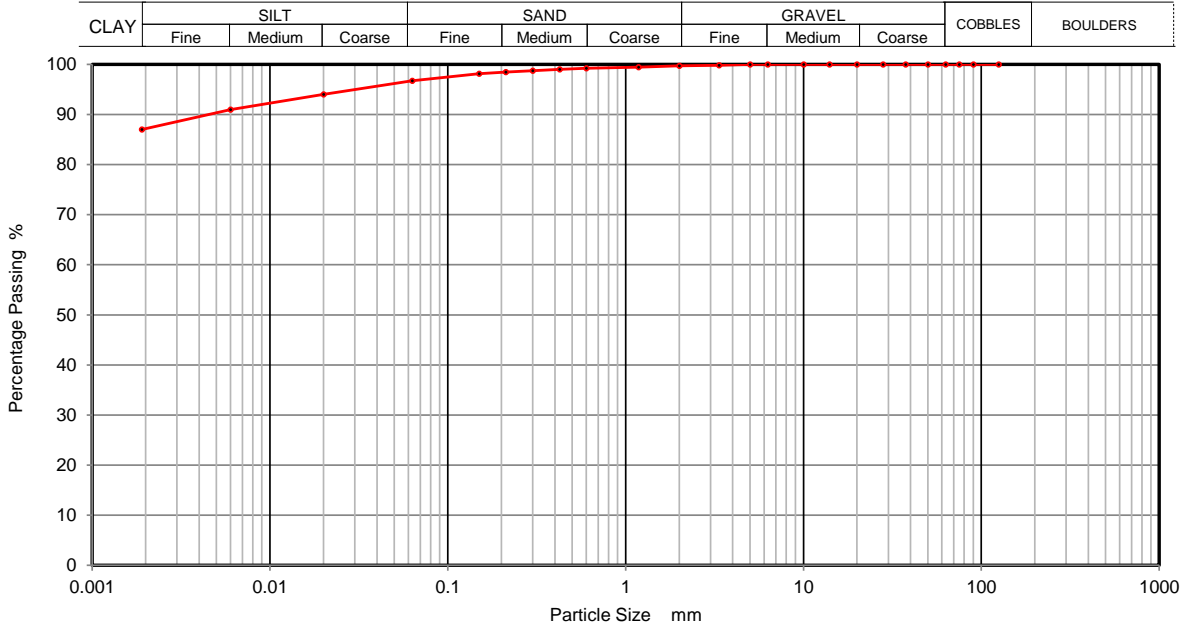
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH04
Sample No.	101
Depth Top	3.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	94
90	100	0.0060	91
75	100	0.0020	87
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	99		
0.3	99		
0.212	98		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	3
Silt	10
Clay	87

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



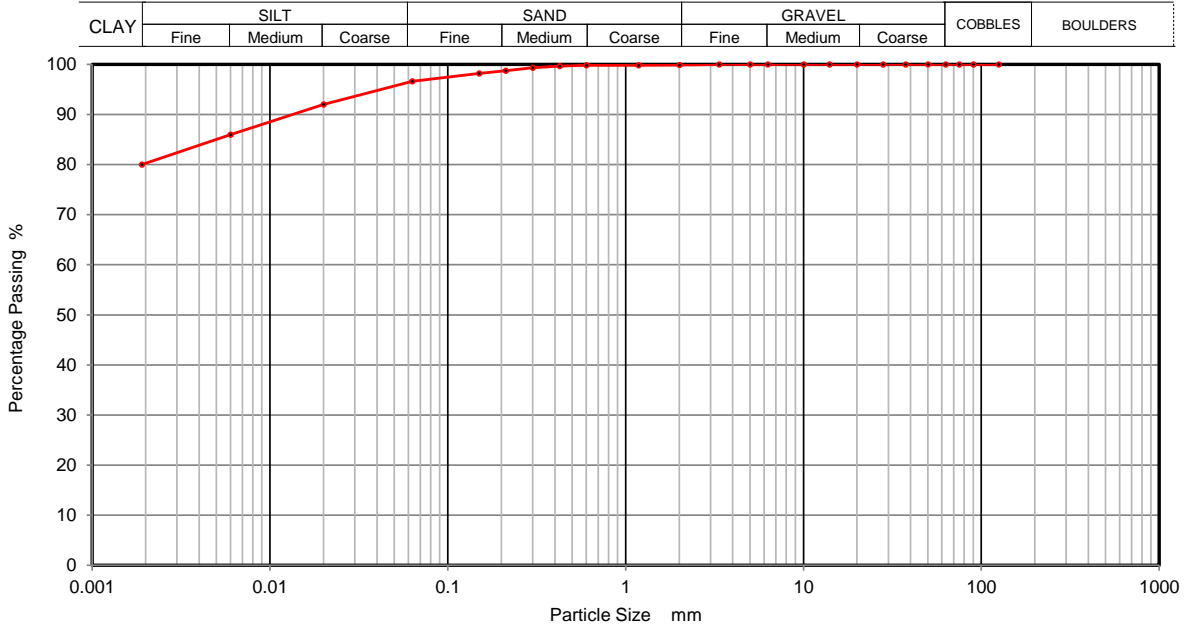
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH04
Sample No.	10
Depth Top	4.70
Depth Base	5.70
Sample Type	L

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	92
90	100	0.0060	86
75	100	0.0020	80
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	99		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	3
Silt	17
Clay	80

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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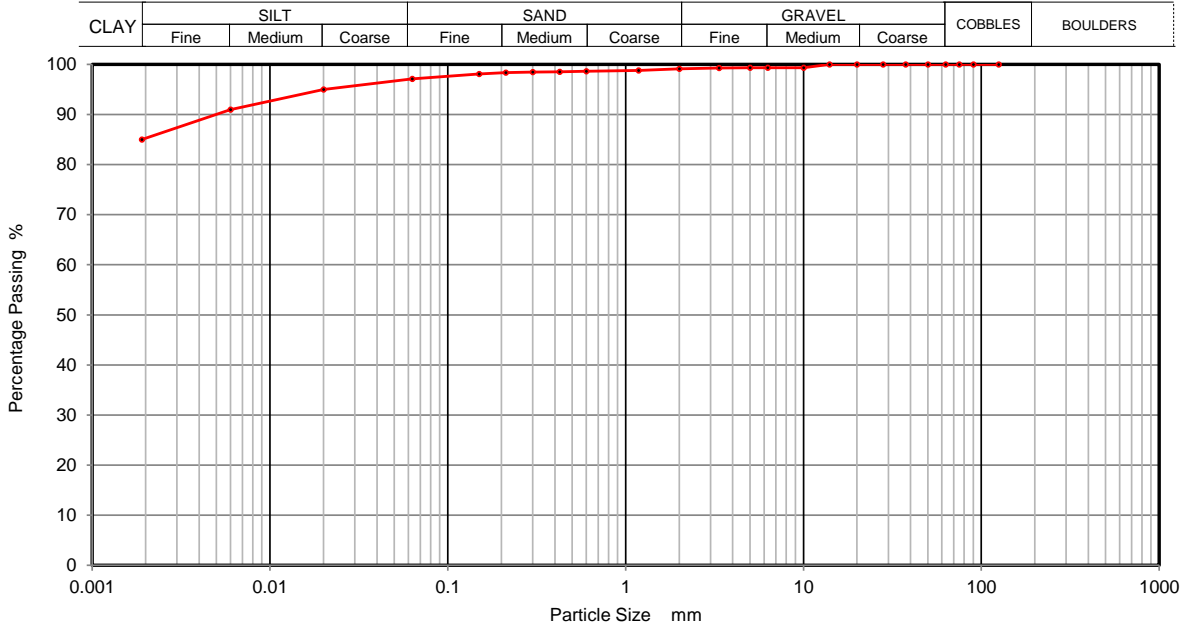
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH04
Sample No.	12
Depth Top	6.20
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	95
90	100	0.0060	91
75	100	0.0020	85
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	99		
3.35	99		
2	99		
1.18	99		
0.6	99		
0.425	99		
0.3	98		
0.212	98		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	2
Silt	12
Clay	85

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



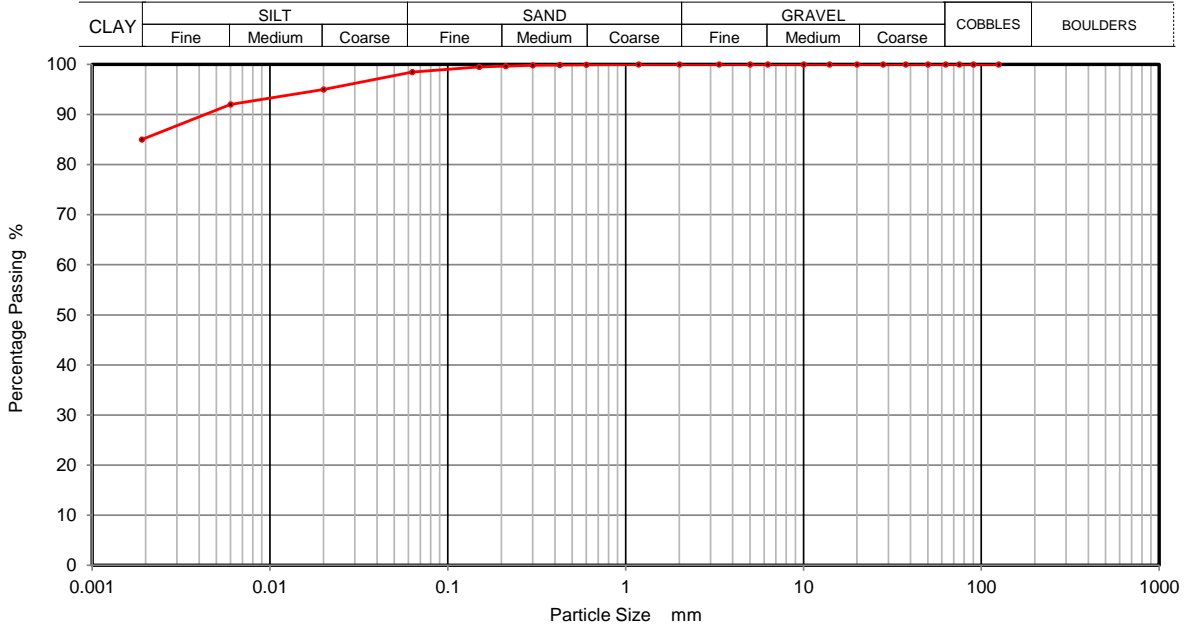
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH04
Sample No.	15
Depth Top	8.80
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	95
90	100	0.0060	92
75	100	0.0020	85
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	99		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Silt	13
Clay	85

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



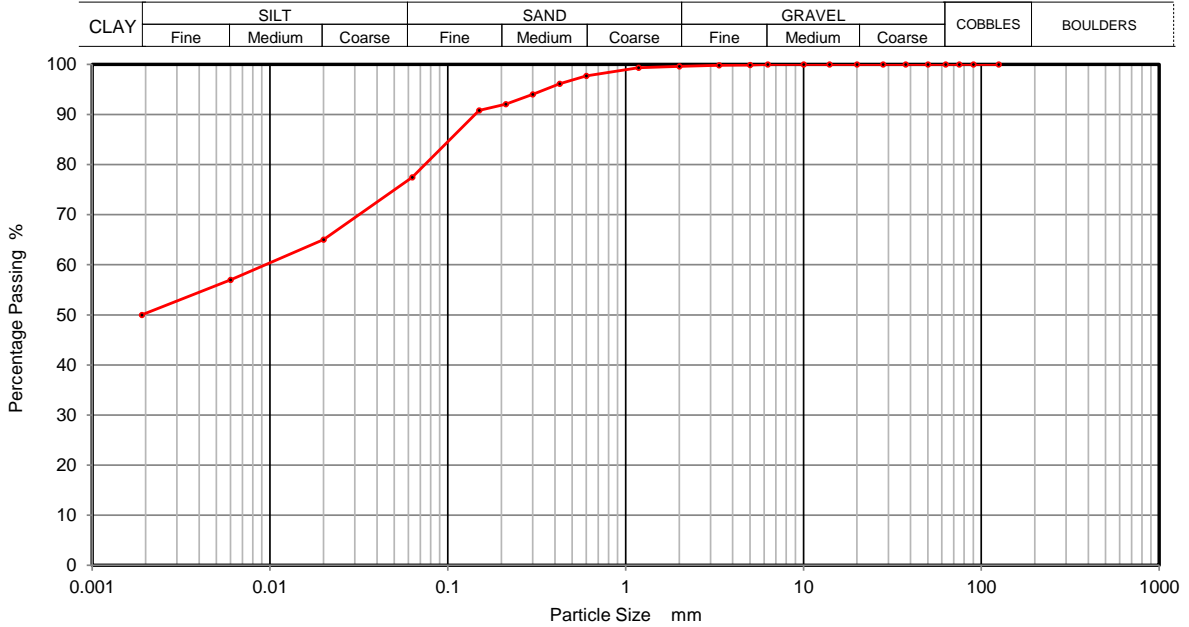
2788



**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATK_BH07
Sample No.	8
Depth Top	1.10
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	65
90	100	0.0060	57
75	100	0.0020	50
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	98		
0.425	96		
0.3	94		
0.212	92		
0.15	91		
0.063	77		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	23
Silt	27
Clay	50

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



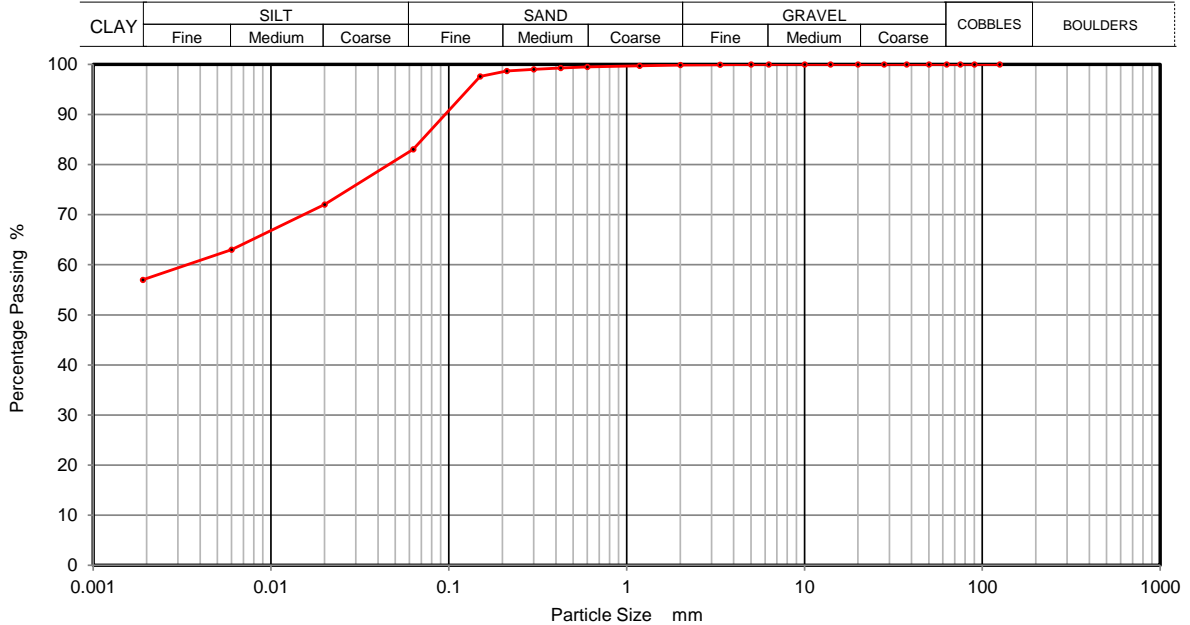
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATK_BH07
Sample No.	104
Depth Top	3.90
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	72
90	100	0.0060	63
75	100	0.0020	57
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	98		
0.063	83		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	17
Silt	26
Clay	57

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



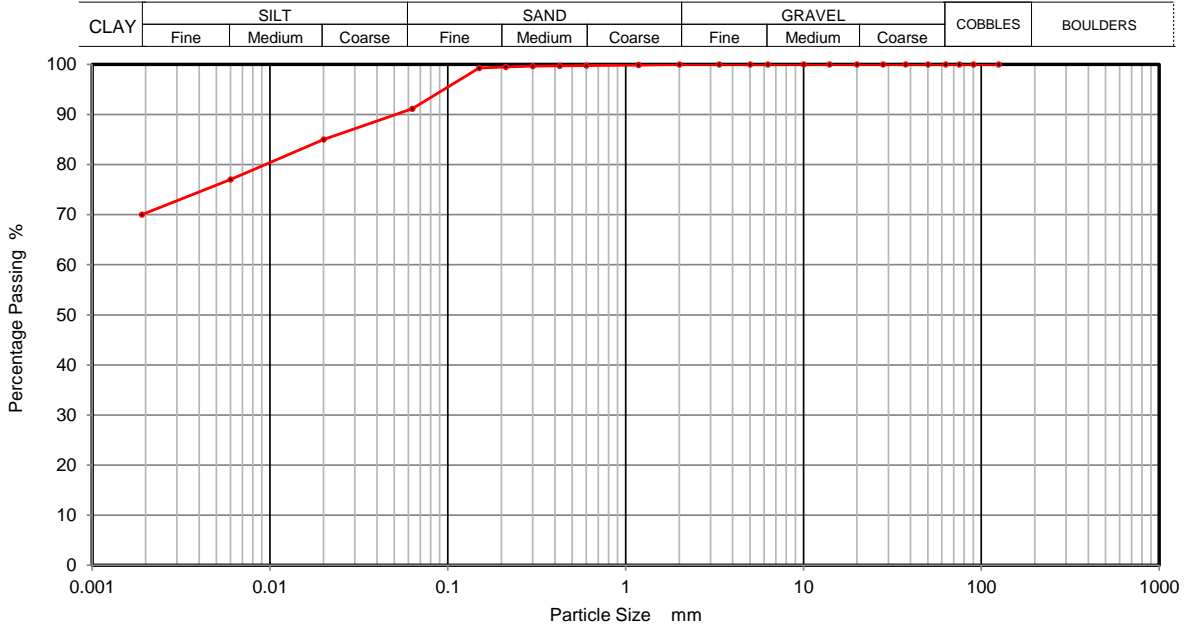
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH07
Sample No.	118
Depth Top	12.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	85
90	100	0.0060	77
75	100	0.0020	70
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	99		
0.063	91		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	9
Silt	21
Clay	70

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



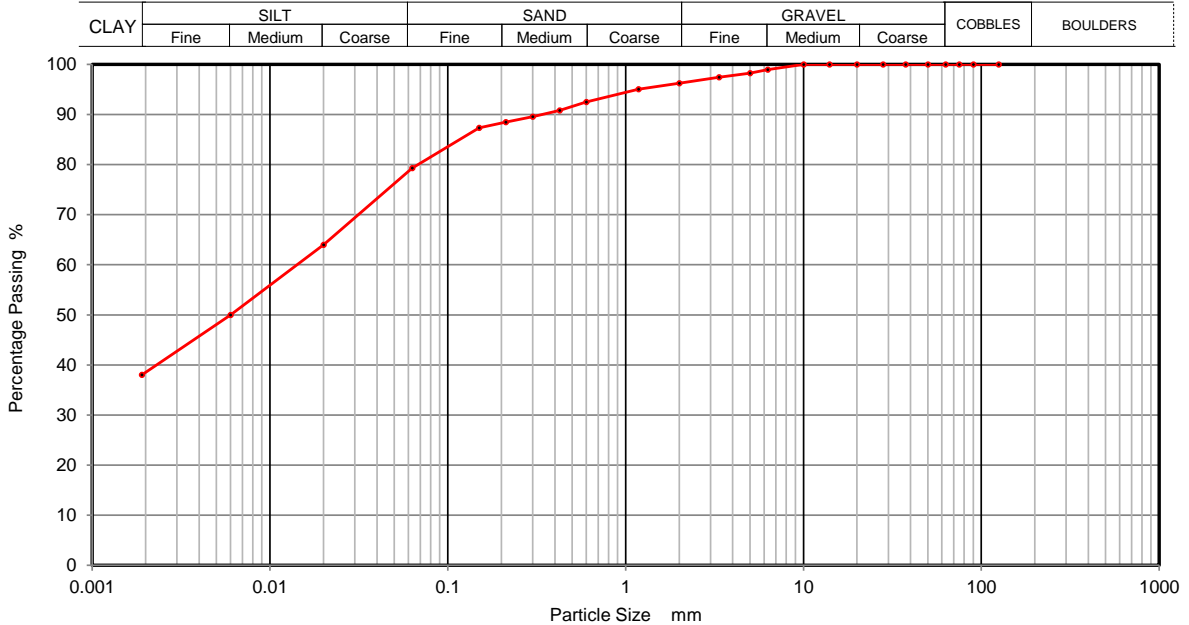
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH08
Sample No.	104
Depth Top	3.80
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	64
90	100	0.0060	50
75	100	0.0020	38
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	98		
3.35	97		
2	96		
1.18	95		
0.6	93		
0.425	91		
0.3	90		
0.212	89		
0.15	87		
0.063	79		

Sample Proportions	% dry mass
Cobbles	0
Gravel	4
Sand	17
Silt	41
Clay	38

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



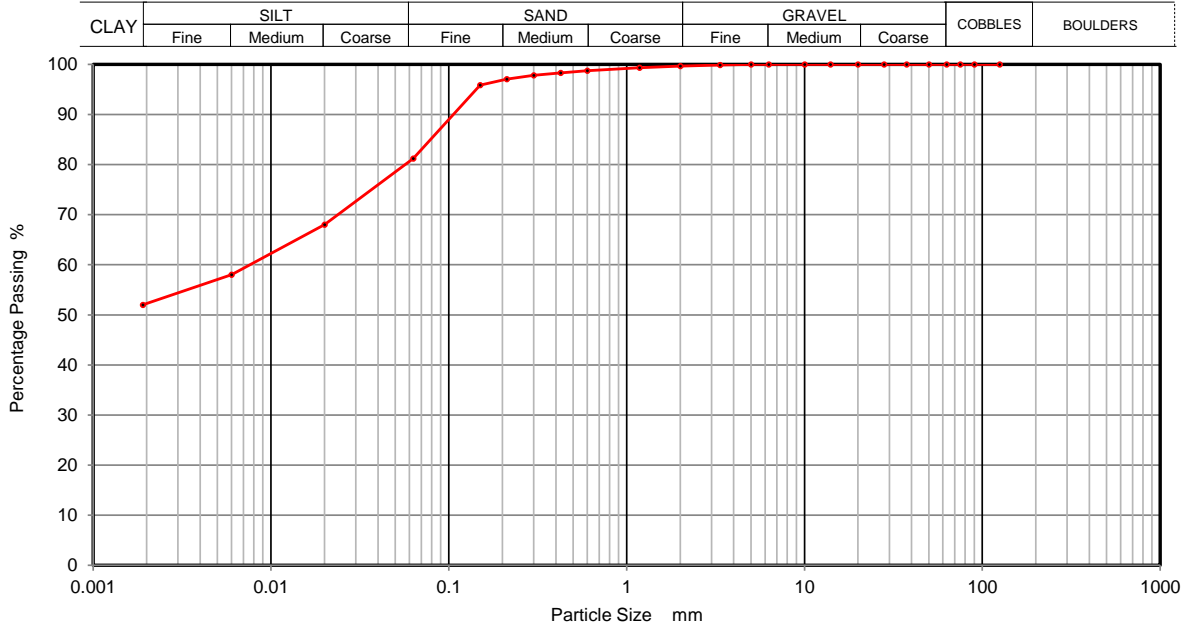
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH08
Sample No.	107
Depth Top	5.80
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	68
90	100	0.0060	58
75	100	0.0020	52
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	98		
0.3	98		
0.212	97		
0.15	96		
0.063	81		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	19
Silt	29
Clay	52

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



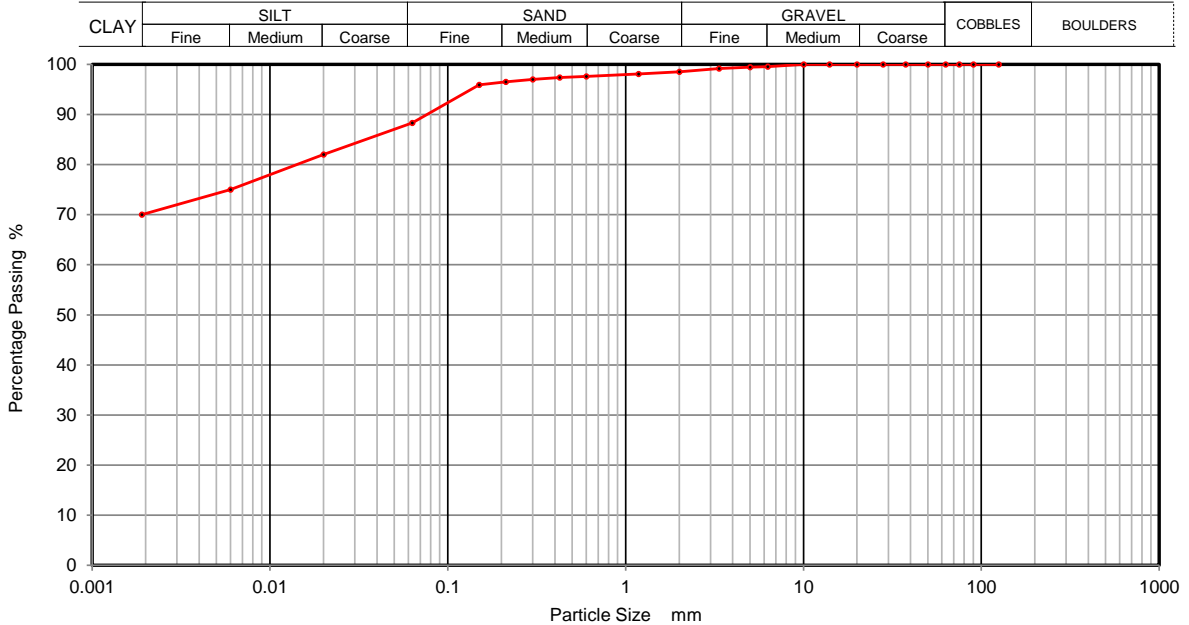
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH08
Sample No.	111
Depth Top	7.80
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	82
90	100	0.0060	75
75	100	0.0020	70
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	99		
2	99		
1.18	98		
0.6	98		
0.425	97		
0.3	97		
0.212	97		
0.15	96		
0.063	88		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	11
Silt	18
Clay	70

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
██████████



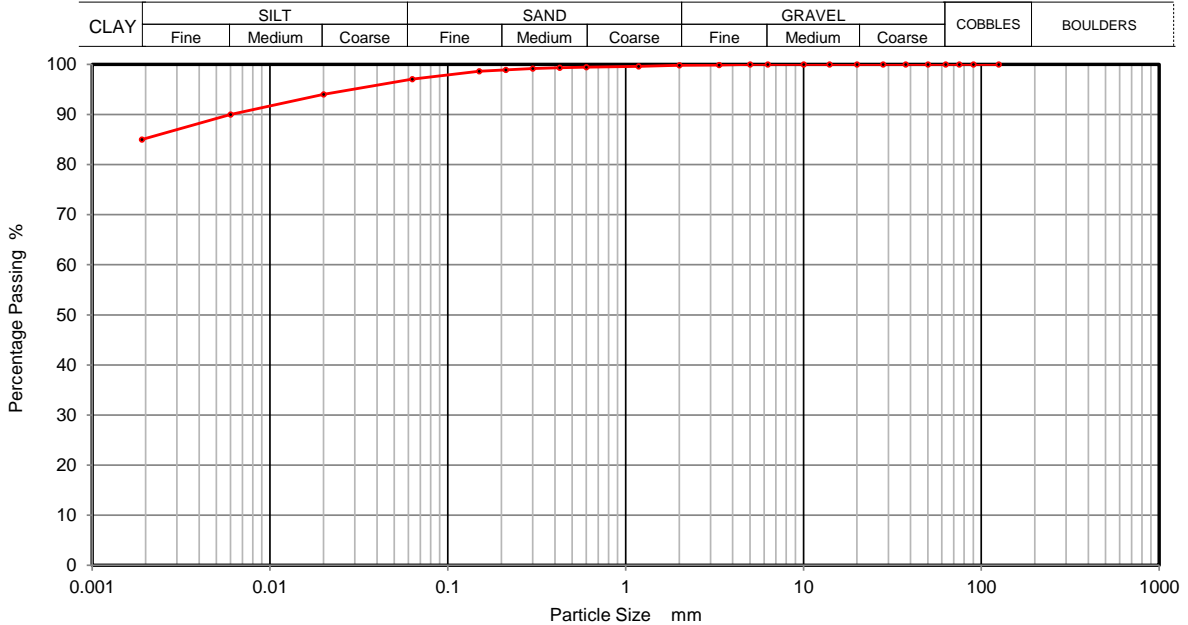
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH08
Sample No.	118
Depth Top	13.30
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	94
90	100	0.0060	90
75	100	0.0020	85
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	3
Silt	12
Clay	85

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



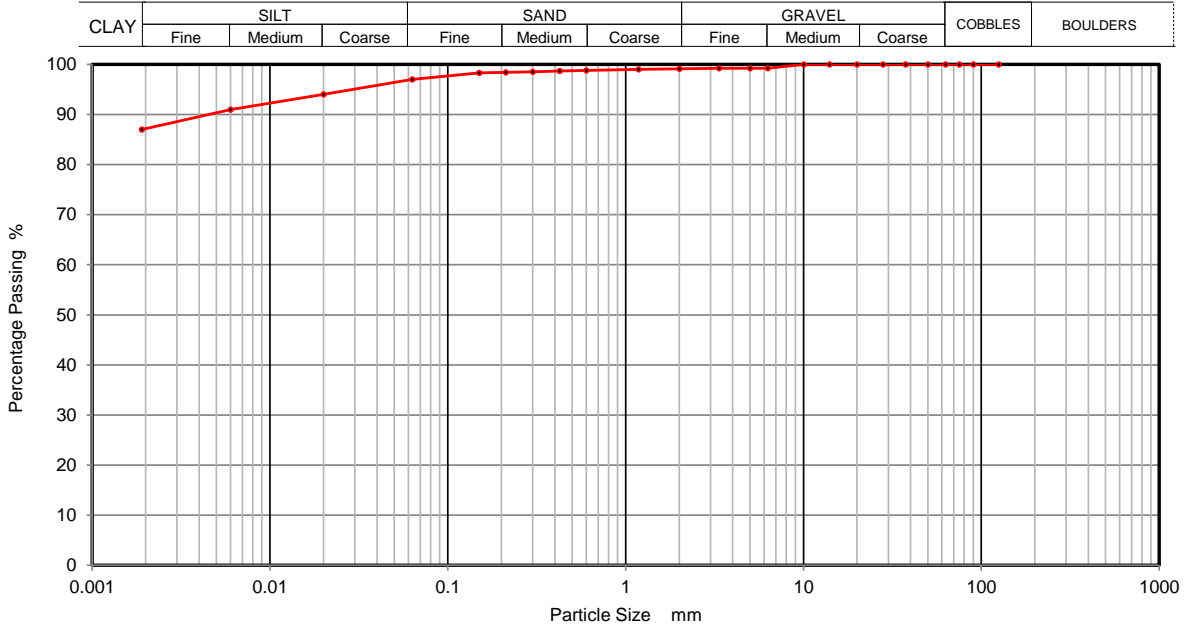
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH09
Sample No.	105
Depth Top	3.80
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	94
90	100	0.0060	91
75	100	0.0020	87
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	99		
2	99		
1.18	99		
0.6	99		
0.425	99		
0.3	99		
0.212	98		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	2
Silt	10
Clay	87

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



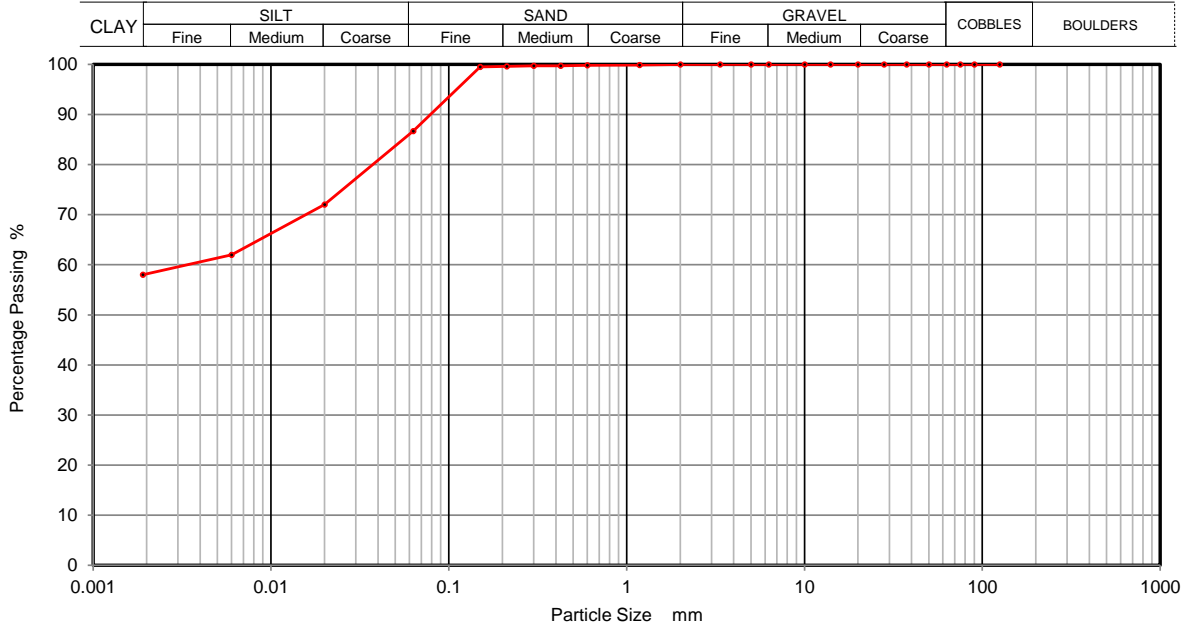
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	63955
Borehole/Pit No.	ATKRD_BH09
Sample No.	109
Depth Top	6.70
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	04/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	72
90	100	0.0060	62
75	100	0.0020	58
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	99		
0.063	87		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	13
Silt	29
Clay	58

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63955

Borehole/Pit No. ATK_BH07

Project Name Lyneham Banks

Sample No. 110

Soil Description Brown grey silty CLAY

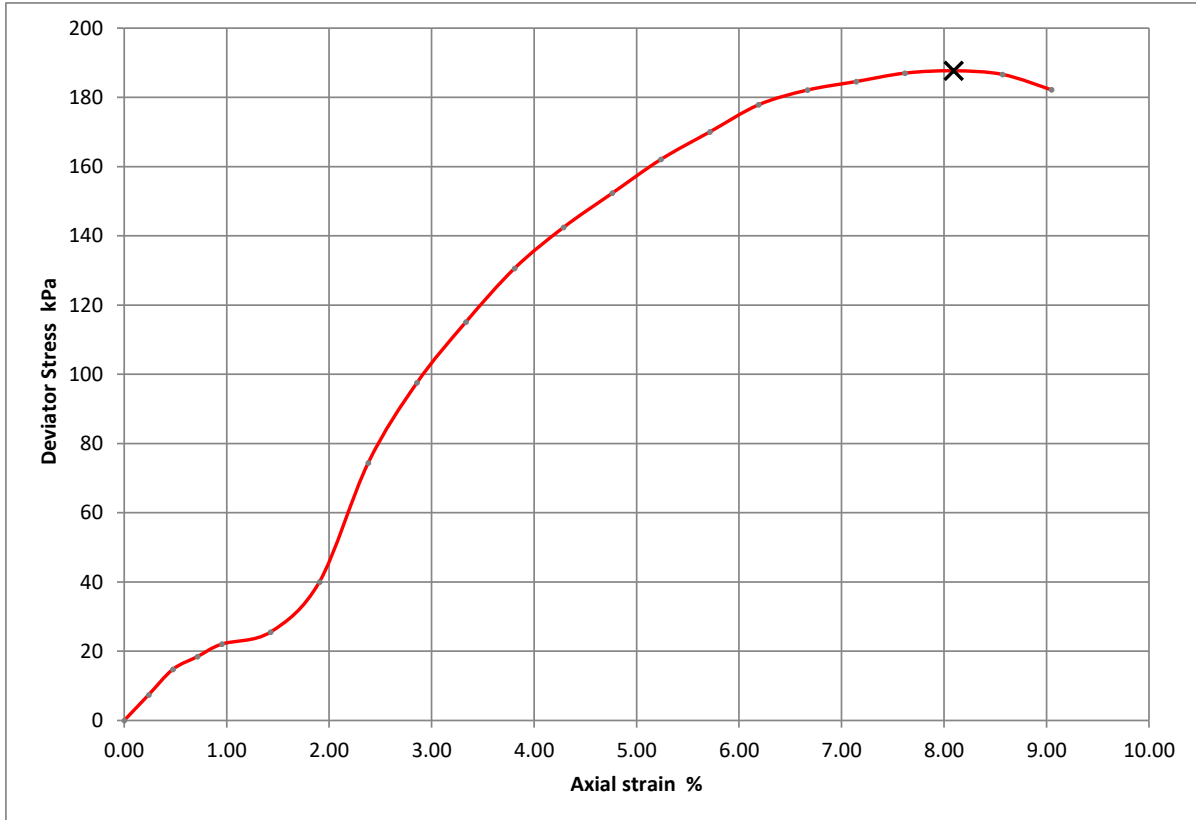
Depth Top (m) 7.40

Depth Base (m) 7.70

Date Tested 02/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	23
Bulk Density (Mg/m ³)	1.94
Dry Density (Mg/m ³)	1.57
Specimen Length (mm)	210
Specimen Diameter (mm)	105
Cell Pressure (kPa)	140
Deviator Stress (kPa)	188
Undrained Shear Strength (kPa)	94
Failure Strain (%)	8
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



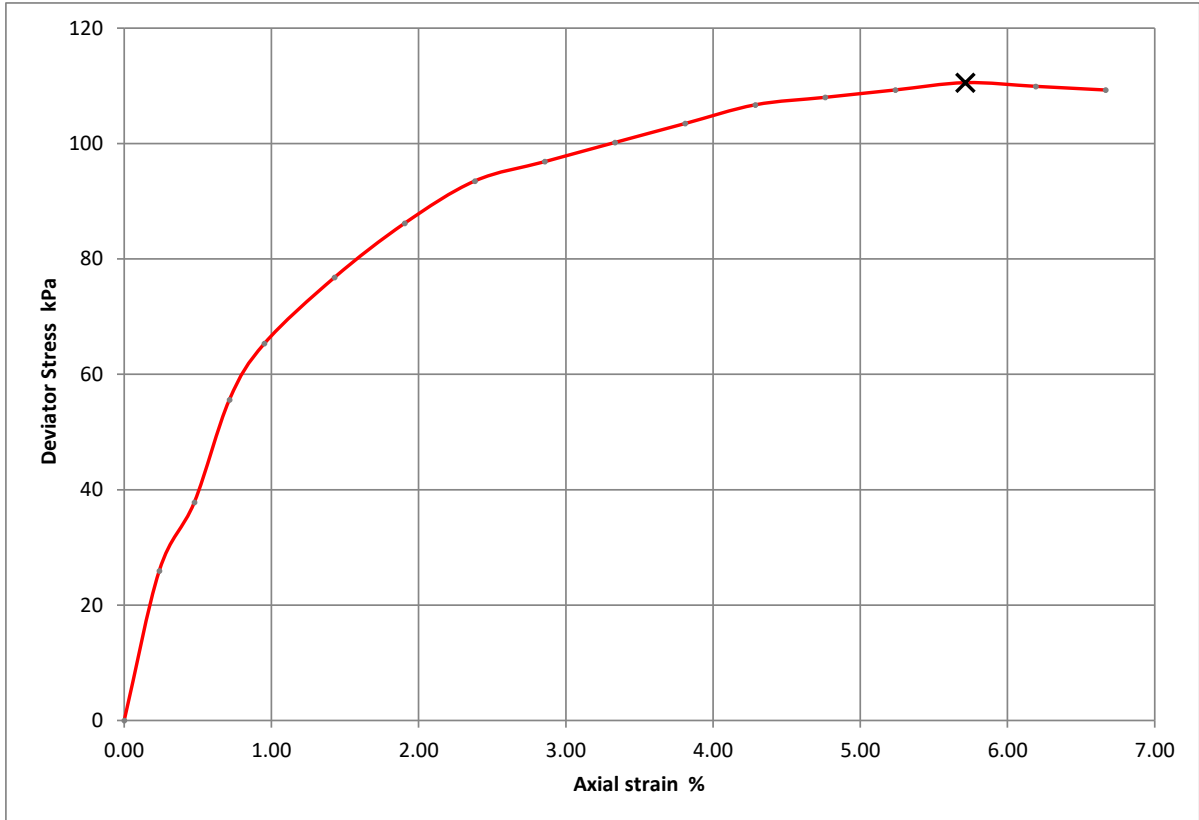
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH02
Sample No.	105
Depth Top (m)	6.10
Depth Base (m)	6.40
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown sandy silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	18
Bulk Density (Mg/m ³)	2.00
Dry Density (Mg/m ³)	1.70
Specimen Length (mm)	210
Specimen Diameter (mm)	101.4
Cell Pressure (kPa)	160
Deviator Stress (kPa)	111
Undrained Shear Strength (kPa)	55
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



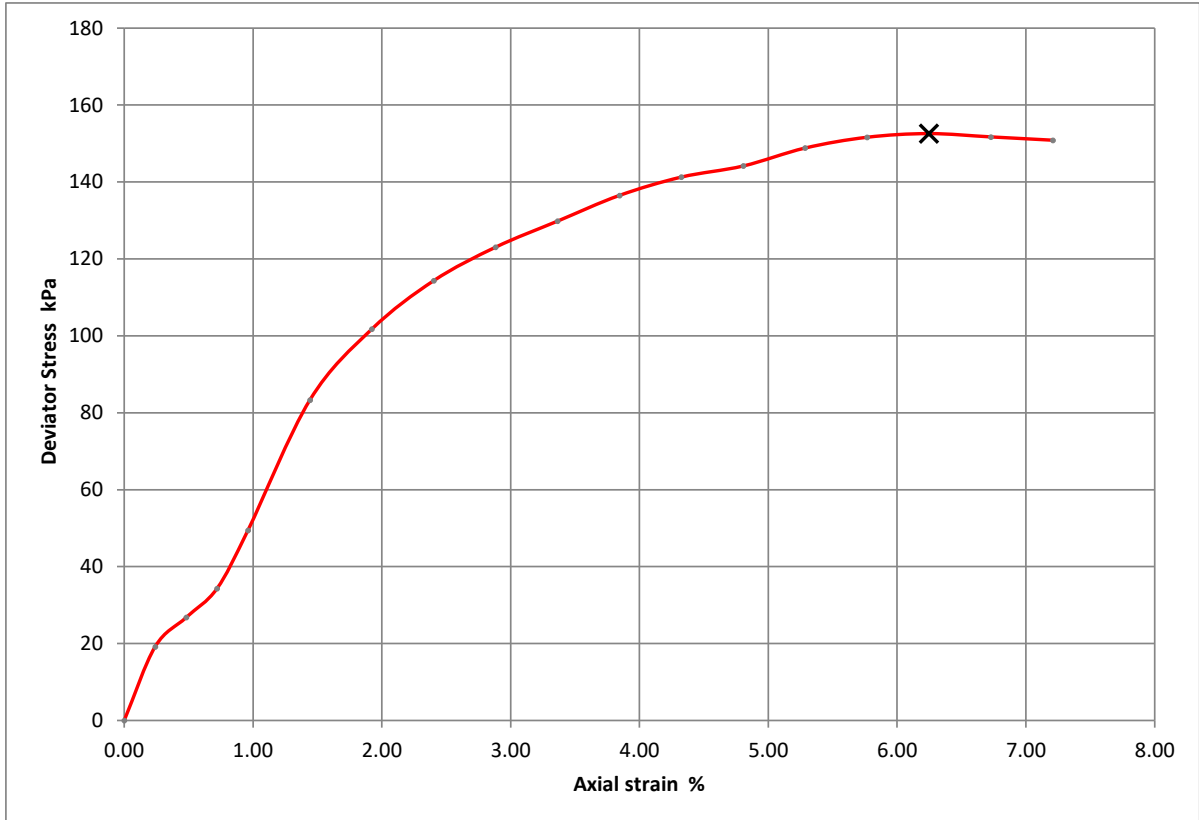
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH02
Sample No.	113
Depth Top (m)	12.20
Depth Base (m)	12.50
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	25
Bulk Density (Mg/m ³)	2.12
Dry Density (Mg/m ³)	1.69
Specimen Length (mm)	208.1
Specimen Diameter (mm)	103.4
Cell Pressure (kPa)	240
Deviator Stress (kPa)	153
Undrained Shear Strength (kPa)	76
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



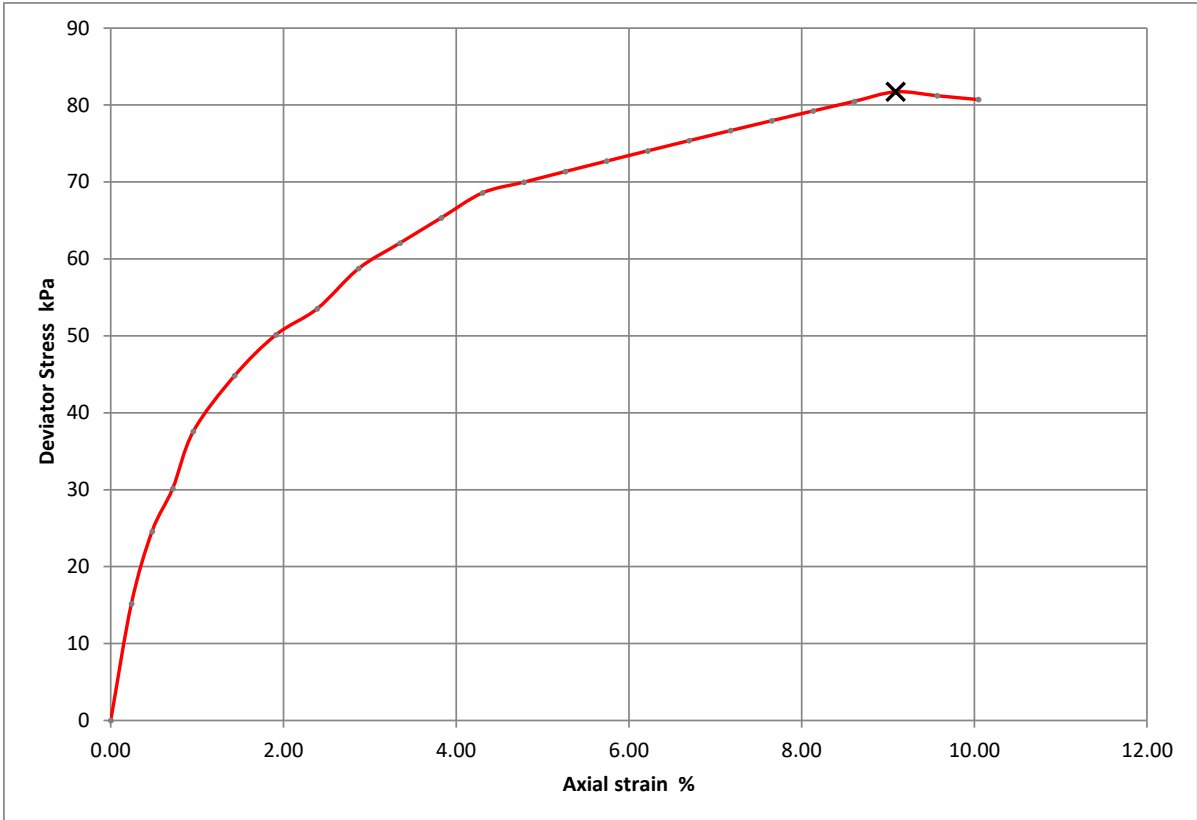
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH03
Sample No.	104
Depth Top (m)	2.60
Depth Base (m)	2.90
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown grey sandy silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	26
Bulk Density (Mg/m ³)	1.91
Dry Density (Mg/m ³)	1.52
Specimen Length (mm)	209
Specimen Diameter (mm)	104
Cell Pressure (kPa)	50
Deviator Stress (kPa)	82
Undrained Shear Strength (kPa)	41
Failure Strain (%)	9
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



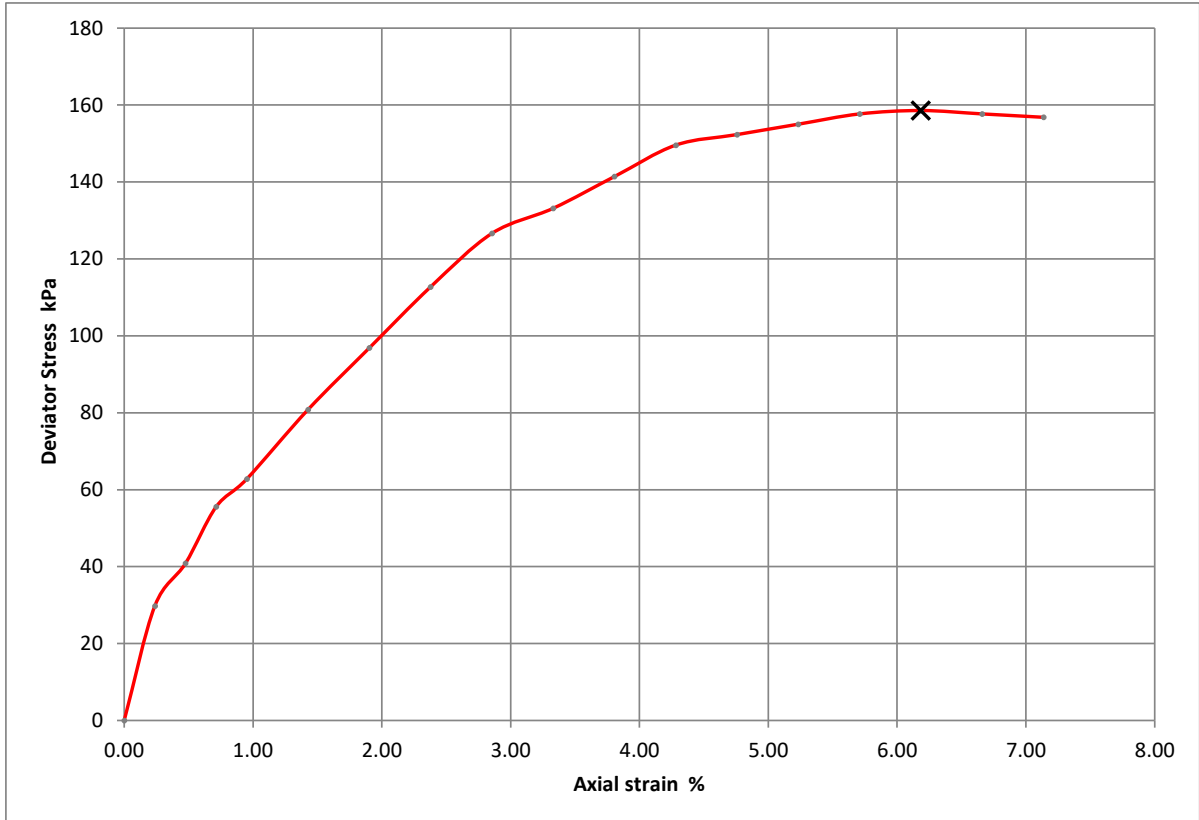
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH03
Sample No.	110
Depth Top (m)	6.20
Depth Base (m)	6.50
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown grey silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	22
Bulk Density (Mg/m ³)	1.97
Dry Density (Mg/m ³)	1.62
Specimen Length (mm)	210.2
Specimen Diameter (mm)	105
Cell Pressure (kPa)	120
Deviator Stress (kPa)	159
Undrained Shear Strength (kPa)	79
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



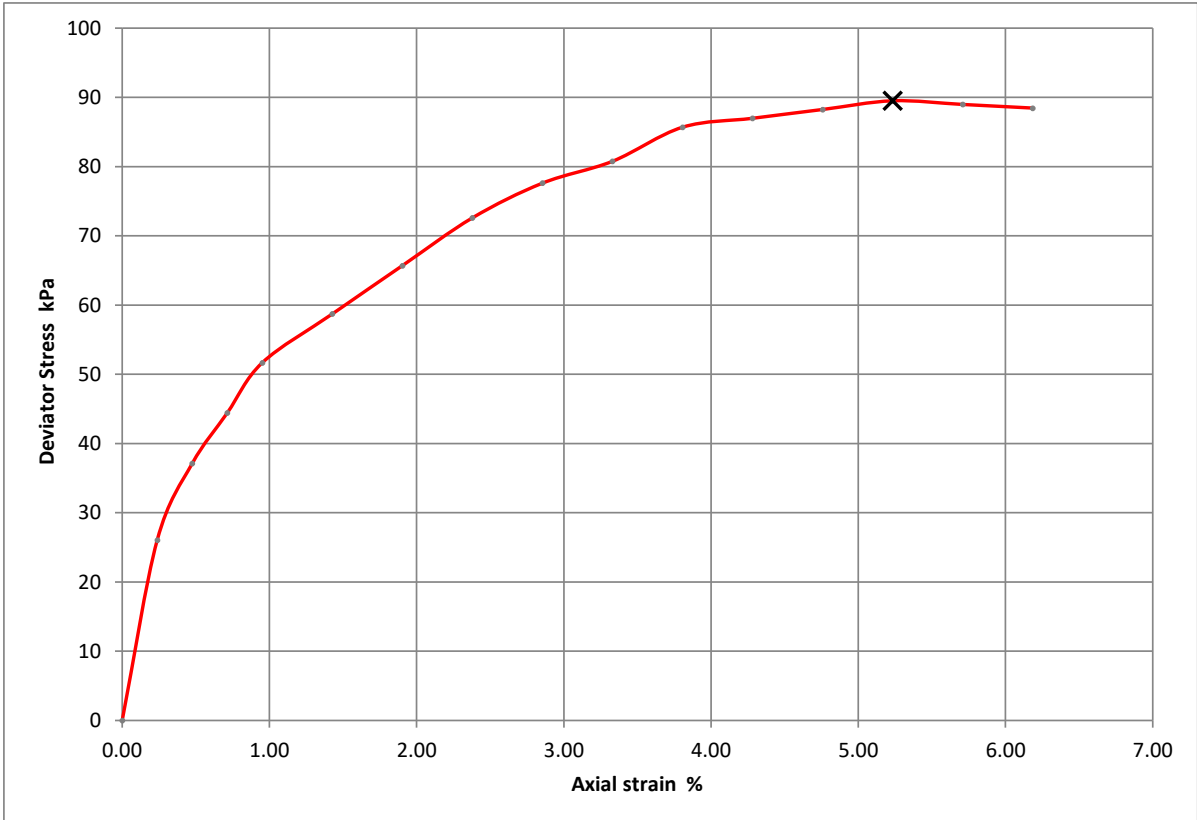
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH03
Sample No.	116
Depth Top (m)	10.90
Depth Base (m)	11.20
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey brown sandy silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	23
Bulk Density (Mg/m ³)	1.90
Dry Density (Mg/m ³)	1.54
Specimen Length (mm)	210.2
Specimen Diameter (mm)	105
Cell Pressure (kPa)	220
Deviator Stress (kPa)	90
Undrained Shear Strength (kPa)	45
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



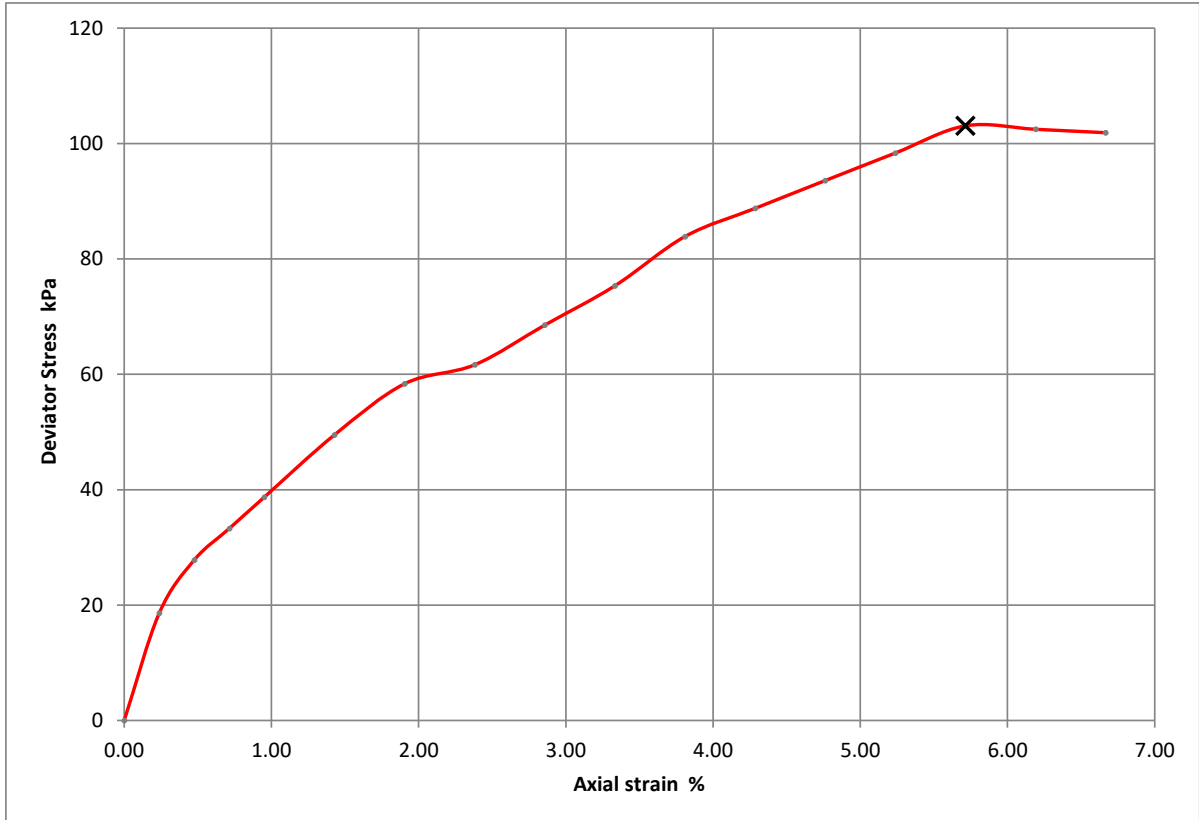
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH04
Sample No.	2
Depth Top (m)	4.40
Depth Base (m)	4.70
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown sandy silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	20
Bulk Density (Mg/m ³)	2.01
Dry Density (Mg/m ³)	1.68
Specimen Length (mm)	210
Specimen Diameter (mm)	105
Cell Pressure (kPa)	80
Deviator Stress (kPa)	103
Undrained Shear Strength (kPa)	52
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



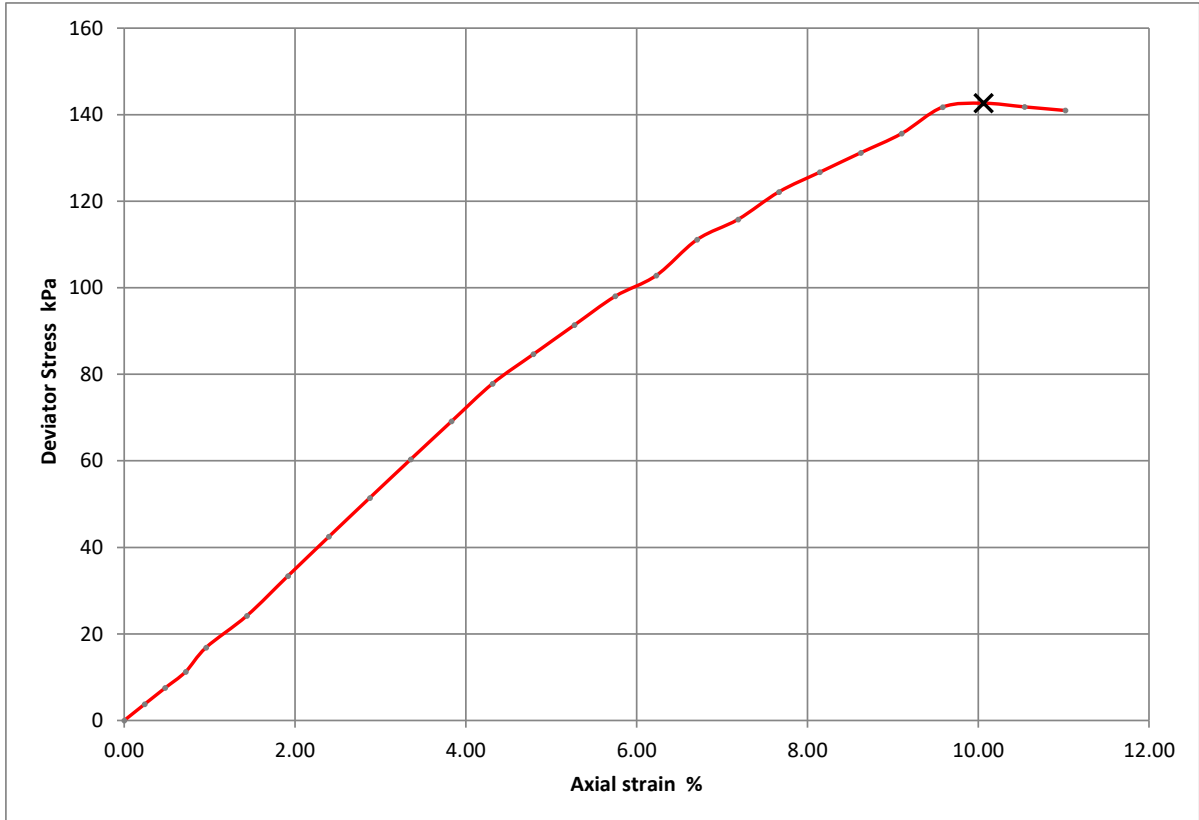
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH04
Sample No.	11
Depth Top (m)	5.70
Depth Base (m)	6.15
Sample Type	UT
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown grey silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	23
Bulk Density (Mg/m ³)	2.02
Dry Density (Mg/m ³)	1.64
Specimen Length (mm)	208.7
Specimen Diameter (mm)	103.9
Cell Pressure (kPa)	100
Deviator Stress (kPa)	143
Undrained Shear Strength (kPa)	71
Failure Strain (%)	10
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



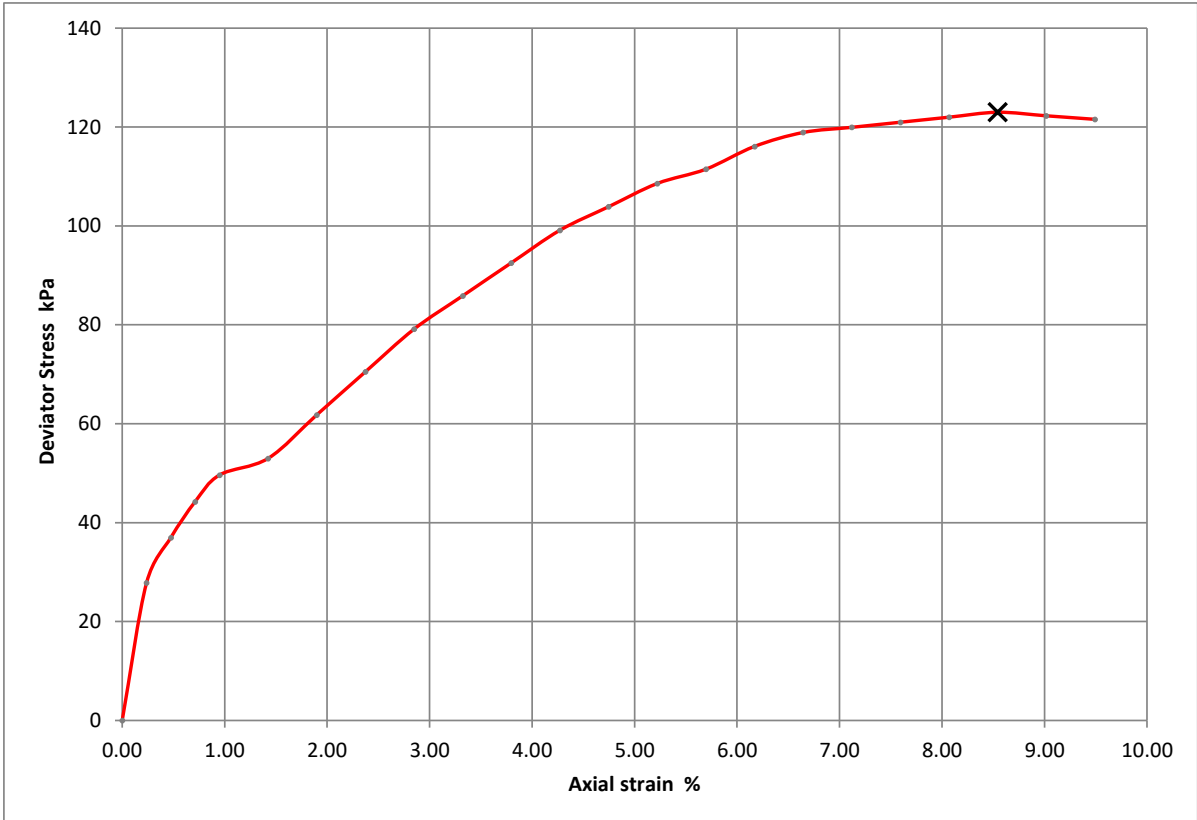
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH04
Sample No.	104
Depth Top (m)	8.50
Depth Base (m)	8.80
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown grey sandy silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	12
Bulk Density (Mg/m ³)	1.98
Dry Density (Mg/m ³)	1.76
Specimen Length (mm)	210.7
Specimen Diameter (mm)	105.2
Cell Pressure (kPa)	160
Deviator Stress (kPa)	123
Undrained Shear Strength (kPa)	61
Failure Strain (%)	9
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63955

Borehole/Pit No. ATK_BH07

Project Name Lyneham Banks

Sample No. 105

Soil Description Brown gravelly sandy silty CLAY

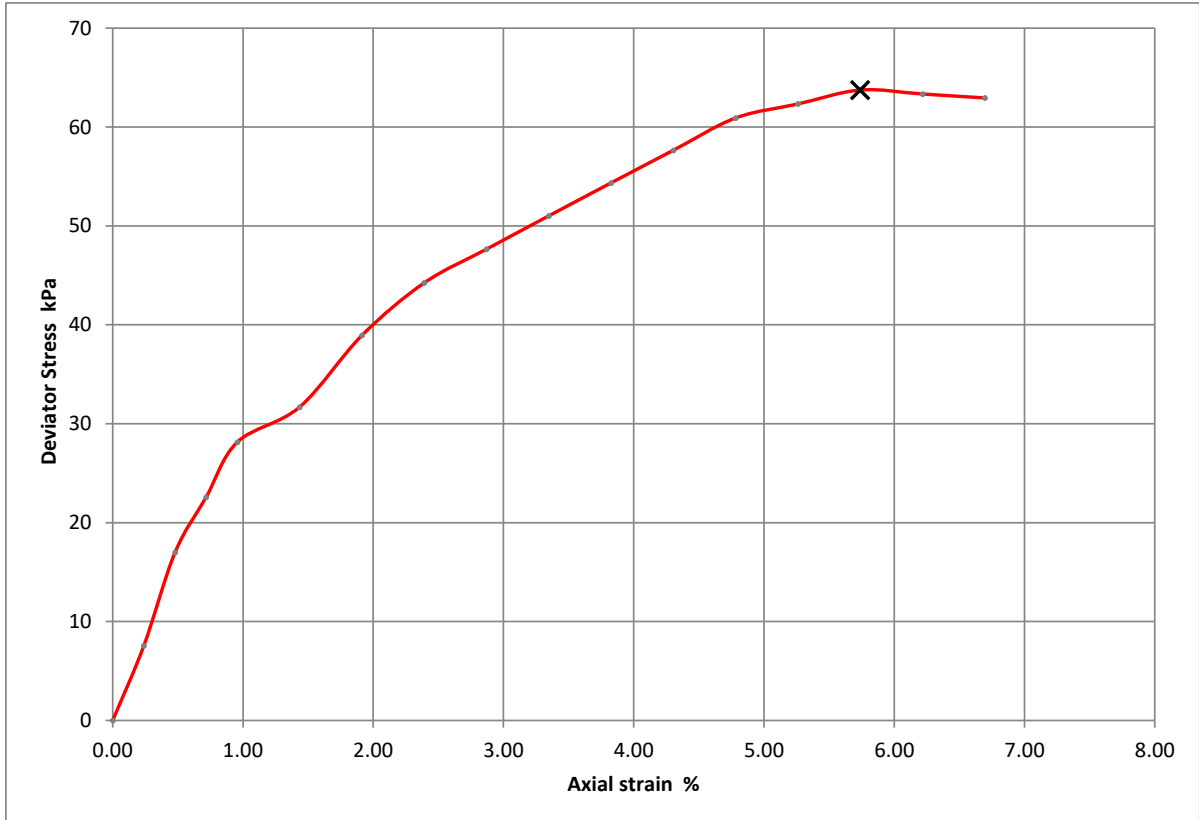
Depth Top (m) 4.40

Depth Base (m) 4.70

Date Tested 02/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	29
Bulk Density (Mg/m ³)	1.90
Dry Density (Mg/m ³)	1.47
Specimen Length (mm)	209.1
Specimen Diameter (mm)	104
Cell Pressure (kPa)	80
Deviator Stress (kPa)	64
Undrained Shear Strength (kPa)	32
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 63955

Borehole/Pit No. ATK_BH07

Project Name Lyneham Banks

Sample No. 119

Soil Description Grey silty CLAY

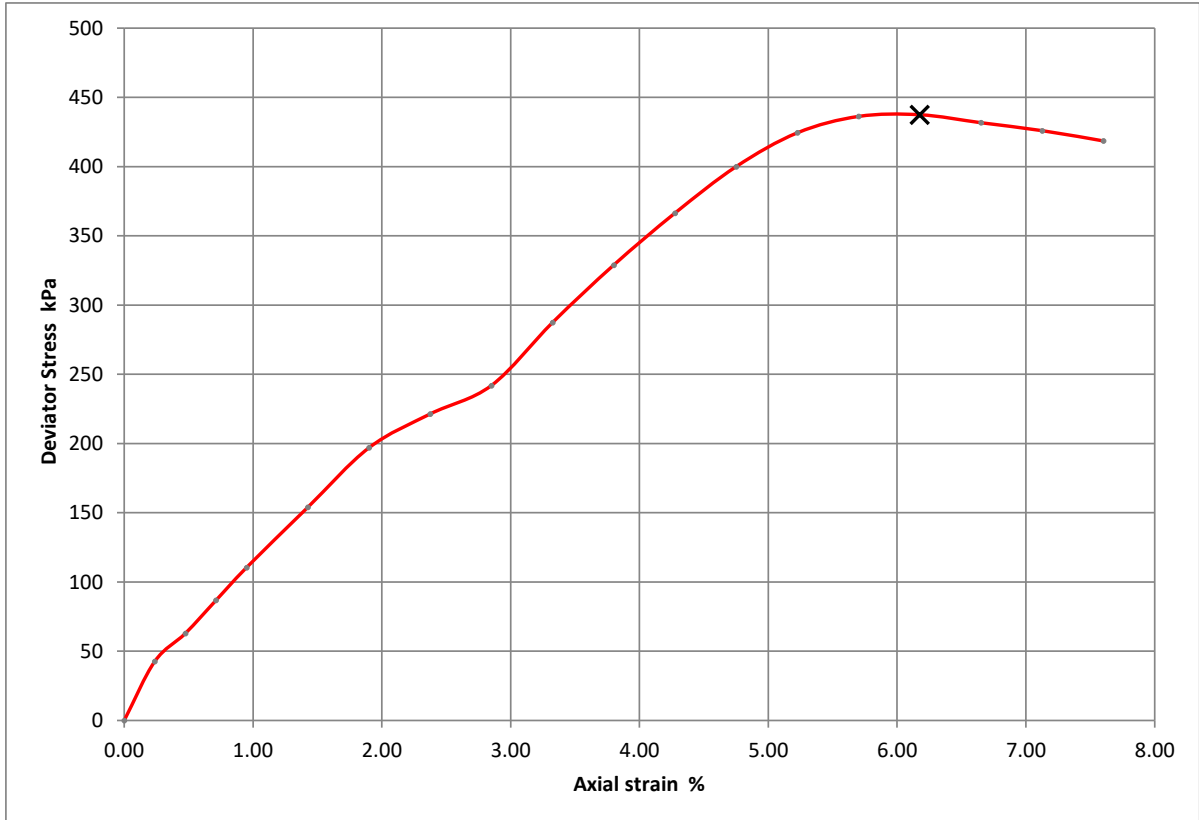
Depth Top (m) 12.70

Depth Base (m) 13.00

Date Tested 02/02/2023

Sample Type CS

Operator [REDACTED]



Moisture Content (%)	22
Bulk Density (Mg/m ³)	2.02
Dry Density (Mg/m ³)	1.65
Specimen Length (mm)	210.5
Specimen Diameter (mm)	105.2
Cell Pressure (kPa)	240
Deviator Stress (kPa)	437
Undrained Shear Strength (kPa)	219
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



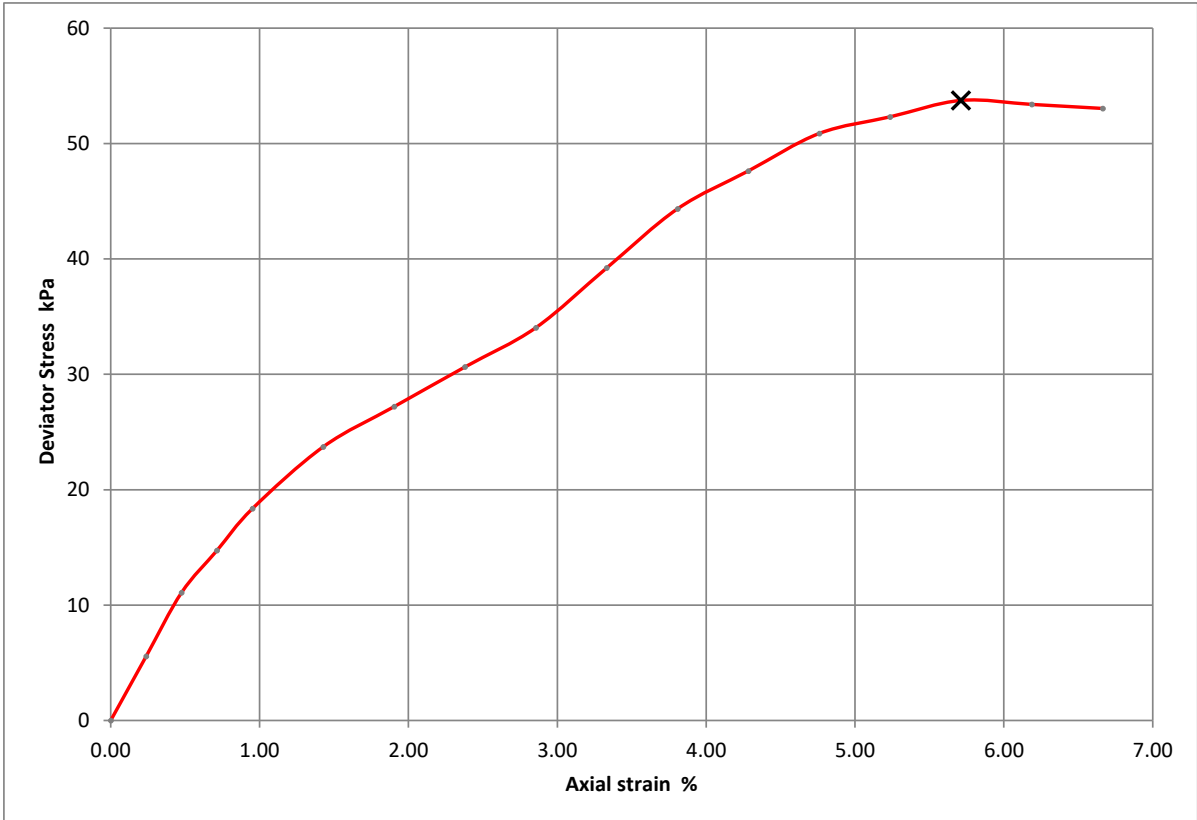
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH08
Sample No.	
Depth Top (m)	5.00
Depth Base (m)	
Sample Type	UT
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown sandy silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	29
Bulk Density (Mg/m ³)	1.90
Dry Density (Mg/m ³)	1.48
Specimen Length (mm)	210.1
Specimen Diameter (mm)	105
Cell Pressure (kPa)	100
Deviator Stress (kPa)	54
Undrained Shear Strength (kPa)	27
Failure Strain (%)	6
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



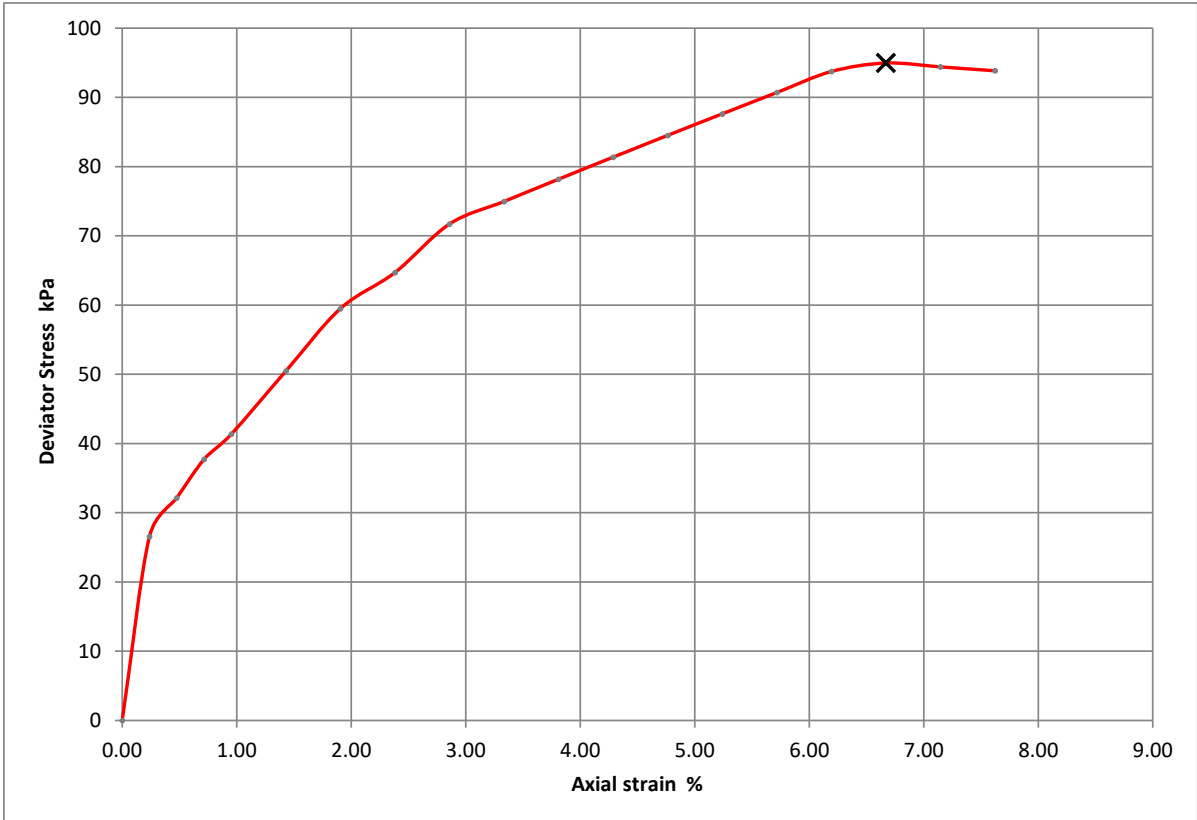
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH08
Sample No.	112
Depth Top (m)	8.40
Depth Base (m)	8.60
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown sandy silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	29
Bulk Density (Mg/m ³)	1.87
Dry Density (Mg/m ³)	1.45
Specimen Length (mm)	209.9
Specimen Diameter (mm)	104
Cell Pressure (kPa)	160
Deviator Stress (kPa)	95
Undrained Shear Strength (kPa)	47
Failure Strain (%)	7
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



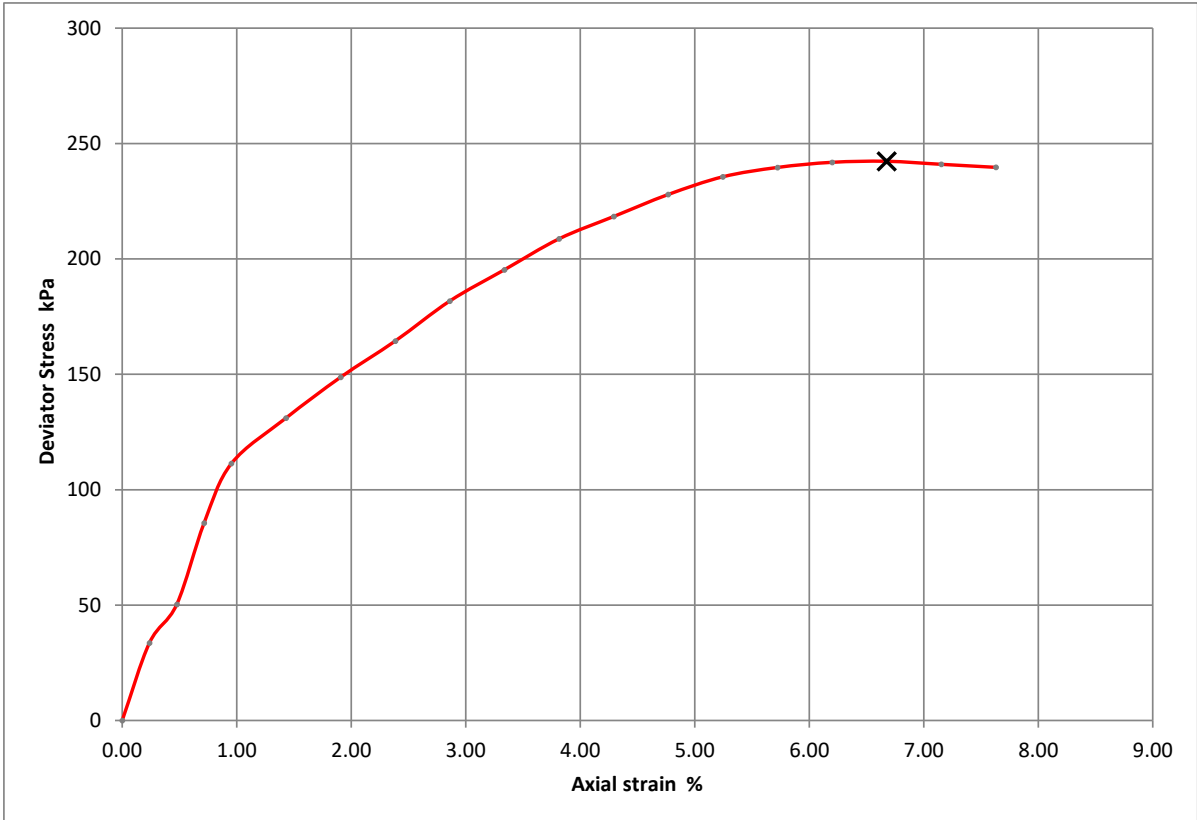
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH08
Sample No.	119
Depth Top (m)	13.50
Depth Base (m)	13.80
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	21
Bulk Density (Mg/m ³)	1.98
Dry Density (Mg/m ³)	1.64
Specimen Length (mm)	209.7
Specimen Diameter (mm)	104.8
Cell Pressure (kPa)	260
Deviator Stress (kPa)	242
Undrained Shear Strength (kPa)	121
Failure Strain (%)	7
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



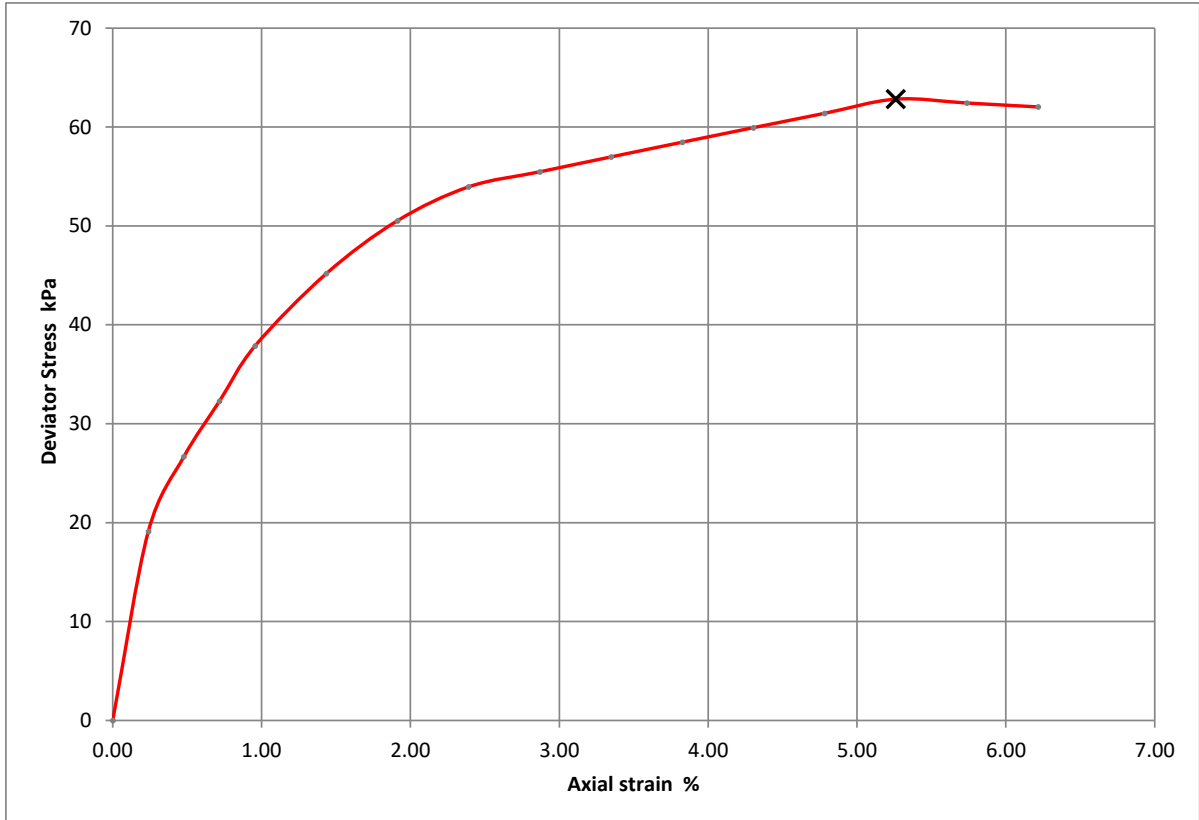
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	63955
Borehole/Pit No.	ATKRD_BH09
Sample No.	104
Depth Top (m)	3.50
Depth Base (m)	3.80
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	02/02/2023



Moisture Content (%)	31
Bulk Density (Mg/m ³)	1.69
Dry Density (Mg/m ³)	1.30
Specimen Length (mm)	209.1
Specimen Diameter (mm)	103.6
Cell Pressure (kPa)	70
Deviator Stress (kPa)	63
Undrained Shear Strength (kPa)	31
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



2788



**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

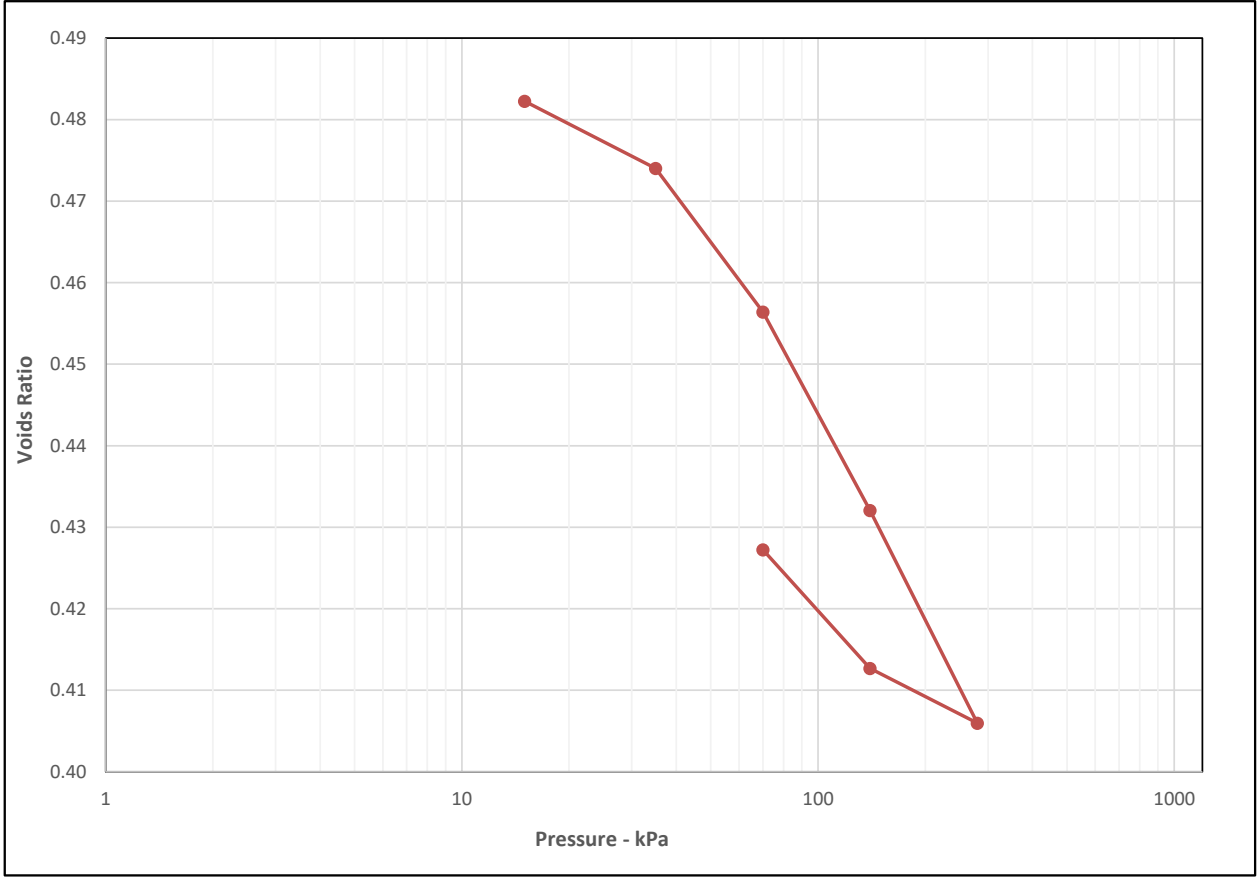
Contract Number

63955

Borehole/Trialpit No.

ATKRD_BH02

Project Name	Lyneham Banks	Sample No.	108
Soil Description	Grey silty CLAY	Depth Top (m)	7.70
		Depth Base (m)	8.00
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	03/02/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	20	0	-	15	SWELL	SWELL			
Bulk Density (Mg/m3)	2.15	15	-	35	0.28	7.2			
Dry Density (Mg/m3)	1.79	35	-	70	0.34	8.8			
Voids Ratio	0.4822	70	-	140	0.24	5.2			
Degree of saturation	110.4	140	-	280	0.13	1.8			
Height (mm)	20.17	280	-	140	0.034	6.3			
Diameter (mm)	74.97	140	-	70	0.15	1.5			
Particle Density (Mg/m3)	2.65		-						

Operator
[Redacted]





**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

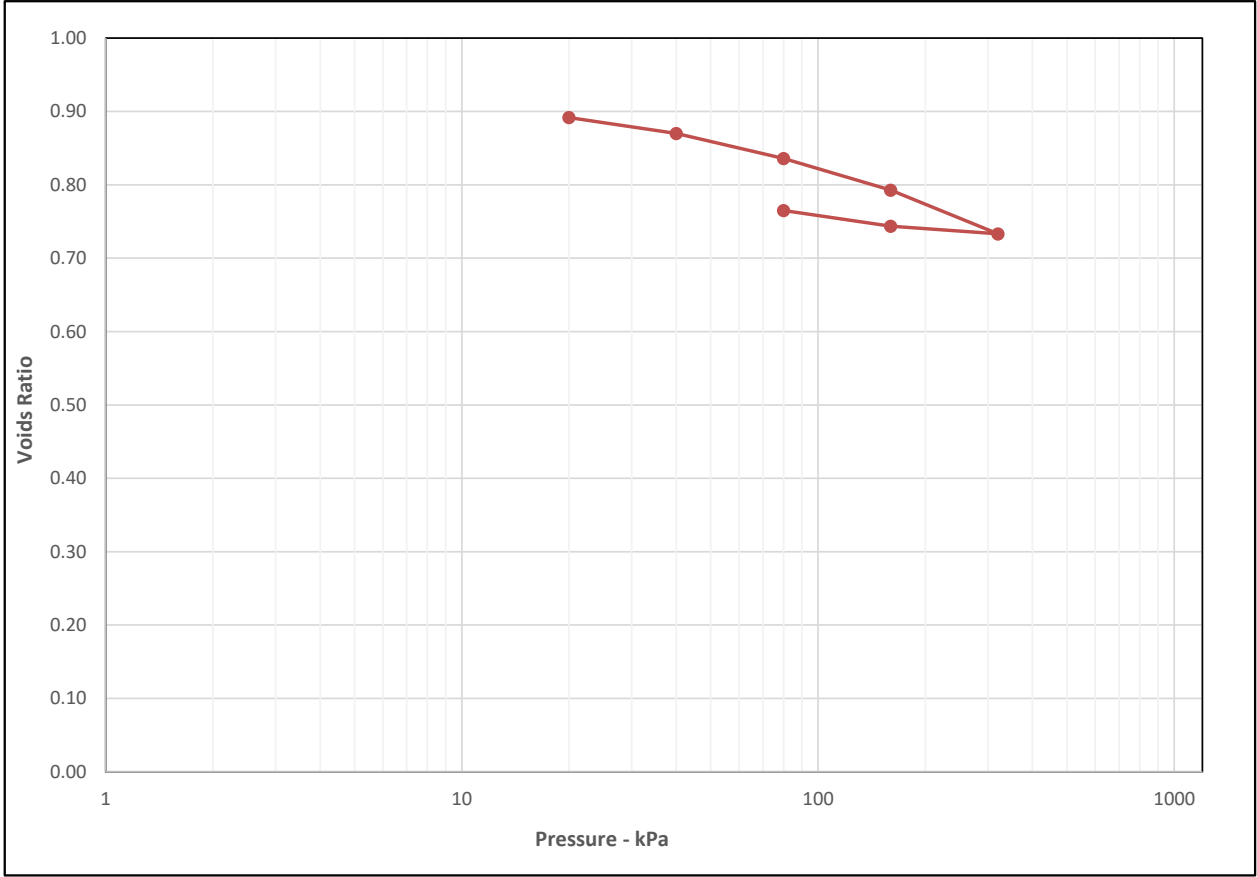
Contract Number

63955

Borehole/Trialpit No.

ATKRD_BH03

Project Name	Lyneham Banks	Sample No.	106
Soil Description	Brown grey silty CLAY	Depth Top (m)	4.70
		Depth Base (m)	5.00
Lab Temperature	20°C	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	03/02/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	34	0	-	20	SWELL	SWELL			
Bulk Density (Mg/m3)	1.88	20	-	40	0.57	11			
Dry Density (Mg/m3)	1.40	40	-	80	0.46	25			
Voids Ratio	0.8941	80	-	160	0.29	5.8			
Degree of saturation	101.4	160	-	320	0.21	0.30			
Height (mm)	20.03	320	-	160	0.038	0.77			
Diameter (mm)	74.91	160	-	80	0.15	0.14			
Particle Density (Mg/m3)	2.65		-						

Operator
[Redacted]





**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

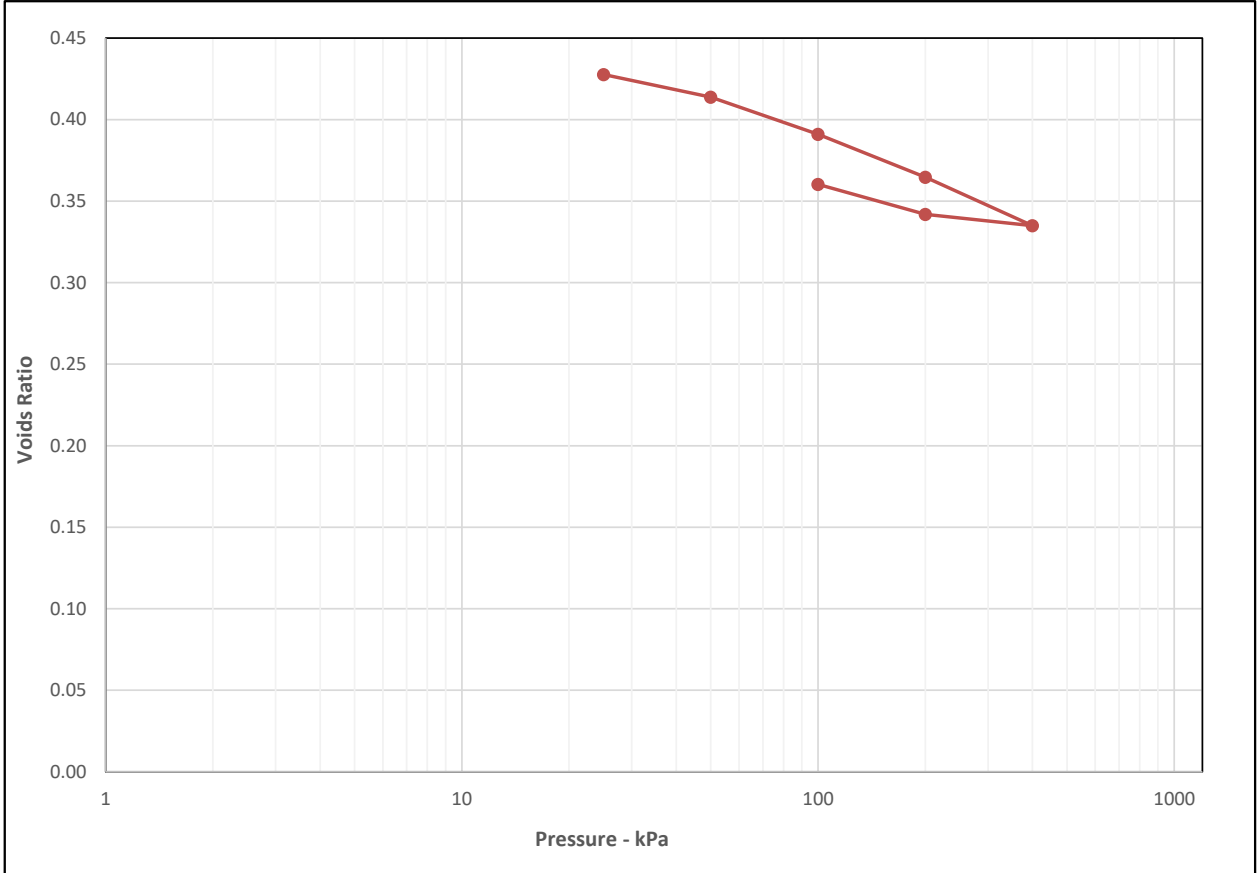
Contract Number

63955

Borehole/Trialpit No.

ATKRD_BH04

Project Name	Lyneham Banks	Sample No.	3
Soil Description	Grey silty CLAY	Depth Top (m)	5.40
		Depth Base (m)	5.60
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	03/02/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	20	0	- 25	0.72	28		-		
Bulk Density (Mg/m3)	2.19	25	- 50	0.39	3.7		-		
Dry Density (Mg/m3)	1.82	50	- 100	0.32	4.6		-		
Voids Ratio	0.4539	100	- 200	0.19	3.5		-		
Degree of saturation	118.1	200	- 400	0.11	15		-		
Height (mm)	20.12	400	- 200	0.026	21		-		
Diameter (mm)	74.98	200	- 100	0.14	0.52		-		
Particle Density (Mg/m3)	2.65		-				-		

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

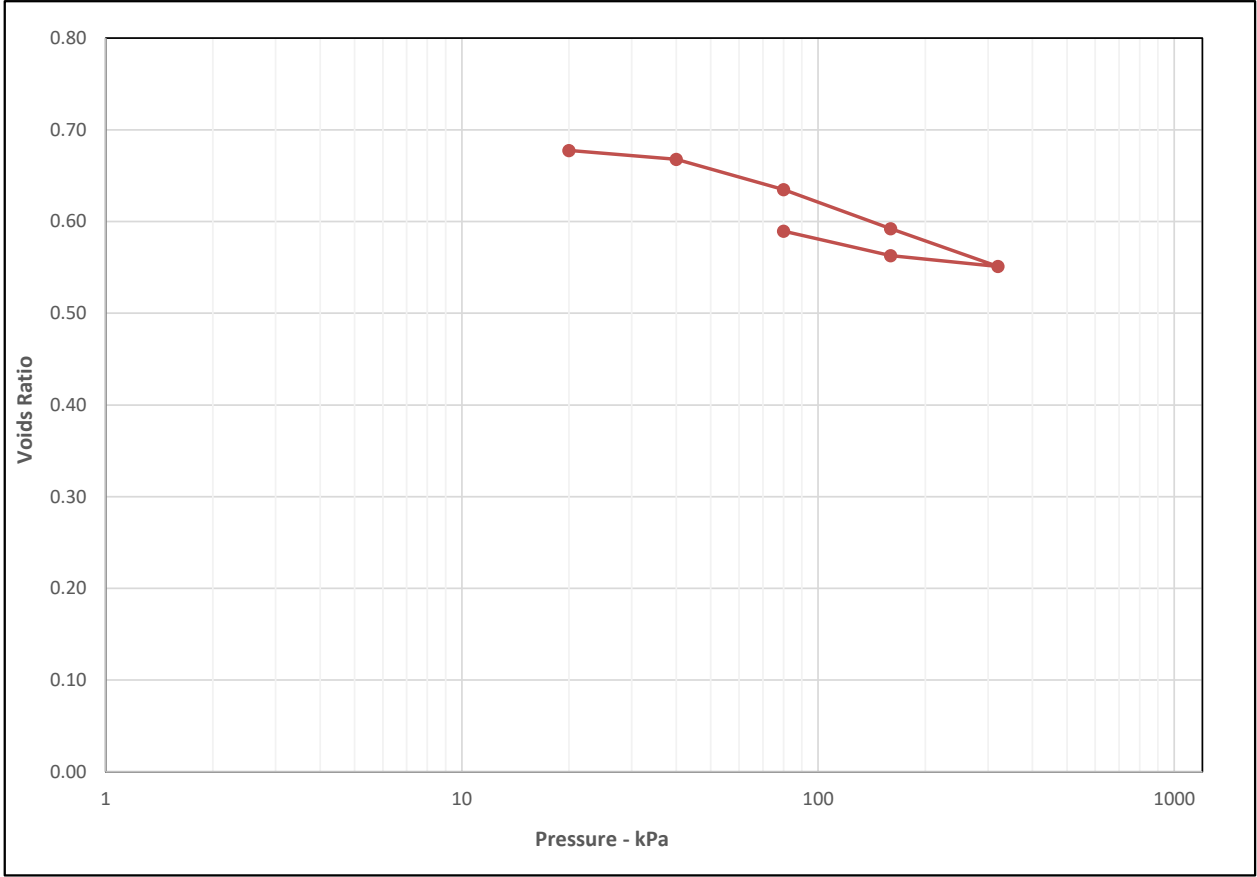
Contract Number

63955

Borehole/Trialpit No.

ATK_BH07

Project Name	Lyneham Banks	Sample No.	112
Soil Description	Grey silty CLAY	Depth Top (m)	8.50
		Depth Base (m)	8.80
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	03/02/2023		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	23	0	-	20	SWELL	SWELL		-			
Bulk Density (Mg/m3)	1.97	20	-	40	0.29	2.7		-			
Dry Density (Mg/m3)	1.60	40	-	80	0.50	5.7		-			
Voids Ratio	0.6609	80	-	160	0.33	7.6		-			
Degree of saturation	93.8	160	-	320	0.16	3.6		-			
Height (mm)	19.52	320	-	160	0.048	0.48		-			
Diameter (mm)	74.8	160	-	80	0.21	0.38		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
[Redacted]



2788



**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number

63955

Borehole/Trialpit No.

ATKRD_BH08

Project Name

Lyneham Banks

Sample No.

104

Soil Description

Grey silty CLAY

Depth Top (m)

2.30

Depth Base (m)

2.60

Lab Temperature

20°C

Sample Location

Top

Remarks

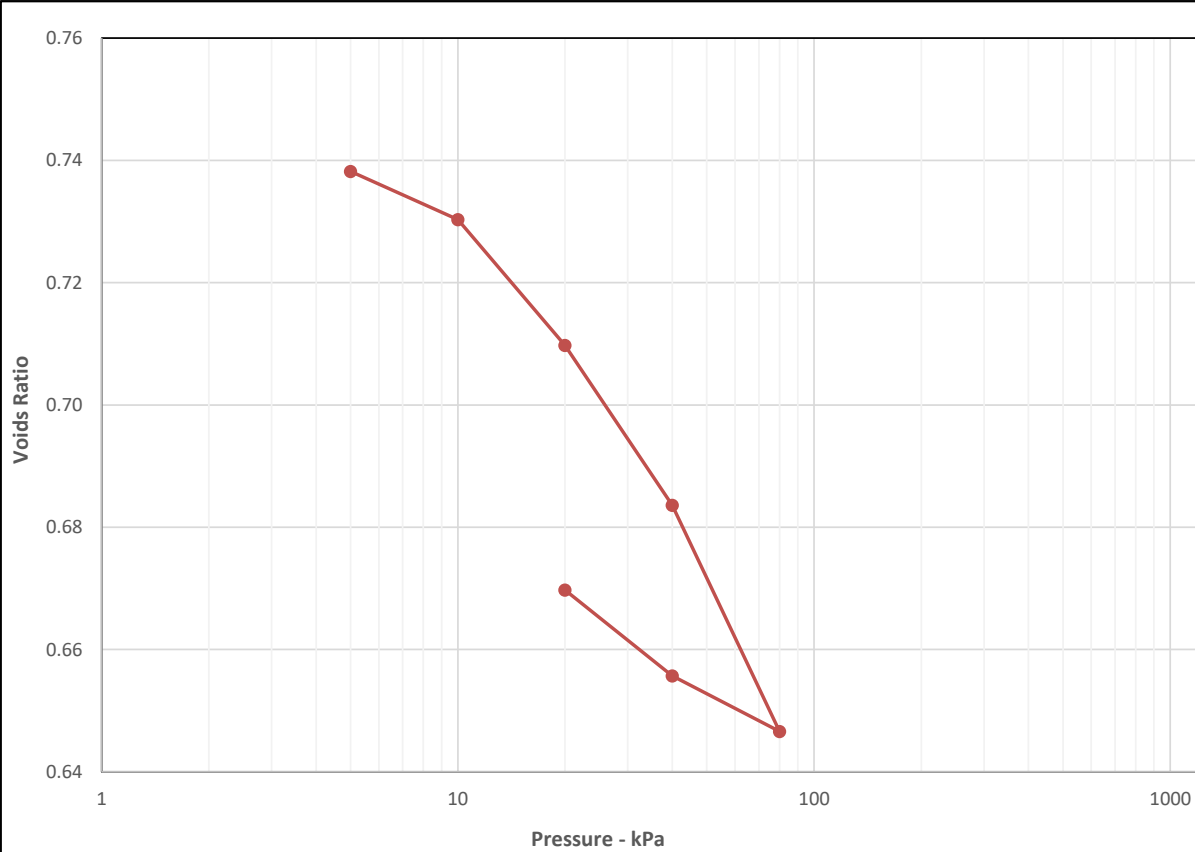
Cv Calculated Using T90
Particle Density Assumed Unless Stated Otherwise

Sample Type

CS

Date Tested

03/02/2023



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	30	0	-	5	SWELL	SWELL		-		
Bulk Density (Mg/m3)	1.99	5	-	10	0.90	6.5		-		
Dry Density (Mg/m3)	1.52	10	-	20	1.2	5.9		-		
Voids Ratio	0.7381	20	-	40	0.77	0.46		-		
Degree of saturation	108.8	40	-	80	0.55	1.3		-		
Height (mm)	19.93	80	-	40	0.14	1.7		-		
Diameter (mm)	74.96	40	-	20	0.42	0.43		-		
Particle Density (Mg/m3)	2.65		-					-		

Operator
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2788



**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

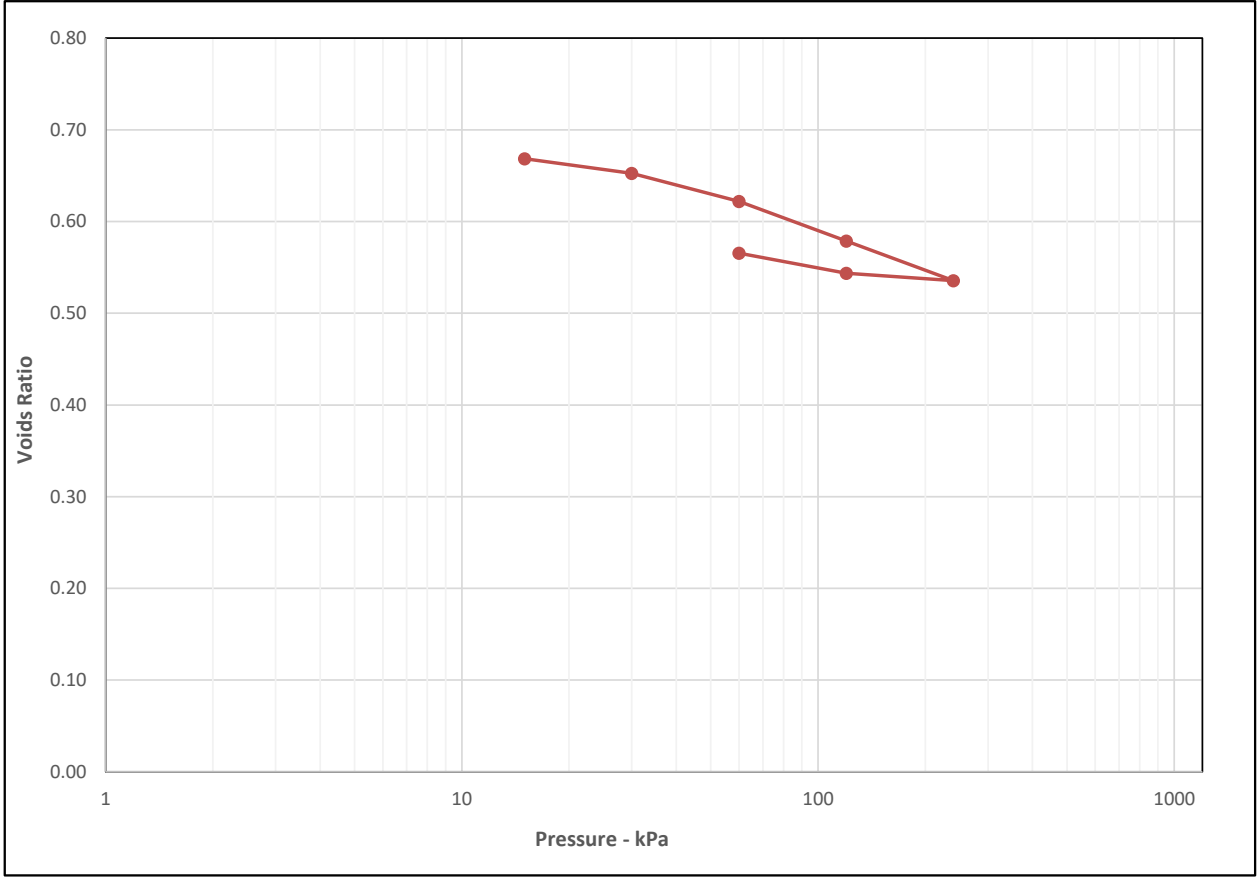
Contract Number

63955

Borehole/Trialpit No.

ATKRD_BH08

Project Name	Lyneham Banks	Sample No.	
Soil Description	Grey silty CLAY	Depth Top (m)	7.00
		Depth Base (m)	
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	03/02/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	29	0	-	15	0.55	9.7	-		
Bulk Density (Mg/m3)	2.03	15	-	30	0.64	19	-		
Dry Density (Mg/m3)	1.58	30	-	60	0.62	4.8	-		
Voids Ratio	0.6825	60	-	120	0.44	0.60	-		
Degree of saturation	111.4	120	-	240	0.23	1.4	-		
Height (mm)	20.07	240	-	120	0.043	0.75	-		
Diameter (mm)	74.98	120	-	60	0.24	0.54	-		
Particle Density (Mg/m3)	2.65		-				-		

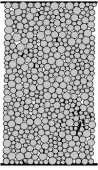
Operator
██████████



Effective Stress Triaxial Compression

Consolidated Undrained


Summary Report

Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">4.2-4.65</td> </tr> <tr> <td>Description</td> <td colspan="3">Brown, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.2</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.4</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3633.4</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.97</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	4.2-4.65			Description	Brown, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.2	Initial Sample Diameter	D_0	(mm)	105.4	Initial Sample Weight	W_0	(gr)	3633.4	Initial Bulk Density	ρ_0	(Mg/m ³)	1.97	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	4.2-4.65																																
Description	Brown, CLAY																																
Type	UT																																
Initial Sample Length	L_0	(mm)	211.2																														
Initial Sample Diameter	D_0	(mm)	105.4																														
Initial Sample Weight	W_0	(gr)	3633.4																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.97																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	390	430	510	
Initial Back Pressure	U_{bi}	(kPa)	350	350	350	
Strain Rate	m_s	(mm/min)	0.01644	0.00700	0.04000	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	ω_i	(%)	23			
Initial Dry Density	ρ_{di}	(Mg/m ³)	1.61			
Initial Voids Ratio	e_i	.	0.647			
Initial Degree of Saturation	S_i	(%)	92			
B Value	B	.	1.00			

Final Conditions						
Final Moisture	ω_f	(%)	23			
Final Dry Density	ρ_{df}	(Mg/m ³)	1.73			
Final Voids Ratio	e_f	.	0.532			
Final Degree of Saturation	S_f	(%)	100.0			
			Stage 1	2	3	4
Failure Criteria	.		Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)	3.06	6.20	10.08	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)	55.0	94.1	149.5	
Minor Stress At Failure	σ_3'	(kPa)	27.2	60.5	104.3	
Major Stress At Failure	σ_1'	(kPa)	82.2	154.6	253.8	
Principal Stress At Failure	σ_1' / σ_3'		3.025	2.554	2.433	
PwP At Failure Criteria	u_f		362.7	369.5	405.6	

Notes				 Compound
Side Drains Used During Test				
	1	2	3	
Side Drain Correction at Failure (kpa)	3.32	3.32	3.32	
Membrane Correction at Failure (kpa)	0.32	0.61	0.85	

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	06/02/2023	
	Site Reference		Borehole	ATKRD_BH03	
	Jobfile	63955	Sample	8	
	Client	SOCOTEC	Depth	4.2-4.65	
Operator	██████████	Checked	██████████	Approved	██████████



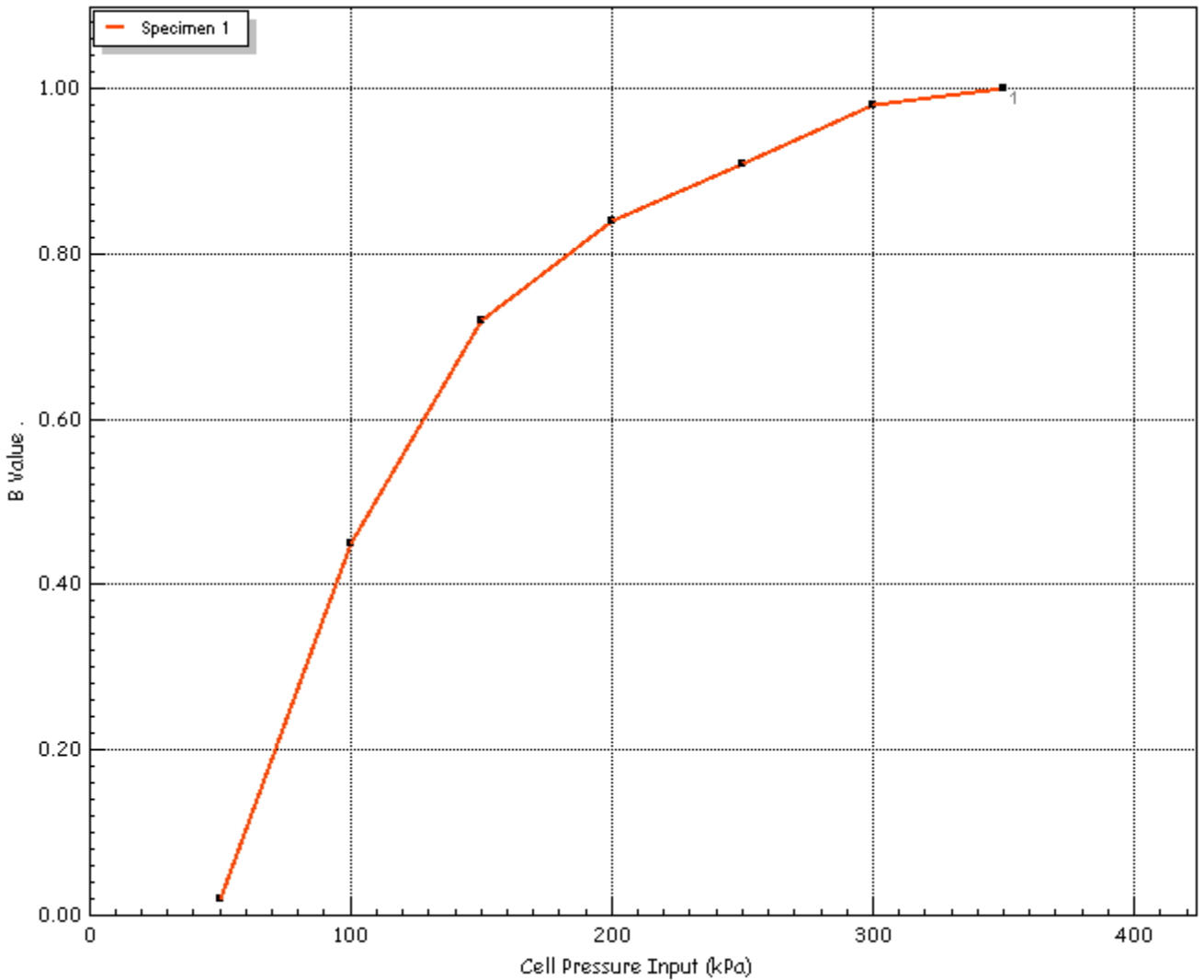
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	350
Pore Water Pressure Input	u_{pwp}	(kPa)	339
B Value	B	.	1.00



GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	06/02/2023
	Site Reference		Borehole	ATKRD_BH03
	Jobfile	63955	Sample	8
	Client	SOCOTEC	Depth	4.2-4.65
	Operator	██████████	Checked	██████████
			Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

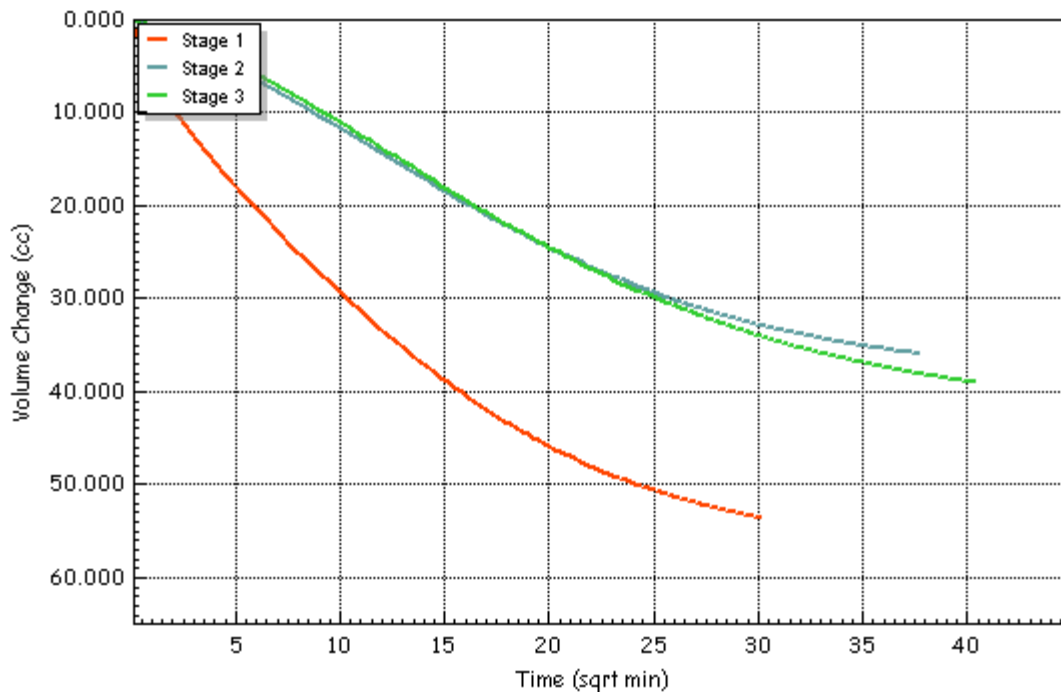
Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	390	430	510
Initial Back Pressure	u_{bi} (kPa)	350	350	350
Pore Water Pressure Input	u_{pwp} (kPa)	378	393	438
Drainage Method		Radial+One End		

Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$ (%)	2.91	1.95	2.12
Corrected Length	L_c (mm)	209.2	201.4	191.9
Corrected Area	A_c (cm ²)	85.56	87.06	89.33
Corrected Volume	V_c (cc)	1789.172	1753.207	1714.143
t100	t_{100} (min)	353.35	799.31	27.84
Consolidation	c_v (m ² /year)	0.006	0.003	0.084
Compressibility	m_v (m ² /MN)	1.0	0.45	0.24
Test Time	t_F (h:m:s)	10:36:02	23:58:45	02:00:00
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.01644	0.00700	0.07997

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLEXPRESS2019 \ Effective	Test Date	06/02/2023	
	Site Reference		Borehole	ATKRD_BH03	
	Jobfile	63955	Sample	8	
	Client	SOCOTEC	Depth	4.2-4.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

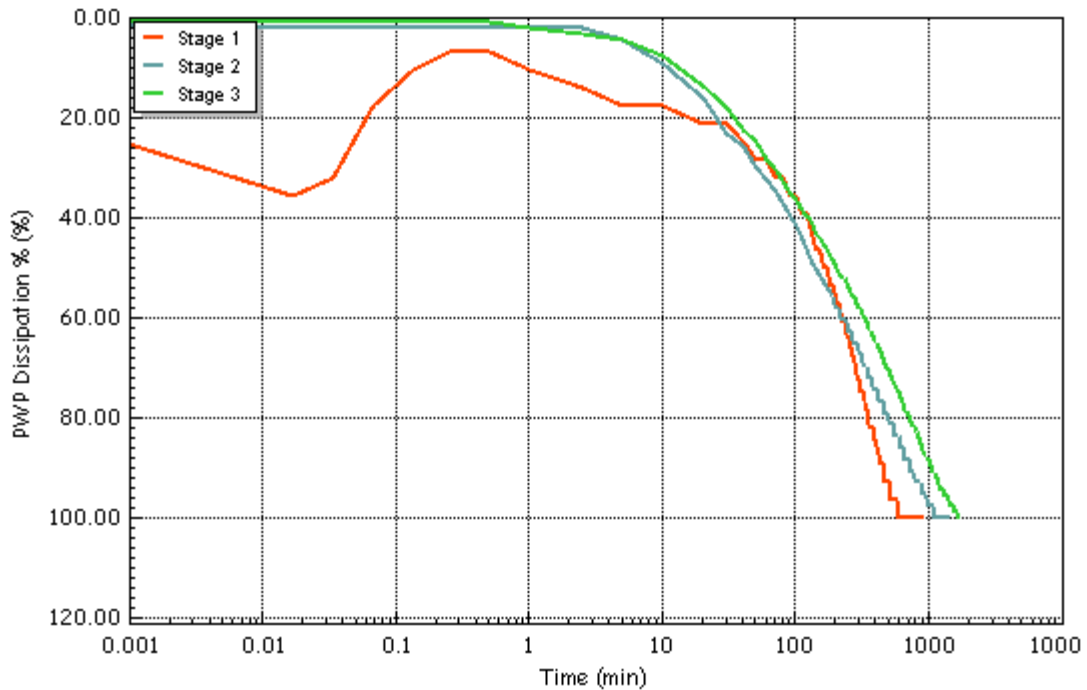
Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	390	430	510
Initial Back Pressure	u_{bi} (kPa)	350	350	350
Pore Water Pressure Input	u_{pwp} (kPa)	378	393	438
Drainage Method		Radial+One End		

Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$ (%)	2.91	1.95	2.12
Corrected Length	L_c (mm)	209.2	201.4	191.9
Corrected Area	A_c (cm ²)	85.56	87.06	89.33
Corrected Volume	V_c (cc)	1789.172	1753.207	1714.143
t100	t_{100} (min)	353.35	799.31	27.84
Consolidation	c_v (m ² /year)	0.006	0.003	0.084
Compressibility	m_v (m ² /MN)	1.0	0.45	0.24
Test Time	t_F (h:m:s)	10:36:02	23:58:45	02:00:00
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.01644	0.00700	0.07997

Notes

Side Drains Used During Test



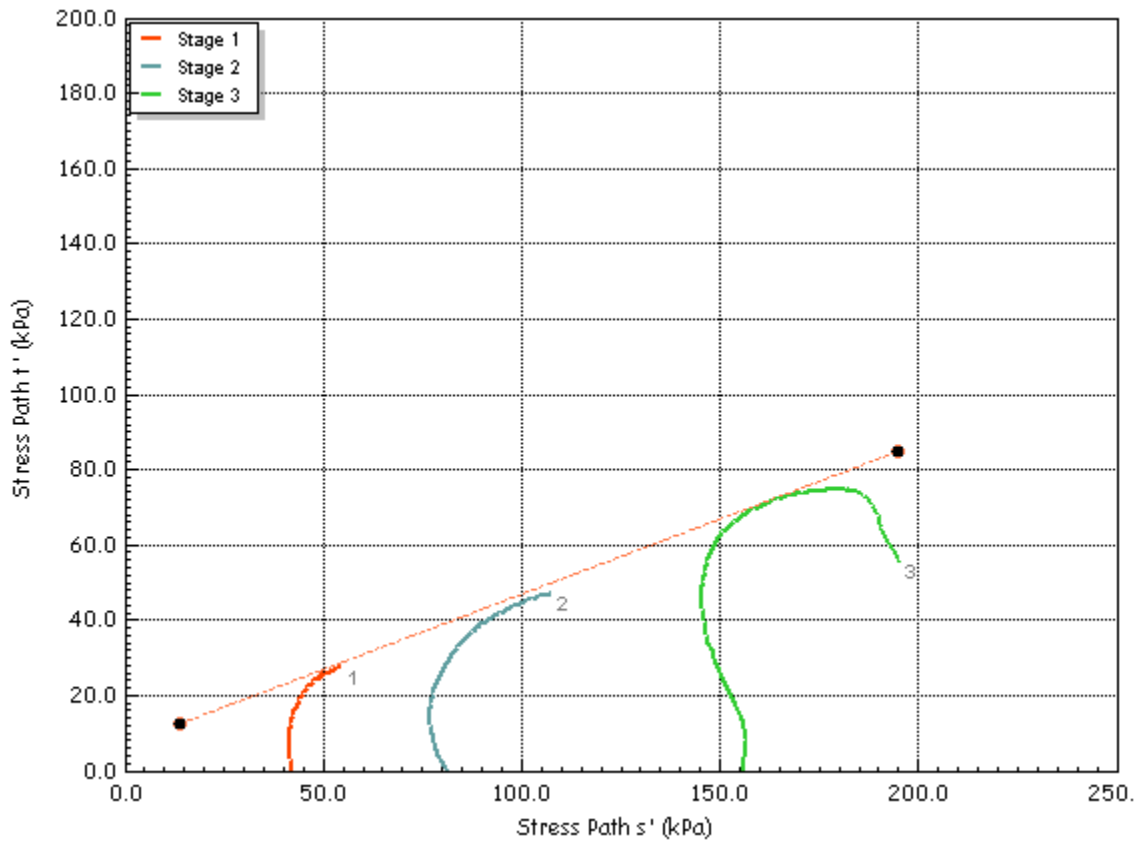
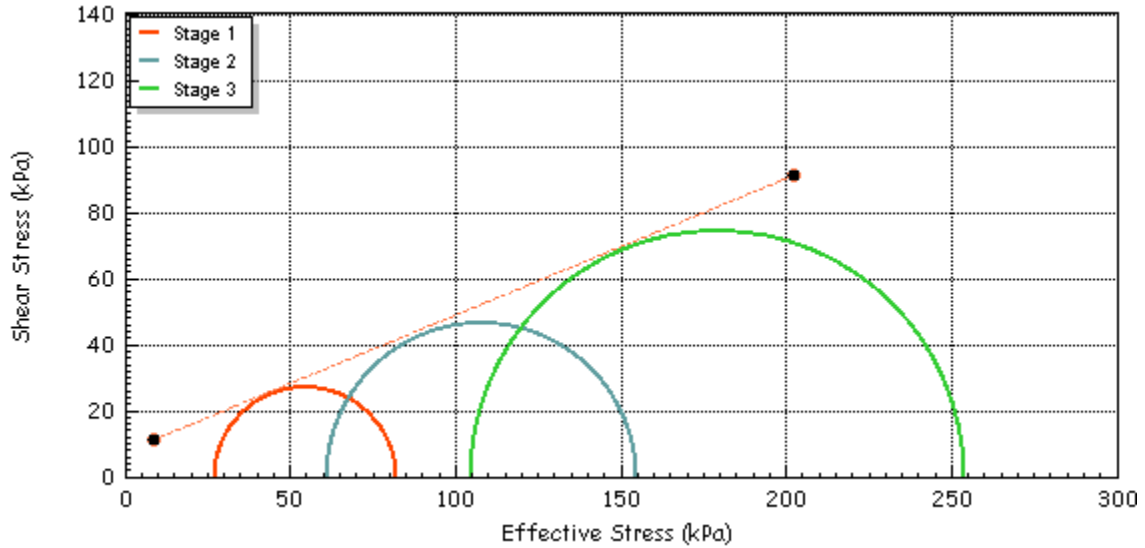
GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	06/02/2023	
	Site Reference		Borehole	ATKRD_BH03	
	Jobfile	63955	Sample	8	
	Client	SOCOTEC	Depth	4.2-4.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	7.59	Effective Cohesion c'	(kPa)	7.47
Effective Friction ϕ'	(deg)	22.5	Effective Friction ϕ'	(deg)	23.6

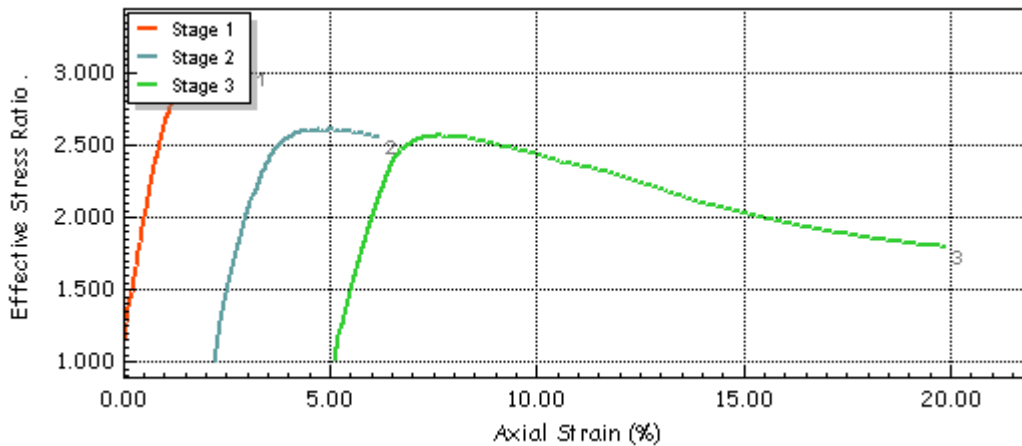
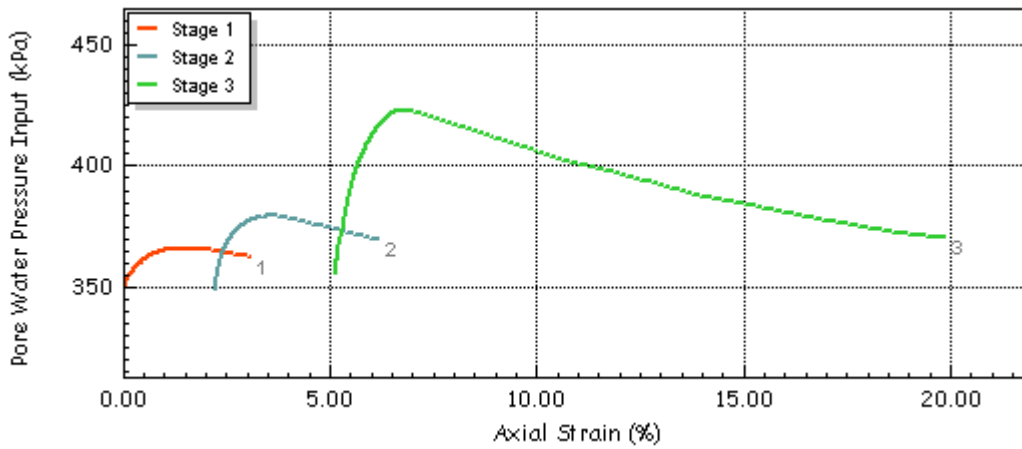
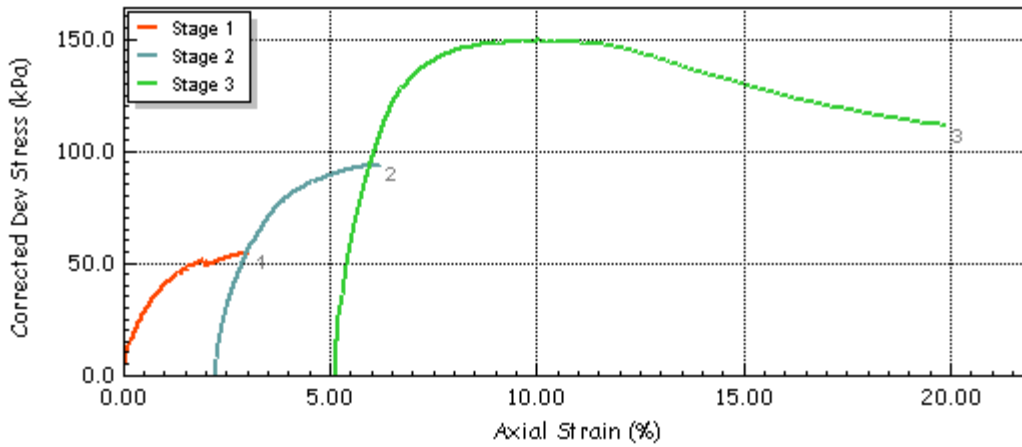



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	06/02/2023	
	Site Reference		Borehole	ATKRD_BH03	
	Jobfile	63955	Sample	8	
Client	SOCOTEC	Depth	4.2-4.65		
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

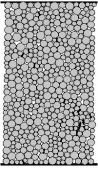


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 4	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	06/02/2023	
	Site Reference		Borehole	ATKRD_BH03	
	Jobfile	63955	Sample	8	
	Client	SOCOTEC	Depth	4.2-4.65	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report


Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">3.7-4.15</td> </tr> <tr> <td>Description</td> <td colspan="3">Brown, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>210.9</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.2</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3808.1</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>2.08</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	3.7-4.15			Description	Brown, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	210.9	Initial Sample Diameter	D_0	(mm)	105.2	Initial Sample Weight	W_0	(gr)	3808.1	Initial Bulk Density	ρ_0	(Mg/m ³)	2.08	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	3.7-4.15																																
Description	Brown, CLAY																																
Type	UT																																
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Initial Sample Diameter	D_0	(mm)	105.2																														
Initial Sample Weight	W_0	(gr)	3808.1																														
Initial Bulk Density	ρ_0	(Mg/m ³)	2.08																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														


Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	335	370	3	
Initial Back Pressure	U_{bi}	(kPa)	300	300	0	
Strain Rate	m_s	(mm/min)	0.00095	0.00128	0.00552	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	w_i	(%)	21			
Initial Dry Density	ρ_{di}	(Mg/m ³)	1.72			
Initial Voids Ratio	e_i	.	0.542			
Initial Degree of Saturation	S_i	(%)	100			
B Value	B	.	0.98			

Final Conditions			Stage 1	2	3	4
Final Moisture	w_f	(%)	19			
Final Dry Density	ρ_{df}	(Mg/m ³)	1.77			
Final Voids Ratio	e_f	.	0.500			
Final Degree of Saturation	S_f	(%)	99.5			
Failure Criteria	.	.	Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)	3.01	4.94	0.00	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)	48.4	86.4	0.0	
Minor Stress At Failure	σ_3'	(kPa)	20.8	46.2	0.0	
Major Stress At Failure	σ_1'	(kPa)	369.3	432.6	0.0	
Principal Stress At Failure	σ_1' / σ_3'		17.749	9.361	0.000	
PwP At Failure Criteria	u_f		311.6	324.1	0.0	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.33	3.33	0.00
Membrane Correction at Failure (kpa)	0.31	0.51	0.00


 Brittle

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 16	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH04	
	Jobfile	63955	Sample	6	
	Client	SOCOTEC	Depth	3.7-4.15	
Operator	*	Checked	*	Approved	*


 2788

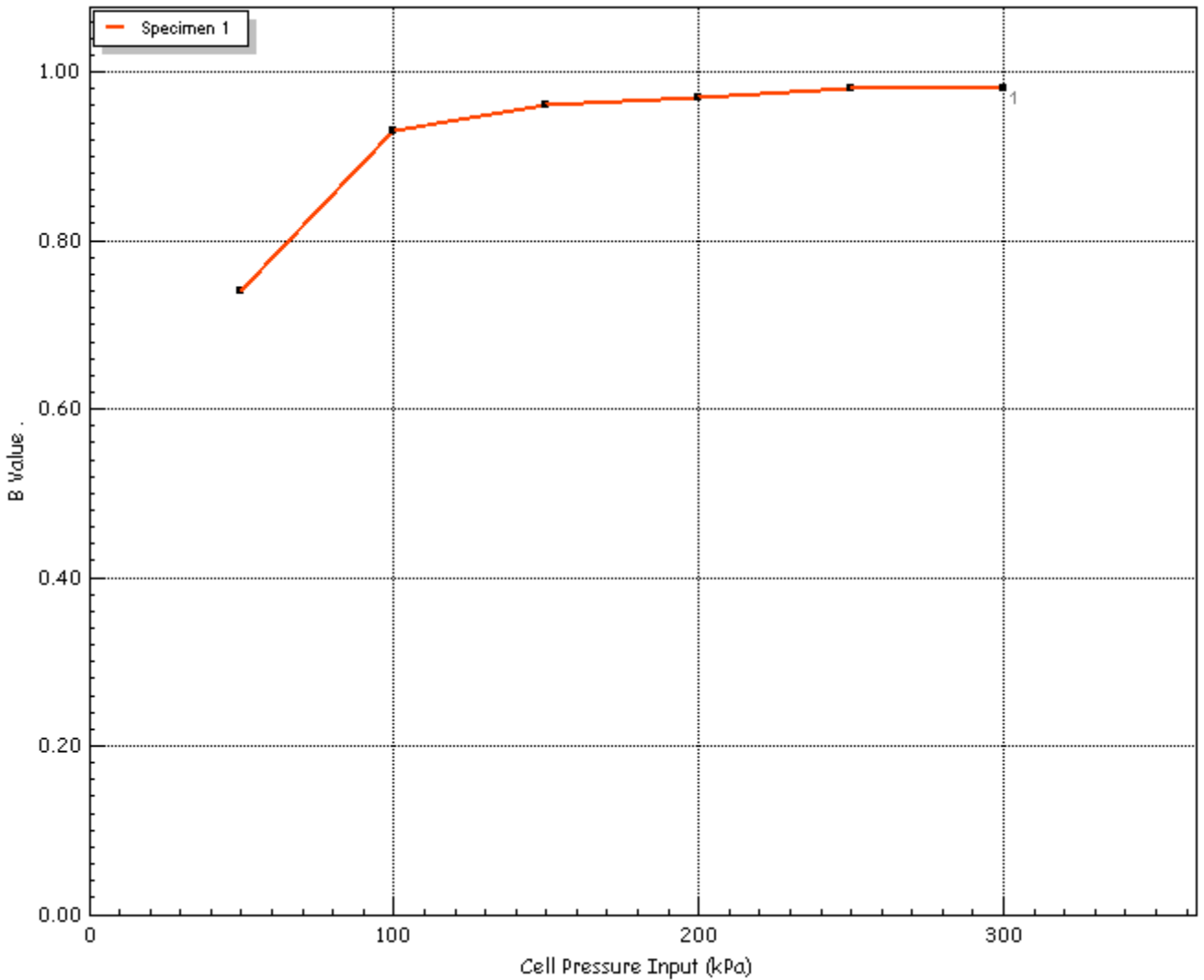
Effective Stress Triaxial Compression


Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	300
Pore Water Pressure Input	u_{pwp}	(kPa)	287
B Value	B	.	0.98



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 16	
	Database: GSTL-152116\SQLEXPRESS2019 \ Effectives		Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH04	
	Jobfile	63955	Sample	6	
	Client	SOCOTEC	Depth	3.7-4.15	
Operator	*	Checked	*	Approved	*

*

Effective Stress Triaxial Compression

Consolidated Undrained

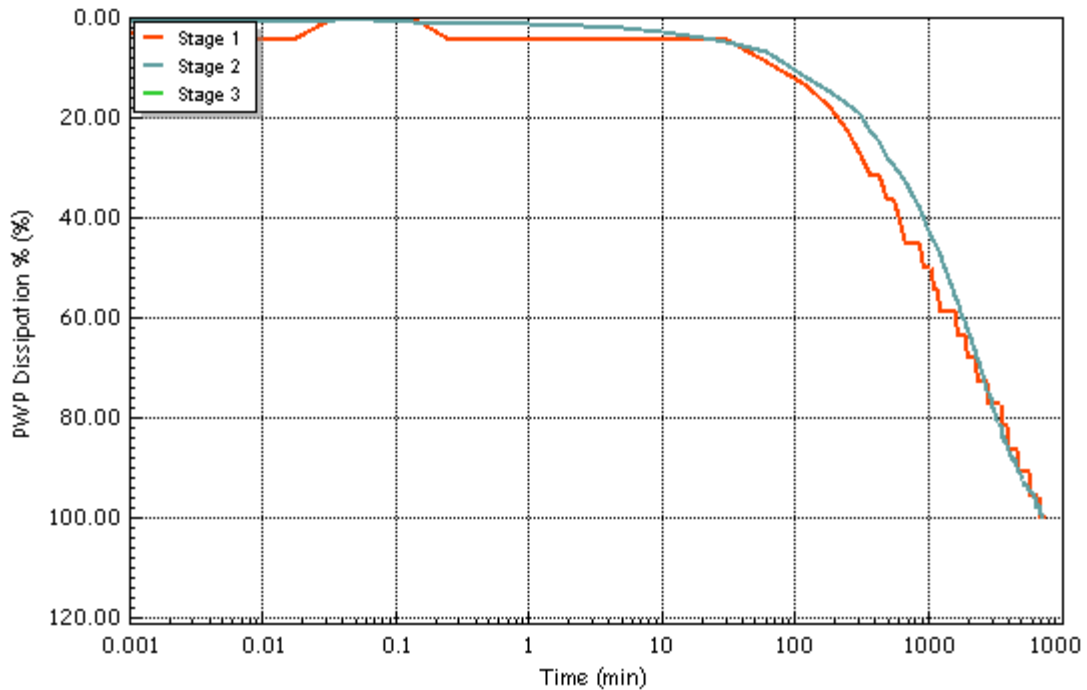
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	335	370	440
Initial Back Pressure	u_{bi}	(kPa)	300	300	300
Pore Water Pressure Input	u_{pwp}	(kPa)	322	349	-4
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	0.00
Volumetric Strain	$\epsilon_v\%$	(%)	1.11	1.65	0.00
Corrected Length	L_c	(mm)	210.1	202.7	197.7
Corrected Area	A_c	(cm ²)	86.27	87.96	90.16
Corrected Volume	V_c	(cc)	1812.721	1782.544	1782.544
t100	t_{100}	(min)	6162.03	4407.51	992.38
Consolidation	c_v	(m ² /year)	0.000	0.001	0.002
Compressibility	m_v	(m ² /MN)	0.51	0.34	0.000
Test Time	t_F	(h:m:s)	184:51:39	132:13:31	00:00:00
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.00095	0.00128	0.00553

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 16	
	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH04	
	Jobfile	63955	Sample	6	
	Client	SOCOTEC	Depth	3.7-4.15	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

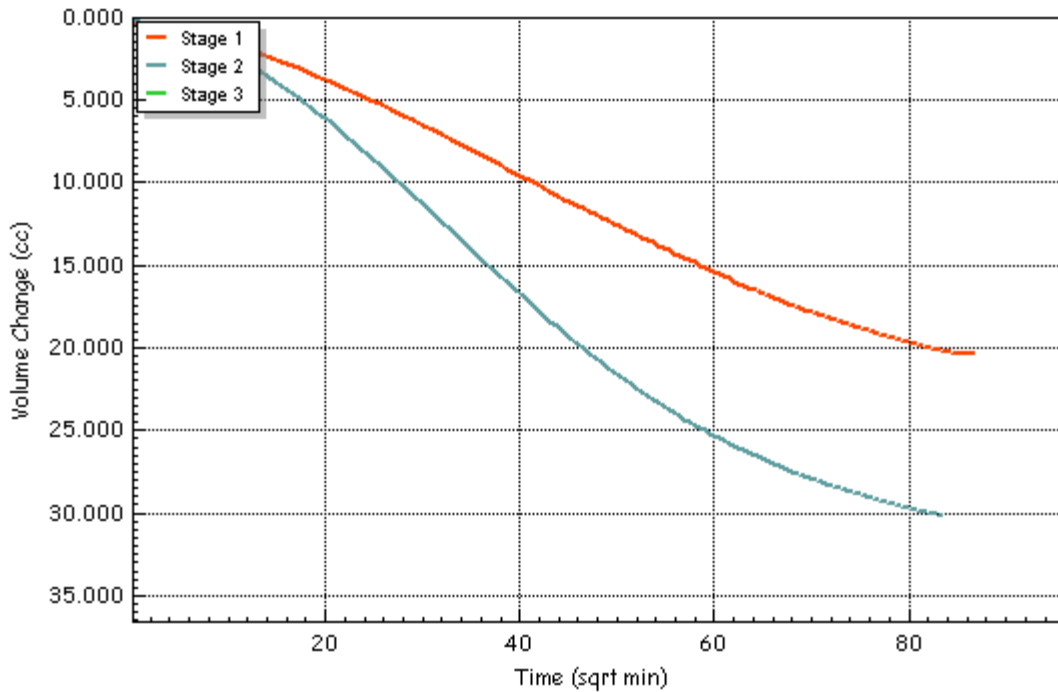
Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	335	370	440
Initial Back Pressure	u_{bi} (kPa)	300	300	300
Pore Water Pressure Input	u_{pwp} (kPa)	322	349	-4
Drainage Method		Radial+One End		

Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	0.00
Volumetric Strain	$\epsilon_v\%$ (%)	1.11	1.65	0.00
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Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.00095	0.00128	0.00553

Notes

Side Drains Used During Test



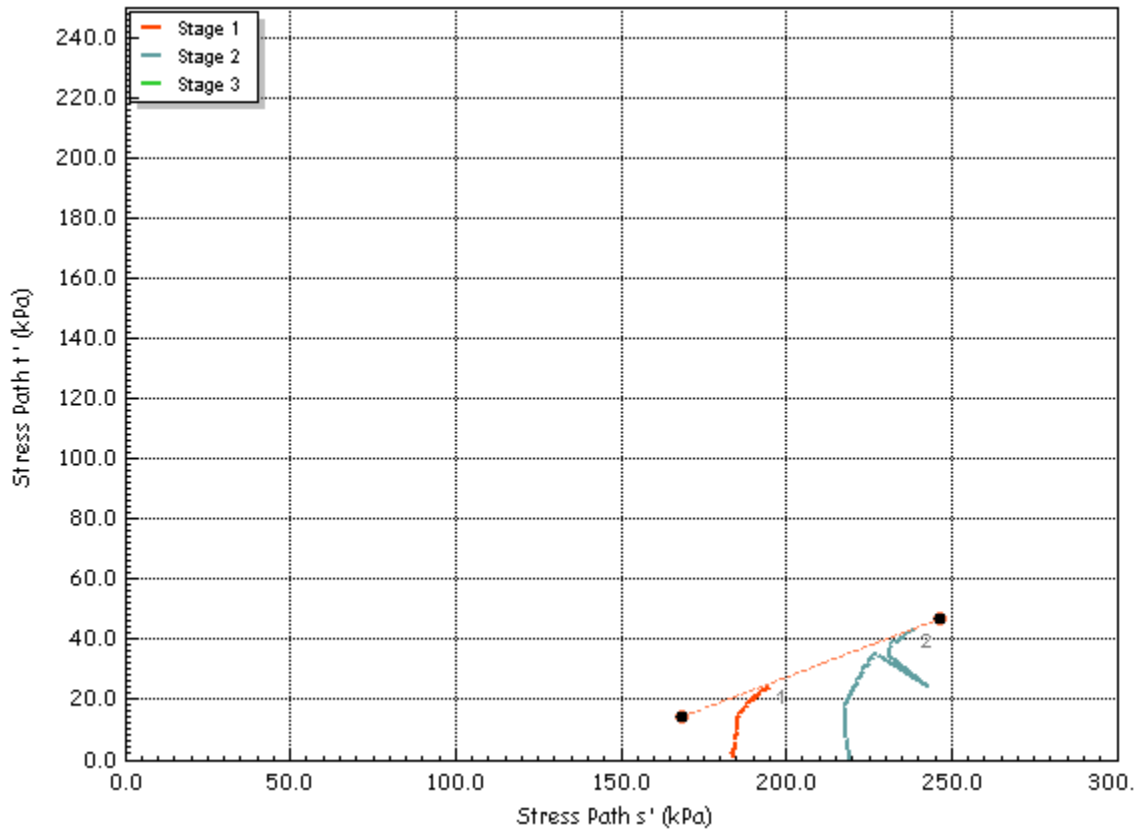
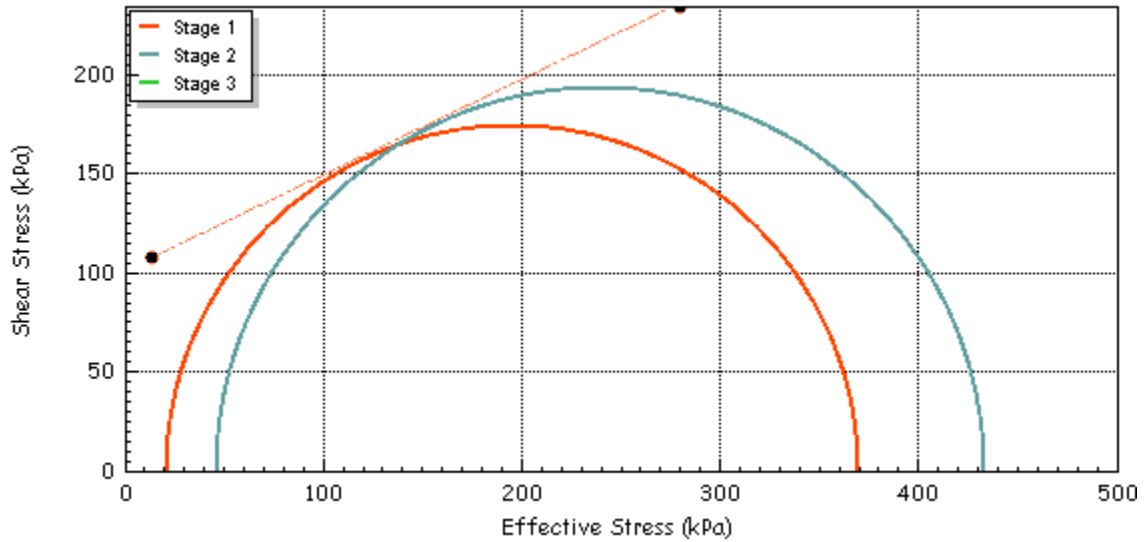
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	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH04	
	Jobfile	63955	Sample	6	
	Client	SOCOTEC	Depth	3.7-4.15	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	100.94	Effective Cohesion c'	(kPa)	-61.35
Effective Friction ϕ'	(deg)	25.8	Effective Friction ϕ'	(deg)	24.6

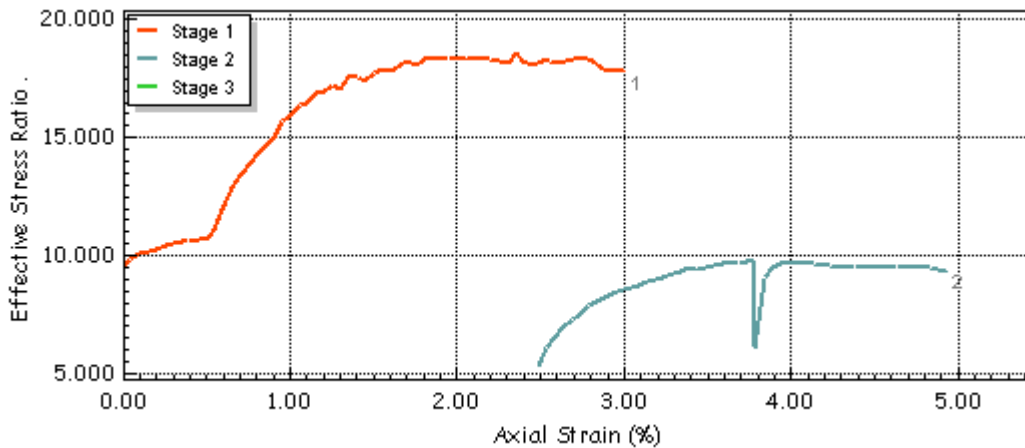
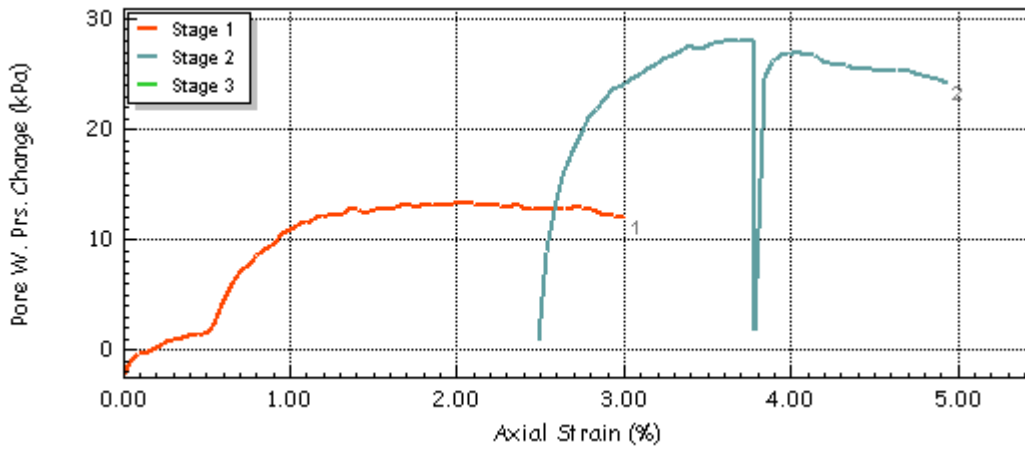
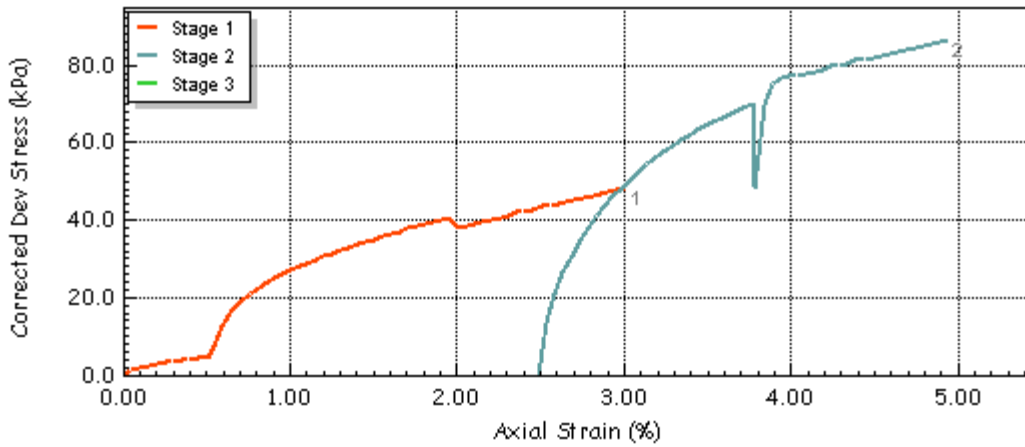


GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 16	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH04	
	Jobfile	63955	Sample	6	
	Client	SOCOTEC	Depth	3.7-4.15	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

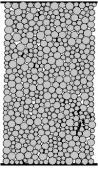


GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 16	
	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH04	
	Jobfile	63955	Sample	6	
	Client	SOCOTEC	Depth	3.7-4.15	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report



Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">3.0-3.45</td> </tr> <tr> <td>Description</td> <td colspan="3">Grey, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.6</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.1</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3414.5</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.86</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	3.0-3.45			Description	Grey, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.6	Initial Sample Diameter	D_0	(mm)	105.1	Initial Sample Weight	W_0	(gr)	3414.5	Initial Bulk Density	ρ_0	(Mg/m ³)	1.86	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	3.0-3.45																																
Description	Grey, CLAY																																
Type	UT																																
Initial Sample Length	L_0	(mm)	211.6																														
Initial Sample Diameter	D_0	(mm)	105.1																														
Initial Sample Weight	W_0	(gr)	3414.5																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.86																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions		Stage 1	2	3	4
Initial Cell Pressure	σ_{3i} (kPa)	630	660	720	
Initial Back Pressure	U_{bi} (kPa)	600	600	600	
Strain Rate	m_s (mm/min)	0.06470	0.00413	0.04000	
Membrane Thickness	m_b (mm)	0.400			
Displacement Input	L_{IP} (mm)	CH 2			
Load Input	N_{IP} (N)	CH 4			
Pore Water Pressure Input	u_{pwp} (kPa)	CH 3			
Sample Volume	V (cc)	CH 6			
Initial Moisture	w_i (%)	32			
Initial Dry Density	ρ_{di} (Mg/m ³)	1.40			
Initial Voids Ratio	e_i	0.887			
Initial Degree of Saturation	S_i (%)	97			
B Value	B	0.99			

Final Conditions					
Final Moisture	w_f (%)	32			
Final Dry Density	ρ_{df} (Mg/m ³)	1.48			
Final Voids Ratio	e_f	0.785			
Final Degree of Saturation	S_f (%)	100.0			
		Stage 1	2	3	4
Failure Criteria		Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f (%)	1.95	5.02	7.91	
Stress At Failure	$(\sigma_1 - \sigma_3)$ (kPa)	35.4	51.1	71.4	
Minor Stress At Failure	σ_3' (kPa)	20.7	43.0	71.7	
Major Stress At Failure	σ_1' (kPa)	56.1	94.1	143.1	
Principal Stress At Failure	σ_1' / σ_3'	2.709	2.189	1.995	
PwP At Failure Criteria	u_f	609.3	617.0	648.2	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.33	3.33	3.33
Membrane Correction at Failure (kpa)	0.20	0.54	0.72


 Compound

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	02/02/2023	
	Site Reference		Borehole	ATK_BH07	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0-3.45	
Operator	██████████	Checked	██████████	Approved	██████████

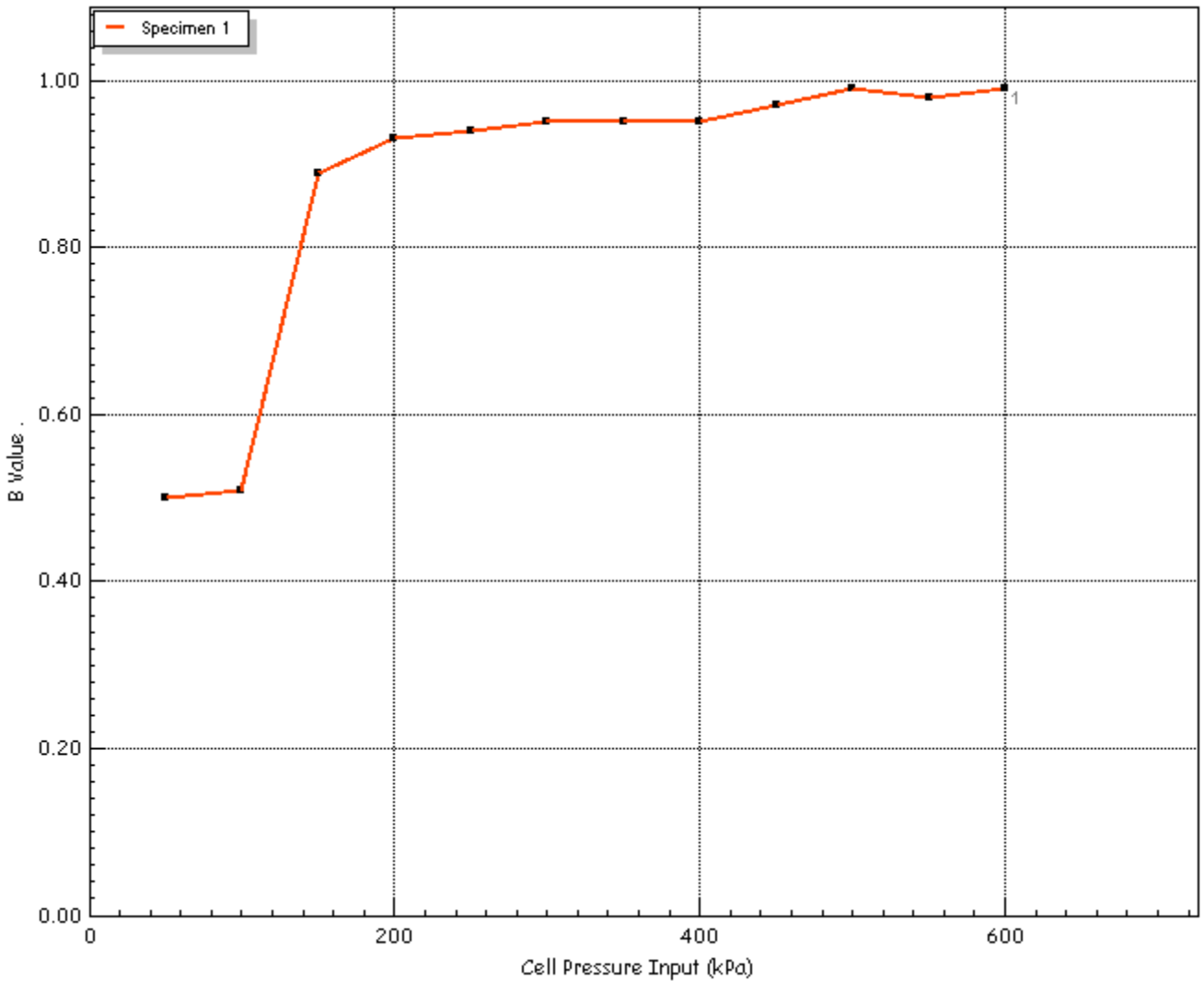
Effective Stress Triaxial Compression


Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	600
Pore Water Pressure Input	u_{pwp}	(kPa)	579
B Value	B	.	0.99



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database: GEOSIT-151825\SQLXPRESS2019 \ Effective		Test Date	02/02/2023	
	Site Reference		Borehole	ATK_BH07	
	Jobfile	63955	Sample	NA	
Client	SOCOTEC	Depth	3.0-3.45		
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	630	660	720
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	621	633	672
Drainage Method			Radial+One End		

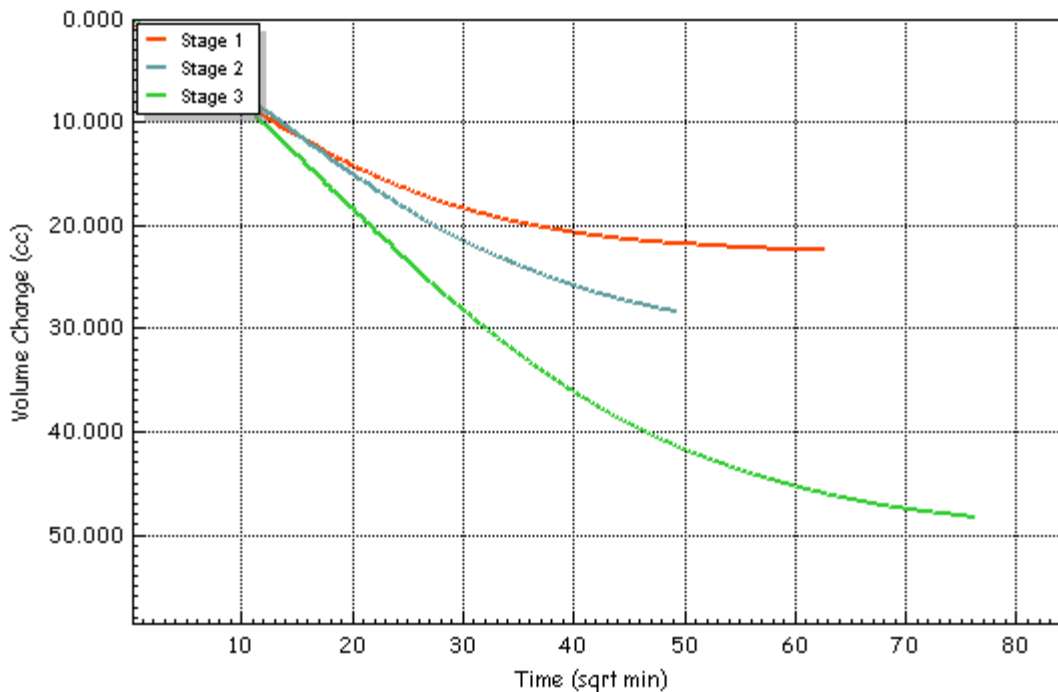
Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	1.22	1.55	2.63
Corrected Length	L_c	(mm)	210.7	201.8	195.7
Corrected Area	A_c	(cm ²)	86.05	88.47	88.77
Corrected Volume	V_c	(cc)	1813.304	1784.904	1736.537
t100	t_{100}	(min)	904.52	1355.44	2605.98
Consolidation	c_v	(m ² /year)	0.003	0.002	0.001
Compressibility	m_v	(m ² /MN)	0.58	0.47	0.37
Test Time	t_F	(h:m:s)	27:08:07	40:39:47	78:10:45
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.00647	0.00413	0.00209

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure (kpa)



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	02/02/2023	
	Site Reference		Borehole	ATK_BH07	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0-3.45	
	Operator	██████████	Checked	██████████	Approved

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	630	660	720
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	621	633	672
Drainage Method			Radial+One End		

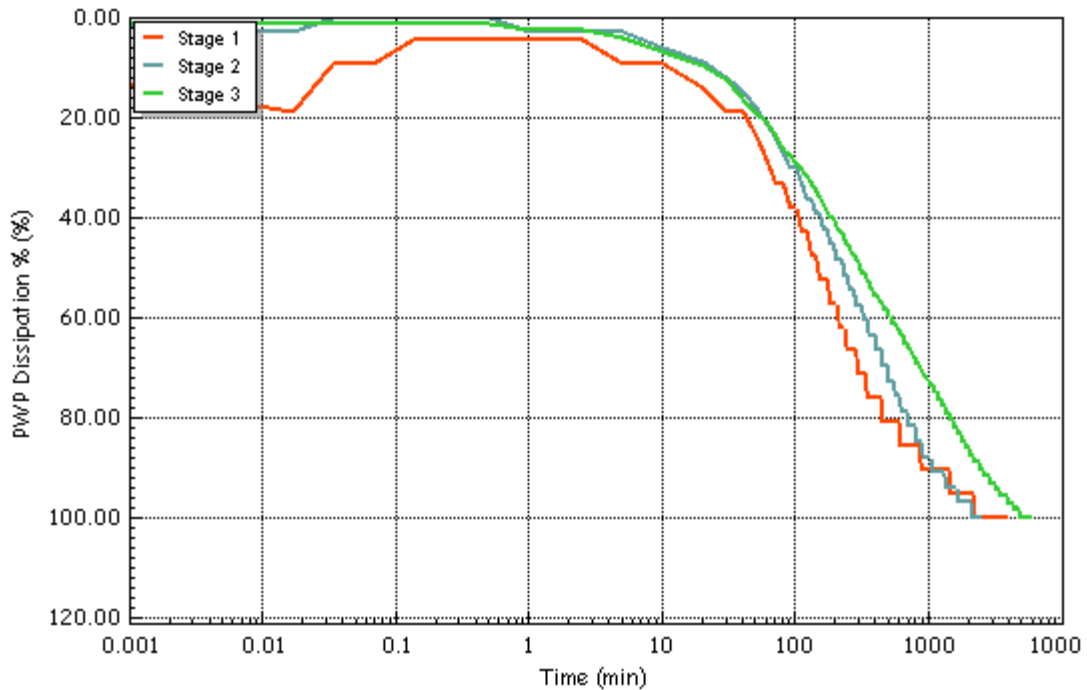
Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	1.22	1.55	2.63
Corrected Length	L_c	(mm)	210.7	201.8	195.7
Corrected Area	A_c	(cm ²)	86.05	88.47	88.77
Corrected Volume	V_c	(cc)	1813.304	1784.904	1736.537
t100	t_{100}	(min)	904.52	1355.44	2605.98
Consolidation	c_v	(m ² /year)	0.003	0.002	0.001
Compressibility	m_v	(m ² /MN)	0.58	0.47	0.37
Test Time	t_F	(h:m:s)	27:08:07	40:39:47	78:10:45
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.00647	0.00413	0.00209

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure (kpa)



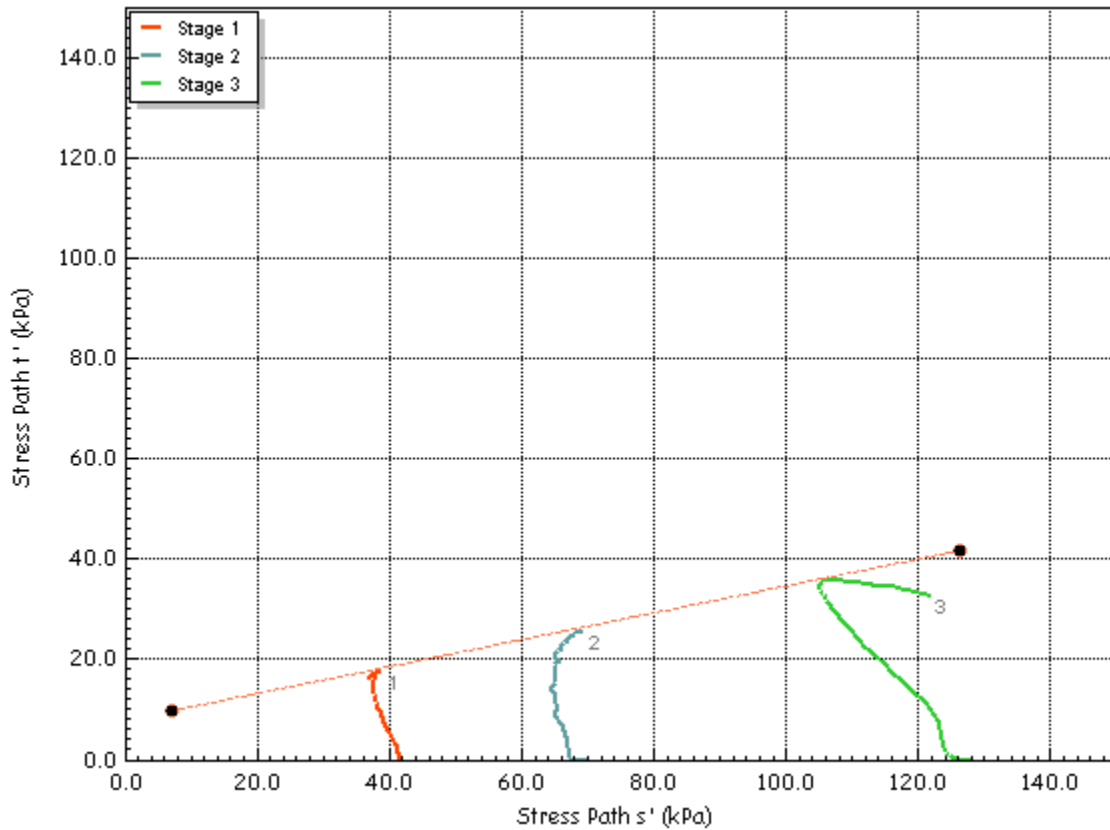
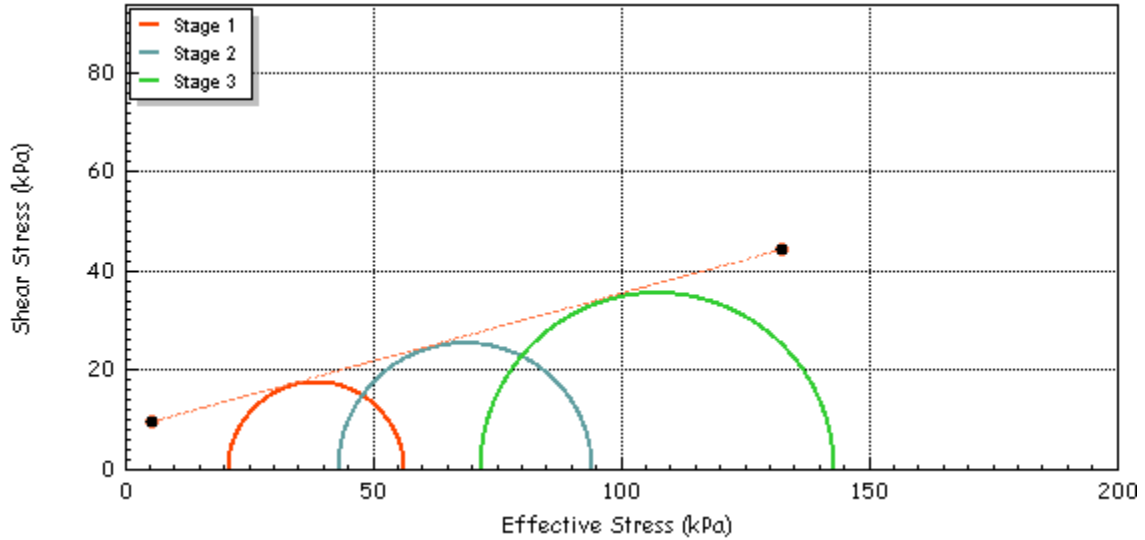
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	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	02/02/2023	
	Site Reference		Borehole	ATK_BH07	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0-3.45	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	7.95	Effective Cohesion c'	(kPa)	8.31
Effective Friction ϕ'	(deg)	15.4	Effective Friction ϕ'	(deg)	15.5

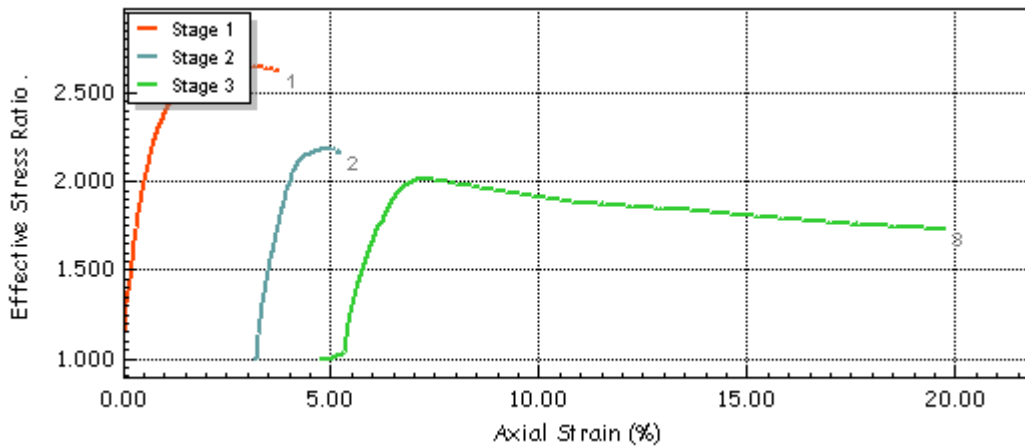
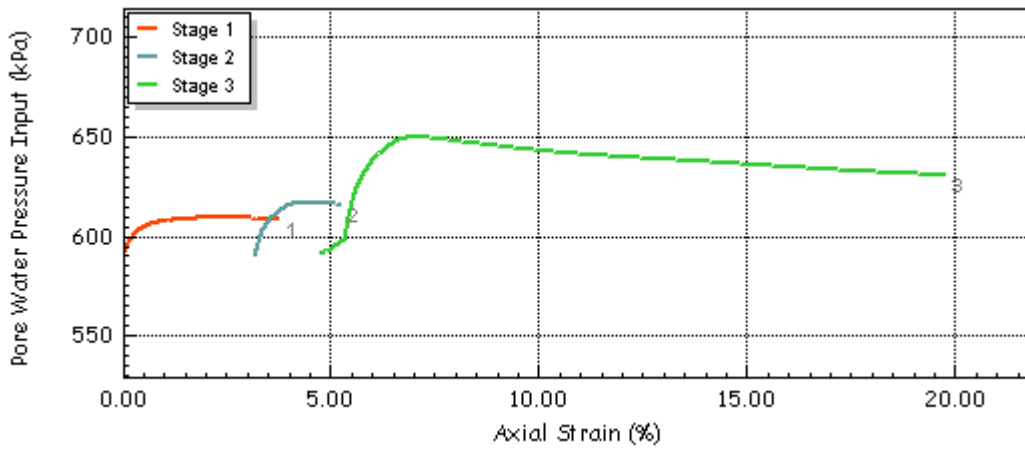
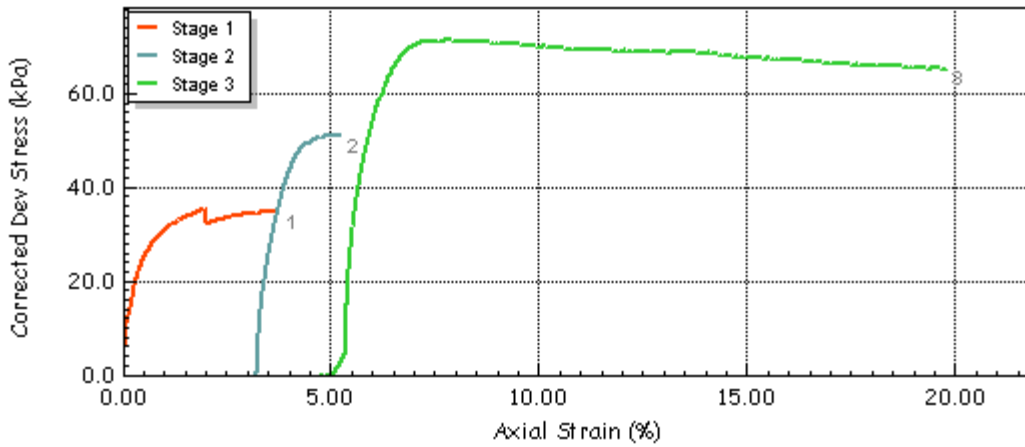



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	02/02/2023	
	Site Reference		Borehole	ATK_BH07	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0-3.45	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

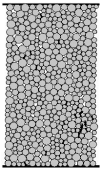


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	02/02/2023	
	Site Reference		Borehole	ATK_BH07	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0-3.45	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report


Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">3.0</td> </tr> <tr> <td>Description</td> <td colspan="3">Brown, Sandy, Fine to Coarse Gravel, Silty, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>210.9</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>106.1</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3579.3</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.92</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	3.0			Description	Brown, Sandy, Fine to Coarse Gravel, Silty, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	210.9	Initial Sample Diameter	D_0	(mm)	106.1	Initial Sample Weight	W_0	(gr)	3579.3	Initial Bulk Density	ρ_0	(Mg/m ³)	1.92	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	3.0																																
Description	Brown, Sandy, Fine to Coarse Gravel, Silty, CLAY																																
Type	UT																																
Initial Sample Length	L_0	(mm)	210.9																														
Initial Sample Diameter	D_0	(mm)	106.1																														
Initial Sample Weight	W_0	(gr)	3579.3																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.92																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														


Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	435	470	540	
Initial Back Pressure	U_{bi}	(kPa)	400	400	400	
Strain Rate	m_s	(mm/min)	0.08751	0.08505	0.00479	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	ω_i	(%)	25			
Initial Dry Density	ρ_{di}	(Mg/m ³)	1.53			
Initial Voids Ratio	e_i	.	0.729			
Initial Degree of Saturation	S_i	(%)	92			
B Value	B	.	0.98			

Final Conditions			Stage 1	2	3	4
Final Moisture	ω_f	(%)	23			
Final Dry Density	ρ_{df}	(Mg/m ³)	1.62			
Final Voids Ratio	e_f	.	0.640			
Final Degree of Saturation	S_f	(%)	95.7			
Failure Criteria	.	.	Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)	1.95	5.25	11.55	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)	19.0	203.2	394.1	
Minor Stress At Failure	σ_3'	(kPa)	29.0	231.7	453.0	
Major Stress At Failure	σ_1'	(kPa)	448.0	834.9	1248.1	
Principal Stress At Failure	σ_1' / σ_3'		15.449	3.604	2.755	
PwP At Failure Criteria	u_f		406.0	238.3	87.0	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.58	3.58	3.58
Membrane Correction at Failure (kpa)	0.20	0.55	0.93


 Compound

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 17	
	Database:	GSTL-152117\SQLEXPRESS2019 \ Effectives	Test Date	10/02/2023	
	Site Reference		Borehole	ATKRD_BH08	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0	
Operator	*	Checked	*	Approved	*


 2788

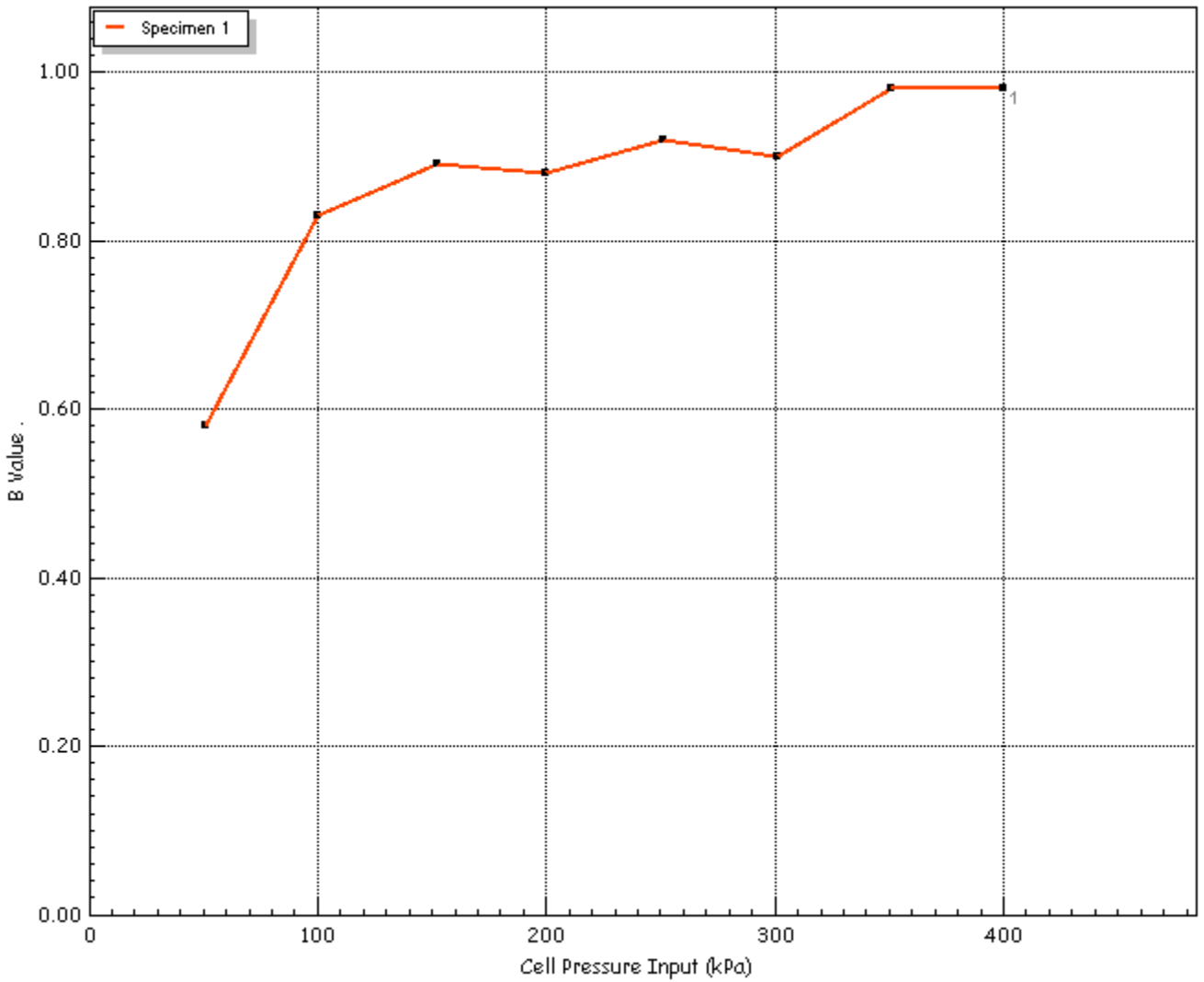
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	400
Pore Water Pressure Input	u_{pwp}	(kPa)	384
B Value	B	.	0.98



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 17	
	Database:	GSTL-152117\SQLEXPRESS2019 \ Effectives	Test Date	10/02/2023	
	Site Reference		Borehole	ATKRD_BH08	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0	
Operator	*	Checked	*	Approved	*

*

Effective Stress Triaxial Compression

Consolidated Undrained

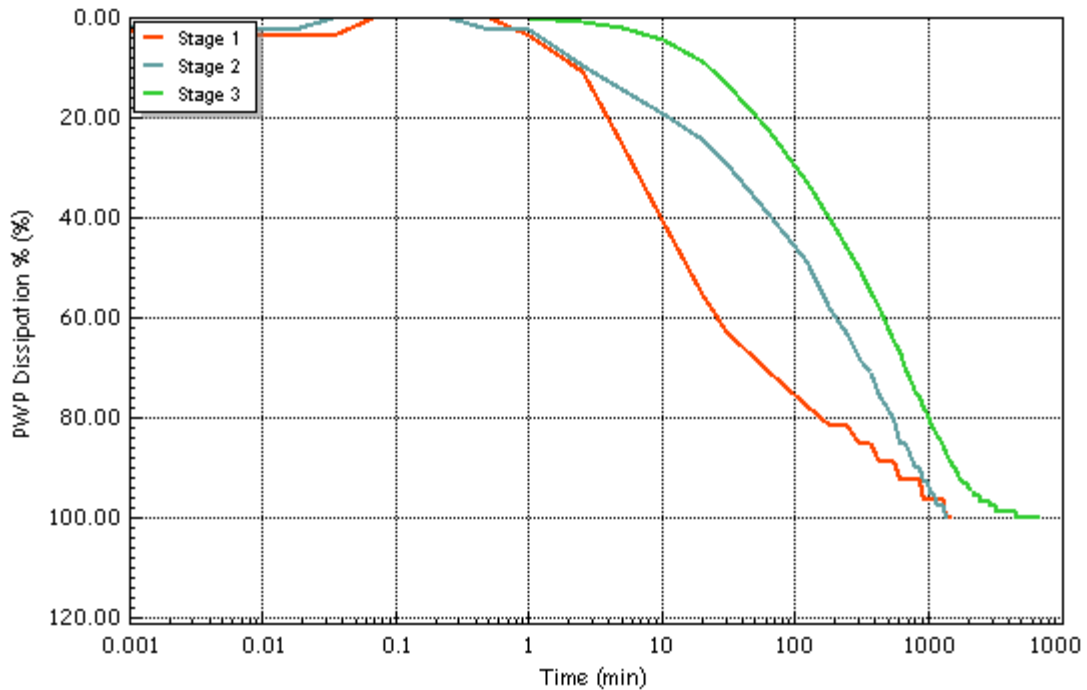
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	435	470	540
Initial Back Pressure	u_{bi}	(kPa)	400	400	400
Pore Water Pressure Input	u_{pwp}	(kPa)	427	441	491
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	1.23	1.40	2.48
Corrected Length	L_c	(mm)	210.0	204.1	195.2
Corrected Area	A_c	(cm ²)	87.69	88.95	90.65
Corrected Volume	V_c	(cc)	1841.645	1815.463	1769.158
t100	t_{100}	(min)	27.84	27.84	1132.54
Consolidation	c_v	(m ² /year)	0.084	0.085	0.002
Compressibility	m_v	(m ² /MN)	0.46	0.34	0.27
Test Time	t_F	(h:m:s)	02:00:00	02:00:00	33:58:34
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08751	0.08505	0.00479

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 17	
	Database:	GSTL-152117\SQLXPRESS2019 \ Effectives	Test Date	10/02/2023	
	Site Reference		Borehole	ATKRD_BH08	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

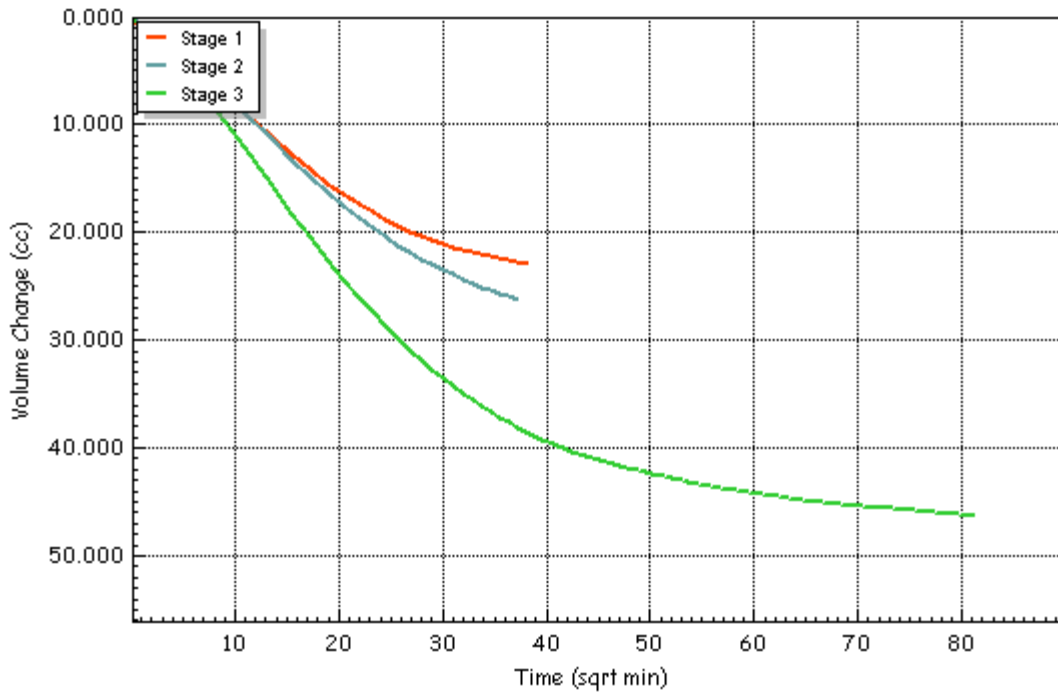
Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	435	470	540
Initial Back Pressure	u_{bi} (kPa)	400	400	400
Pore Water Pressure Input	u_{pwp} (kPa)	427	441	491
Drainage Method		Radial+One End		

Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$ (%)	1.23	1.40	2.48
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Compressibility	m_v (m ² /MN)	0.46	0.34	0.27
Test Time	t_F (h:m:s)	02:00:00	02:00:00	33:58:34
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.08751	0.08505	0.00479

Notes

Side Drains Used During Test



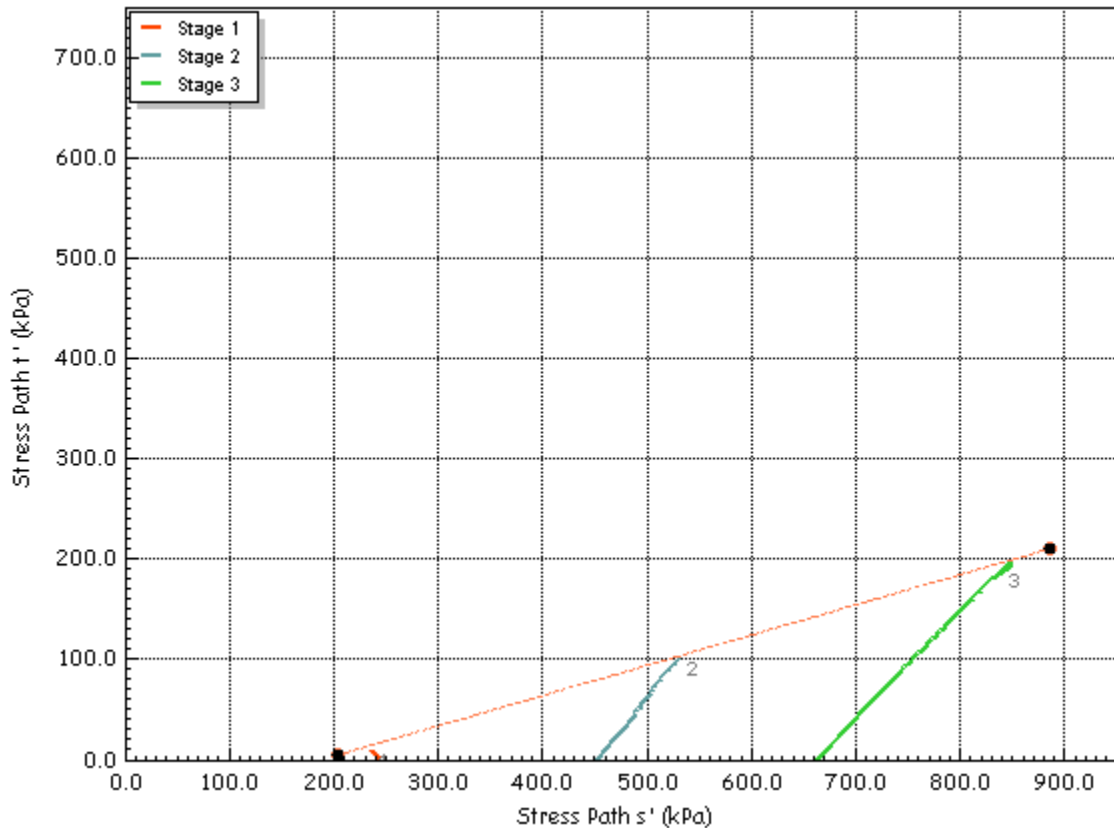
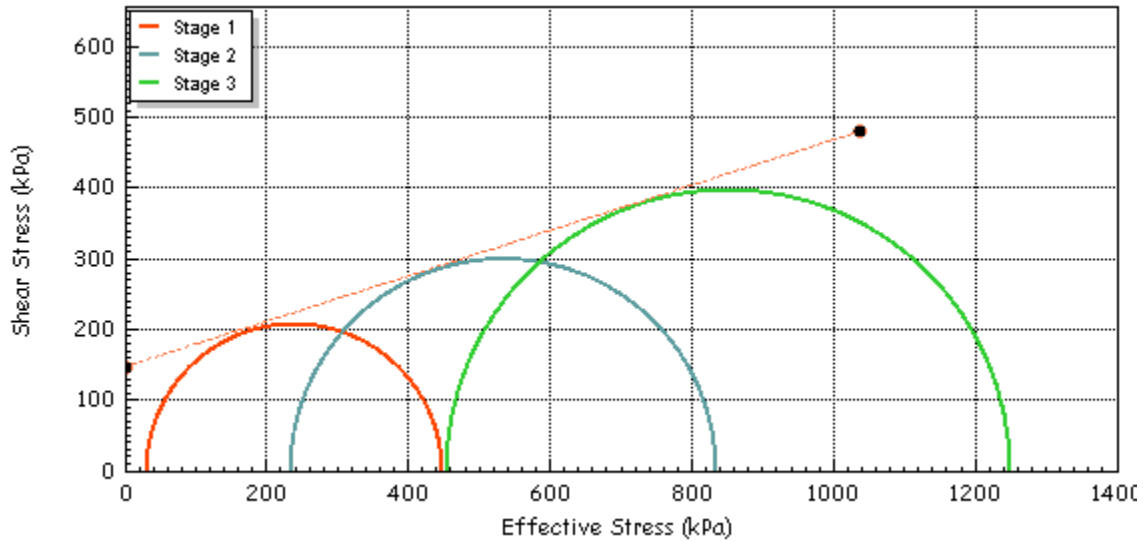
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	Database:	GSTL-152117\SQLXPRESS2019 \ Effectives	Test Date	10/02/2023	
	Site Reference		Borehole	ATKRD_BH08	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	0.08	Effective Cohesion c'	(kPa)	-60.15
Effective Friction ϕ'	(deg)	32.5	Effective Friction ϕ'	(deg)	17.5

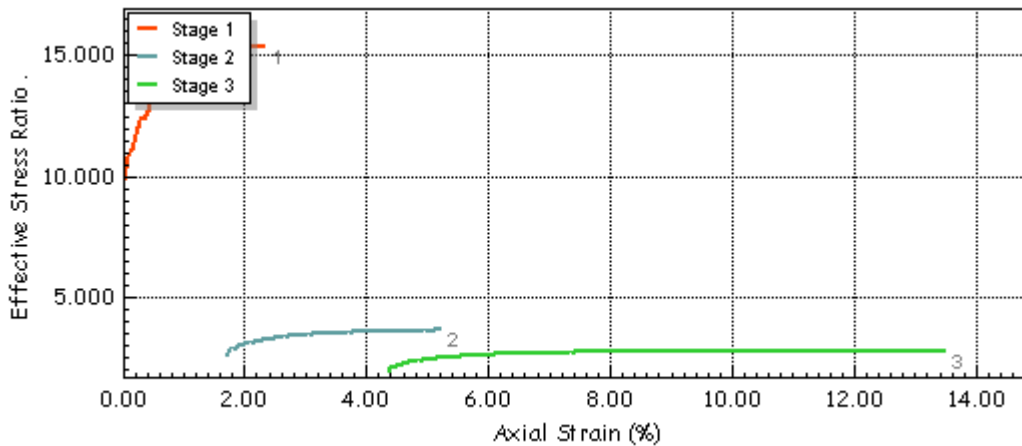
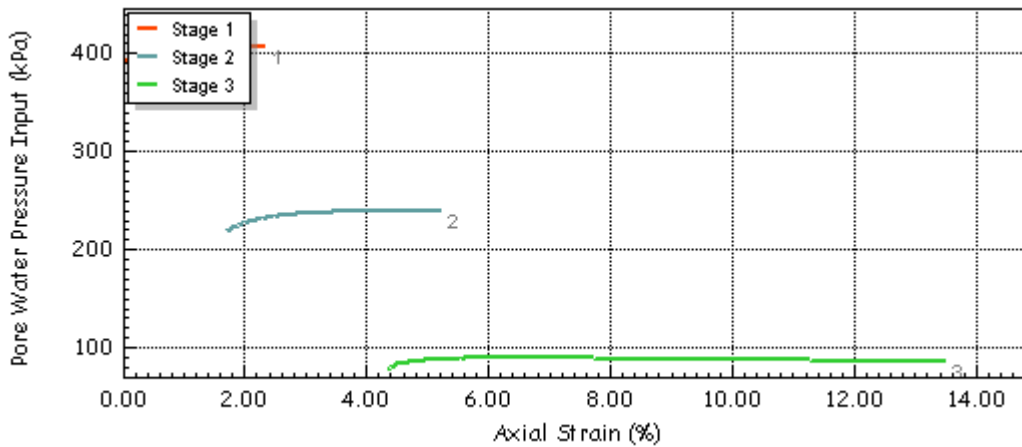
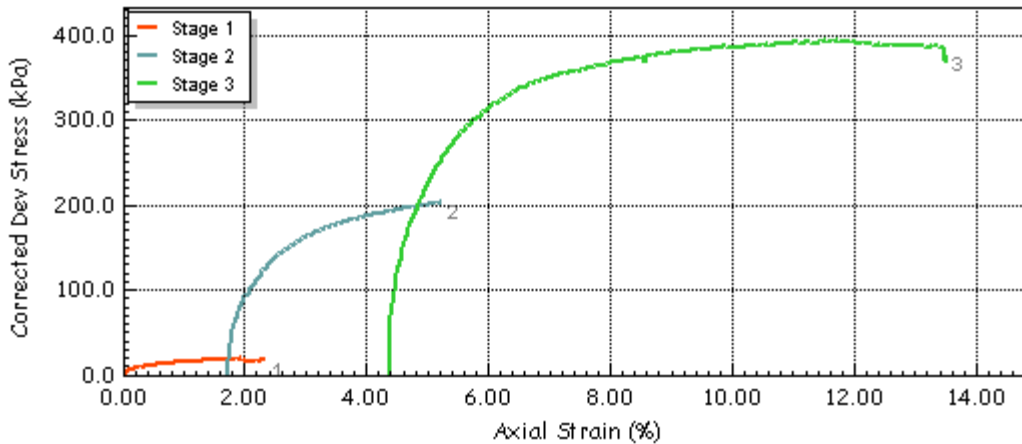


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 17	
	Database:	GSTL-152117\SQLEXPRESS2019 \ Effectives	Test Date	10/02/2023	
	Site Reference		Borehole	ATKRD_BH08	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 17	
	Database:	GSTL-152117\SQLEXPRESS2019 \ Effectives	Test Date	10/02/2023	
	Site Reference		Borehole	ATKRD_BH08	
	Jobfile	63955	Sample	NA	
	Client	SOCOTEC	Depth	3.0	
Operator	*	Checked	*	Approved	*



2788

Laboratory Report



Contract Number: 64154

Client Ref: **H2060-22**

Client PO:

Date Received: **27-01-2023**

Date Completed: **03-03-2023**

Report Date: **03-03-2023**

Client: **SOCOTEC**

Unit 15

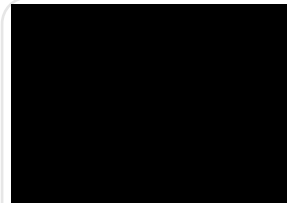
Crosby Yard Industrial Estate

Wildmill

Bridgend

CF31 1JZ

This report has been checked and approved by:



Office Administrator

Contract Title: **Lyneham Banks**

For the attention of:

Test Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	37
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	37
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	37
PSD: Sedimentation by pipette carried out with Wet Sieve (Wet Sieve must also be selected) BS 1377:1990 - Part 2 : 9.4 - * UKAS	37
One-dimensional Consolidation 75mm or 50mm diameter specimens (up to 5 stages/days) BS 1377:1990 - Part 5 : 3 - * UKAS	7
Quick Undrained Triaxial Compression test - single specimen at one confining pressure (100mm or 38mm diameter) BS 1377:1990 - Part 7 : 8 - * UKAS	20
CUT 100mm Consolidated undrained triaxial compression test on a Single Specimen with Multistage Loading with the measurement of pore water pressure including saturation and consolidation, test duration FOUR days. PLEASE NOTE IT IS LIKELY THIS TEST WILL INCUR EXTRA OVER DAY CHARGES. BS 1377:1990 - Part 8 : 7 - * UKAS	6

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (Human Resources/ Health and Safety Manager)

GEO Site & Testing Services Ltd

Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk



2788

Laboratory Report



Contract Number: 64154

Test Description	Qty
Extra over items for test duration in excess of four days.	43
As 5.01, 5.03 & 5.04 each extra additional stage/day BS 1377:1990 - Part 5 : 3	14
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

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Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

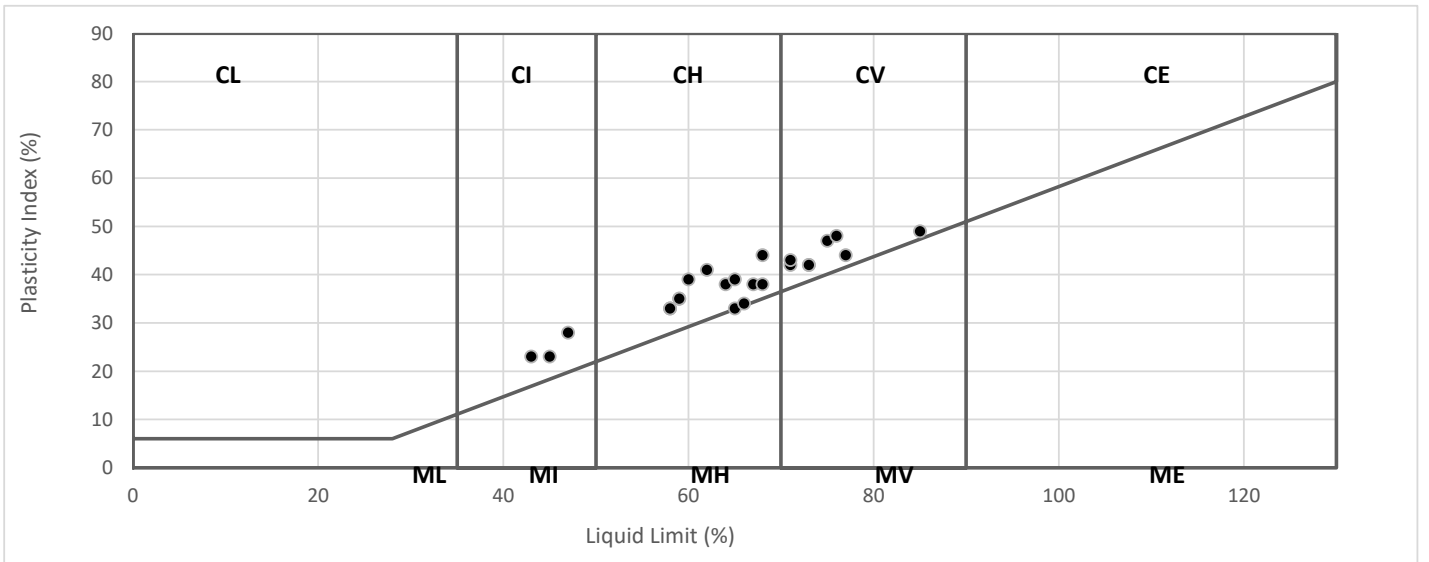
NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)

Contract Number	64154
Project Name	Lyneham Banks
Date Tested	07/02/2023

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
ATK_BH01	3	B	0.00	-	0.40	51	85	36	49	93	CV Very High Plasticity
ATK_BH01	9	B	0.80	-	1.20	42	73	31	42	91	CV Very High Plasticity
ATKRD_BH05	101	D	2.00	-		31	64	26	38	90	CH High Plasticity
ATKRD_BH05	103	D	4.00	-		28	58	25	33	96	CH High Plasticity
ATKRD_BH05	106	D	6.50	-		27	68	24	44	100	CH High Plasticity
ATKRD_BH05	110	D	10.50	-		23	60	21	39	99	CH High Plasticity
ATKRD_BH06	101	D	2.00	-		38	71	29	42	100	CV Very High Plasticity
ATKRD_BH06	102	D	3.70	-		35	73	31	42	90	CV Very High Plasticity
ATKRD_BH06	104	D	6.25	-		20	59	24	35	99	CH High Plasticity
ATKRD_BH06	107	D	9.00	-		21	58	25	33	99	CH High Plasticity
ATKRD_BH06	110	D	11.50	-		22	62	21	41	98	CH High Plasticity
ATK_BH02	1	D	0.50	-		29	59	24	35	92	CH High Plasticity
ATK_BH02	2	D	1.00	-		37	67	29	38	99	CH High Plasticity
ATK_BH02	103	D	2.90	-	3.00	33	75	28	47	94	CV Very High Plasticity
ATK_BH02	104	D	3.90	-	4.00	34	76	28	48	96	CV Very High Plasticity
ATK_BH02	106	D	5.90	-	6.00	35	68	30	38	98	CH High Plasticity
ATK_BH02	110	D	8.90	-	9.00	32	65	26	39	72	CH High Plasticity
ATK_BH02	116	D	12.90	-		22	47	19	28	100	CI Intermediate Plasticity
ATK_BH02	121	D	17.00	-	17.10	15	43	20	23	99	CI Intermediate Plasticity
ATK_BH06	3	B	0.00	-	0.40	44	77	33	44	62	CV Very High Plasticity
ATK_BH06	6	B	0.40	-	0.80	54	65	32	33	64	CH High Plasticity
ATK_BH06	102	D	2.00	-		33	71	28	43	87	CV Very High Plasticity
ATK_BH06	103	D	3.50	-		15	45	22	23	75	CI Intermediate Plasticity
ATK_BH06	104	D	5.60	-		29	66	32	34	98	CH High Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:2015+A1:2020



Operator
[Redacted]



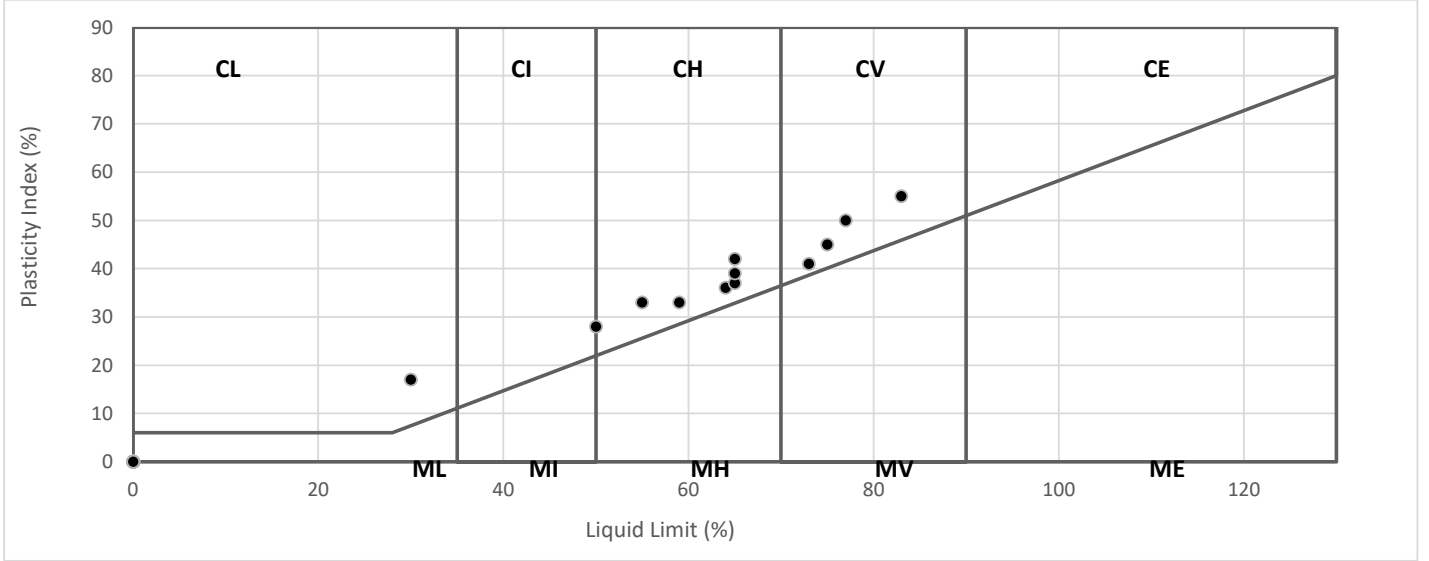
**NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)**

Contract Number	64154
Project Name	Lyneham Banks
Date Tested	07/02/2023

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
ATK_BH06	107	D	10.10	-		26	55	22	33	100	CH High Plasticity
ATKRD_BH10	4	D	2.45	-	2.50	29	64	28	36	91	CH High Plasticity
ATKRD_BH10	8	D	4.00	-	4.35	29	83	28	55	99	CV Very High Plasticity
ATKRD_BH10	106	D	6.60	-		28	75	30	45	99	CV Very High Plasticity
ATKRD_BH07	106	CS	3.65	-	4.00	23	59	26	33	91	CH High Plasticity
ATKRD_BH07	118	D	11.10	-		22	65	28	37	99	CH High Plasticity
ATKRD_BH11	101	D	2.70	-		31	73	32	41	95	CV Very High Plasticity
ATKRD_BH11	103	D	5.00	-		31	77	27	50	98	CV Very High Plasticity
ATKRD_BH11	107	D	8.50	-		18	50	22	28	82	CI/H Inter/High Plasticity
ATKRD_BH10	2	B	0.20	-	0.30	1.5		NP		47	
ATKRD_BH07	1	B	0.30	-	1.10	11	30	13	17	93	CL Low Plasticity
ATKRD_BH07	103	B	1.80	-		30	65	26	39	95	CH High Plasticity
ATKRD_BH07	111	B	5.60	-		28	65	23	42	93	CH High Plasticity
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Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

**PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:2015+A1:2020**

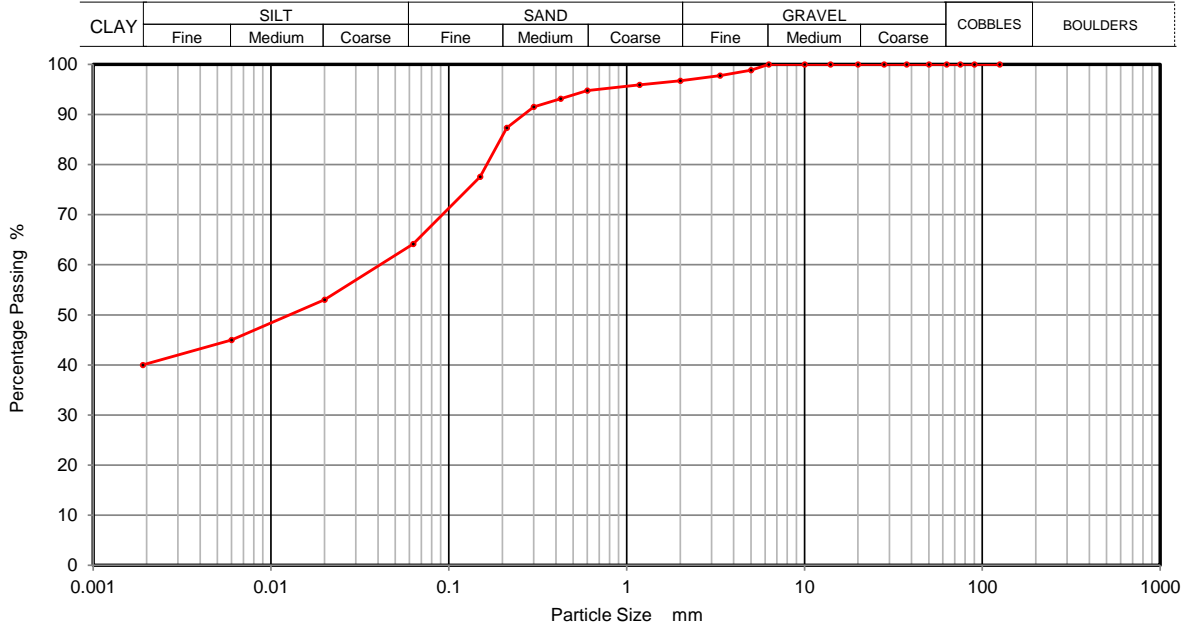




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH01
Sample No.	3
Depth Top	0.00
Depth Base	0.40
Sample Type	B

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	53
90	100	0.0060	45
75	100	0.0020	40
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	98		
2	97		
1.18	96		
0.6	95		
0.425	93		
0.3	91		
0.212	87		
0.15	78		
0.063	64		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	33
Silt	24
Clay	40

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



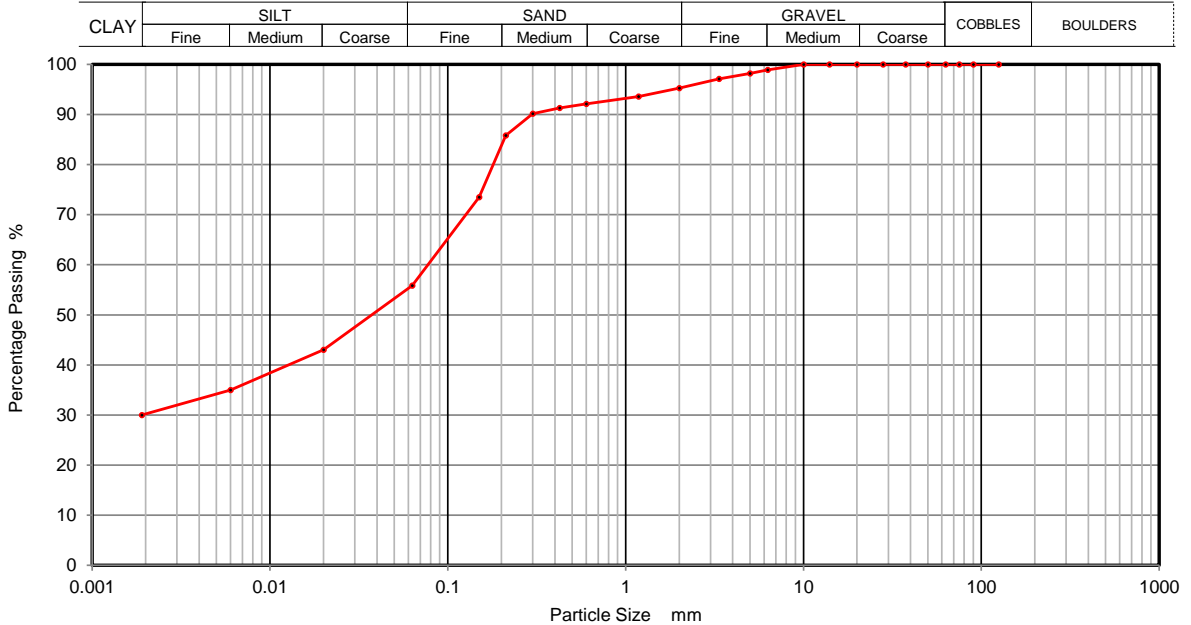
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH01
Sample No.	9
Depth Top	0.80
Depth Base	1.20
Sample Type	B

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	43
90	100	0.0060	35
75	100	0.0020	30
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	98		
3.35	97		
2	95		
1.18	94		
0.6	92		
0.425	91		
0.3	90		
0.212	86		
0.15	74		
0.063	56		

Sample Proportions	% dry mass
Cobbles	0
Gravel	5
Sand	39
Silt	26
Clay	30

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



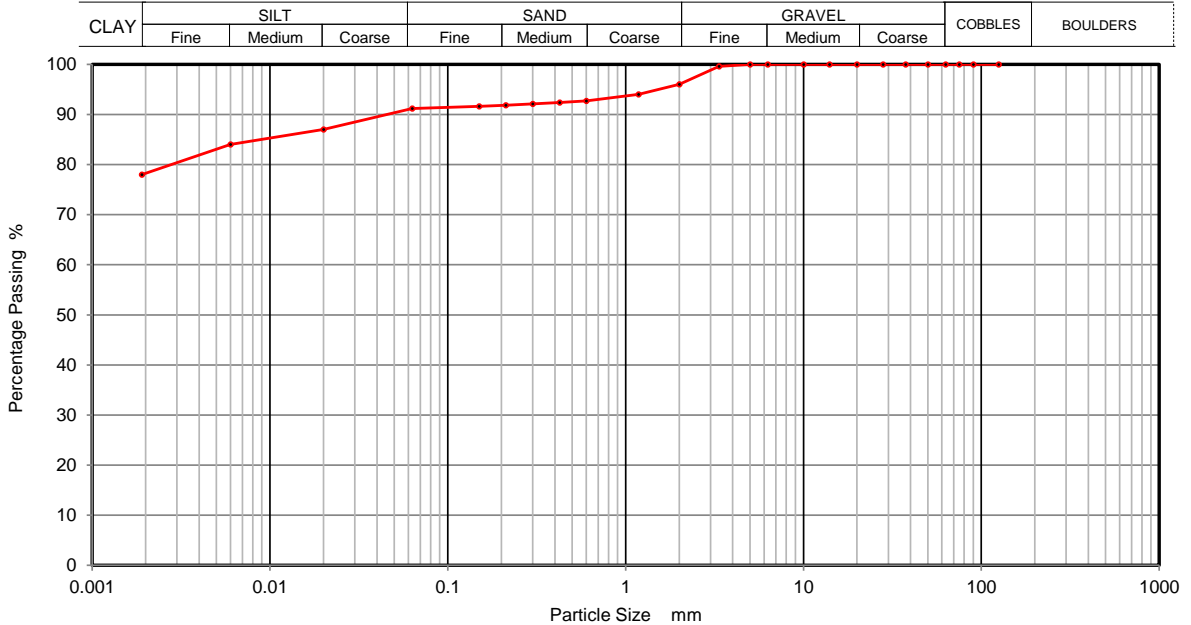
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH02
Sample No.	1
Depth Top	0.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	87
90	100	0.0060	84
75	100	0.0020	78
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	96		
1.18	94		
0.6	93		
0.425	92		
0.3	92		
0.212	92		
0.15	92		
0.063	91		

Sample Proportions	% dry mass
Cobbles	0
Gravel	4
Sand	5
Silt	13
Clay	78

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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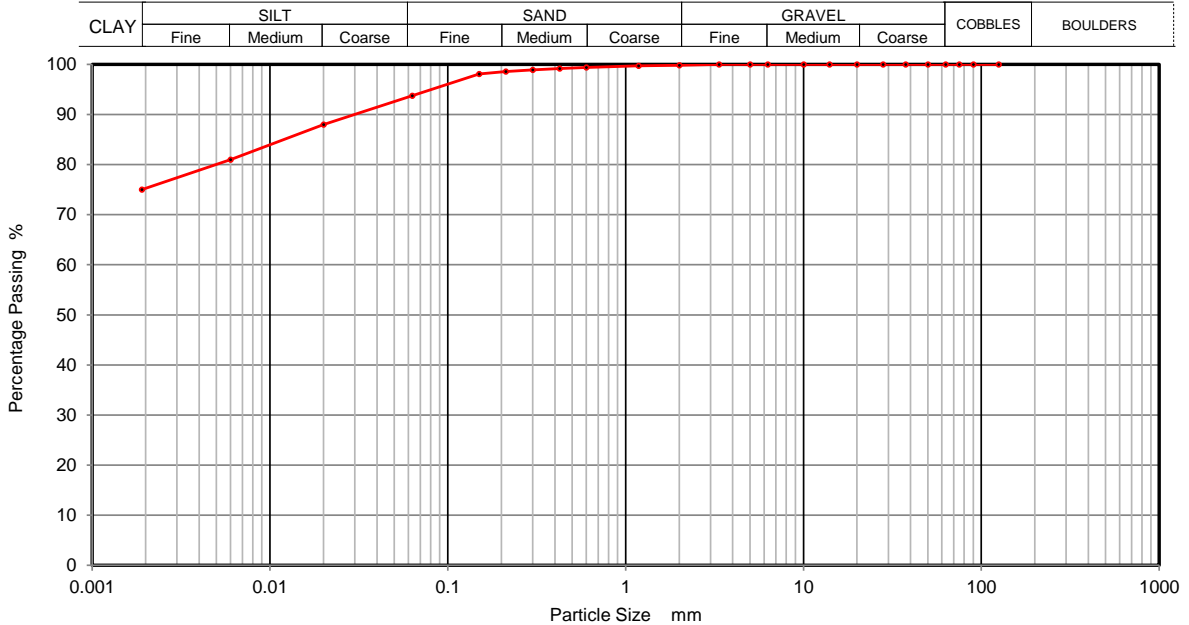
2788



**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH02
Sample No.	2
Depth Top	1.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	88
90	100	0.0060	81
75	100	0.0020	75
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	98		
0.063	94		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	6
Silt	19
Clay	75

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



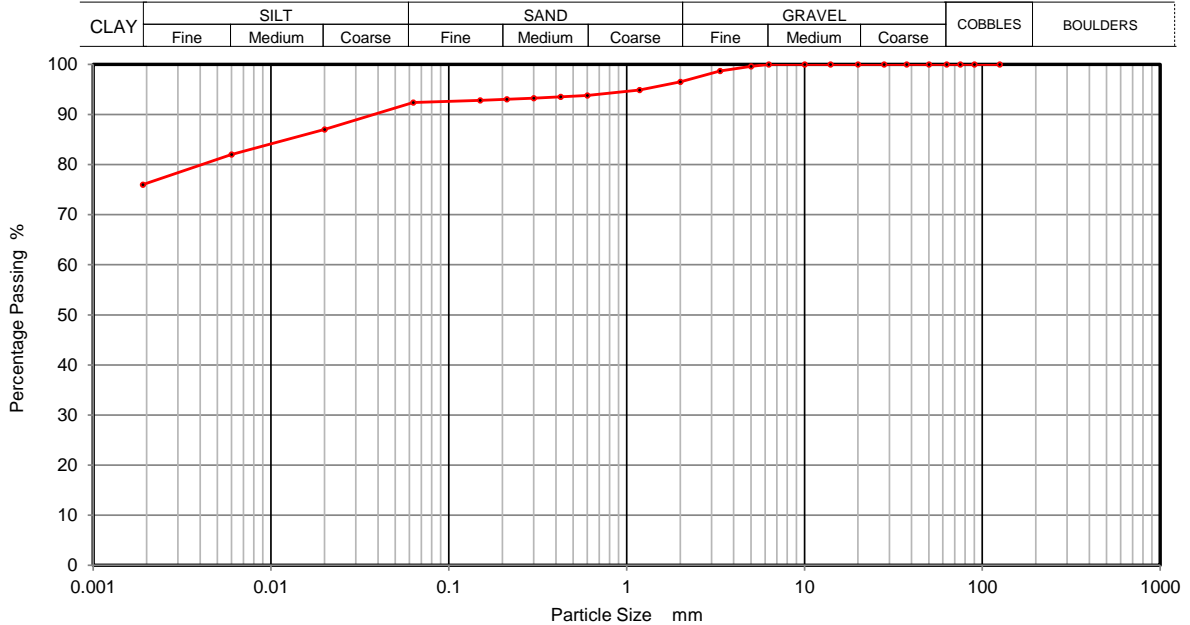
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH02
Sample No.	103
Depth Top	2.90
Depth Base	3.00
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	87
90	100	0.0060	82
75	100	0.0020	76
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	97		
1.18	95		
0.6	94		
0.425	94		
0.3	93		
0.212	93		
0.15	93		
0.063	92		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	5
Silt	16
Clay	76

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



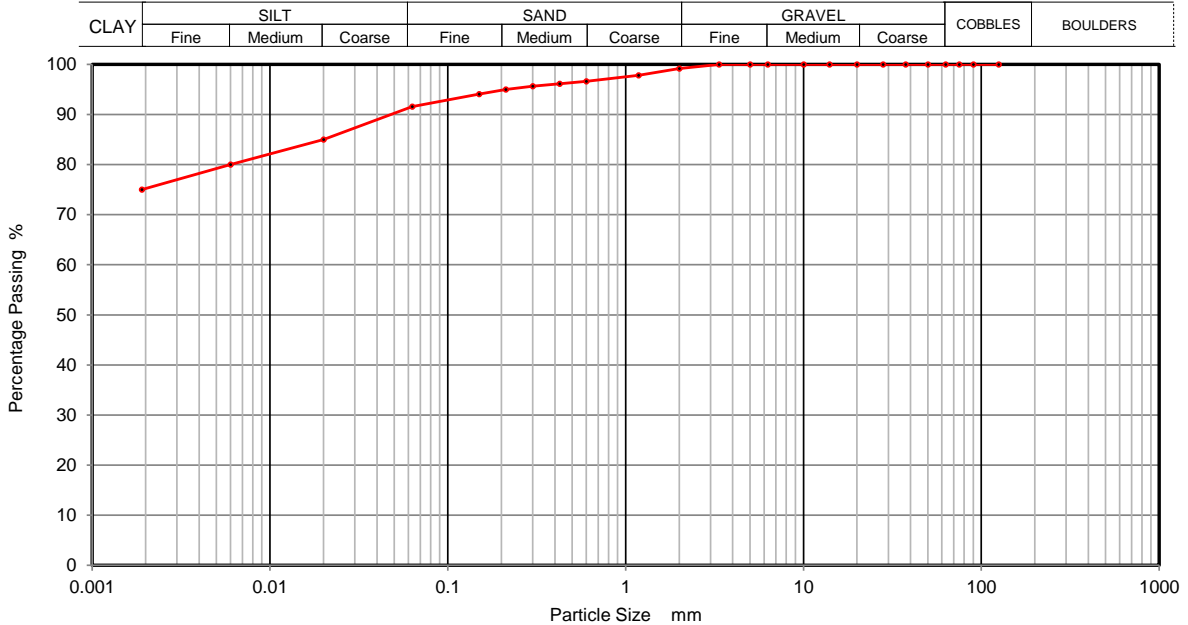
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH02
Sample No.	104
Depth Top	3.90
Depth Base	4.00
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	85
90	100	0.0060	80
75	100	0.0020	75
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	98		
0.6	97		
0.425	96		
0.3	96		
0.212	95		
0.15	94		
0.063	92		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	7
Silt	17
Clay	75

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



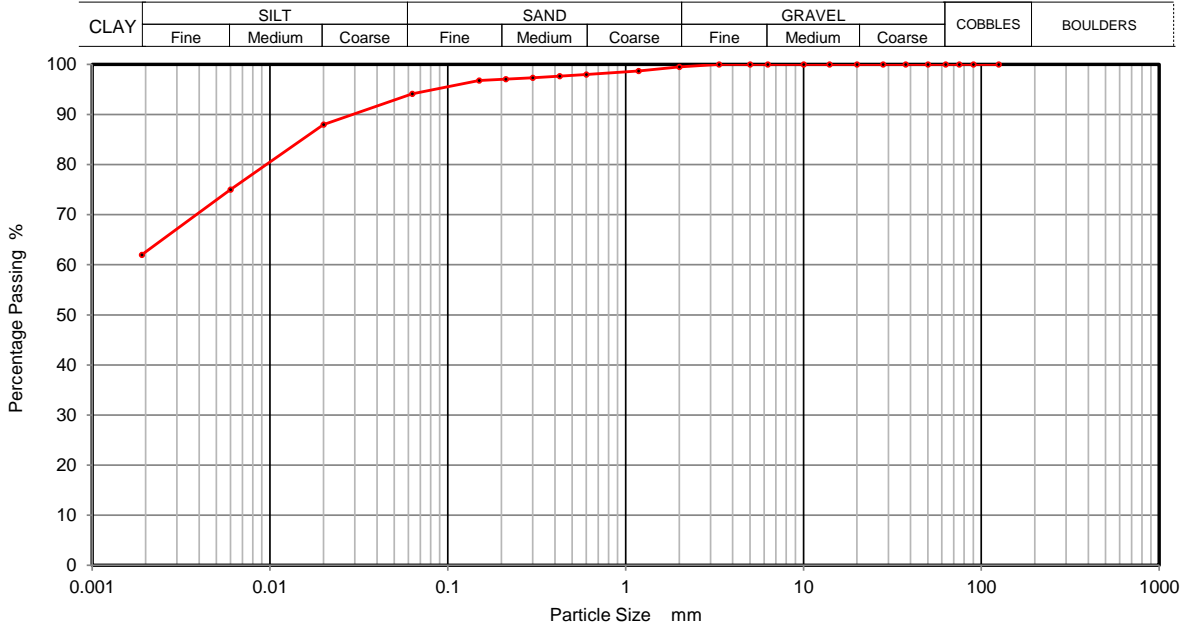
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH02
Sample No.	106
Depth Top	5.90
Depth Base	6.00
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	88
90	100	0.0060	75
75	100	0.0020	62
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.6	98		
0.425	98		
0.3	97		
0.212	97		
0.15	97		
0.063	94		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	5
Silt	32
Clay	62

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



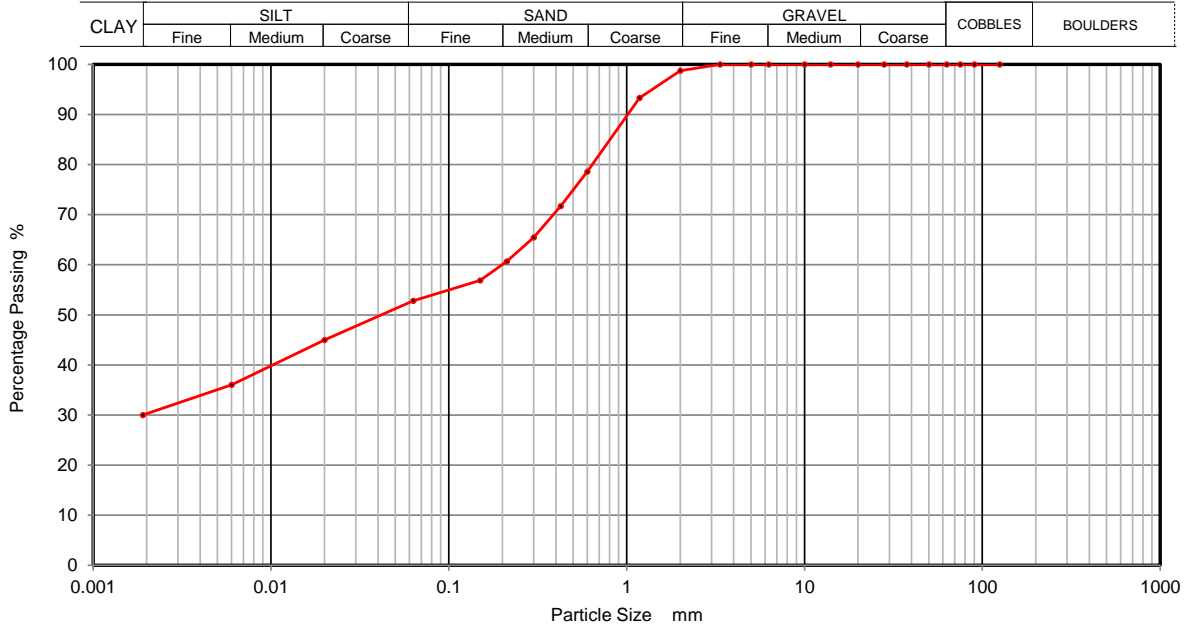
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH02
Sample No.	110
Depth Top	8.90
Depth Base	9.00
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	45
90	100	0.0060	36
75	100	0.0020	30
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	93		
0.6	79		
0.425	72		
0.3	65		
0.212	61		
0.15	57		
0.063	53		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	46
Silt	23
Clay	30

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



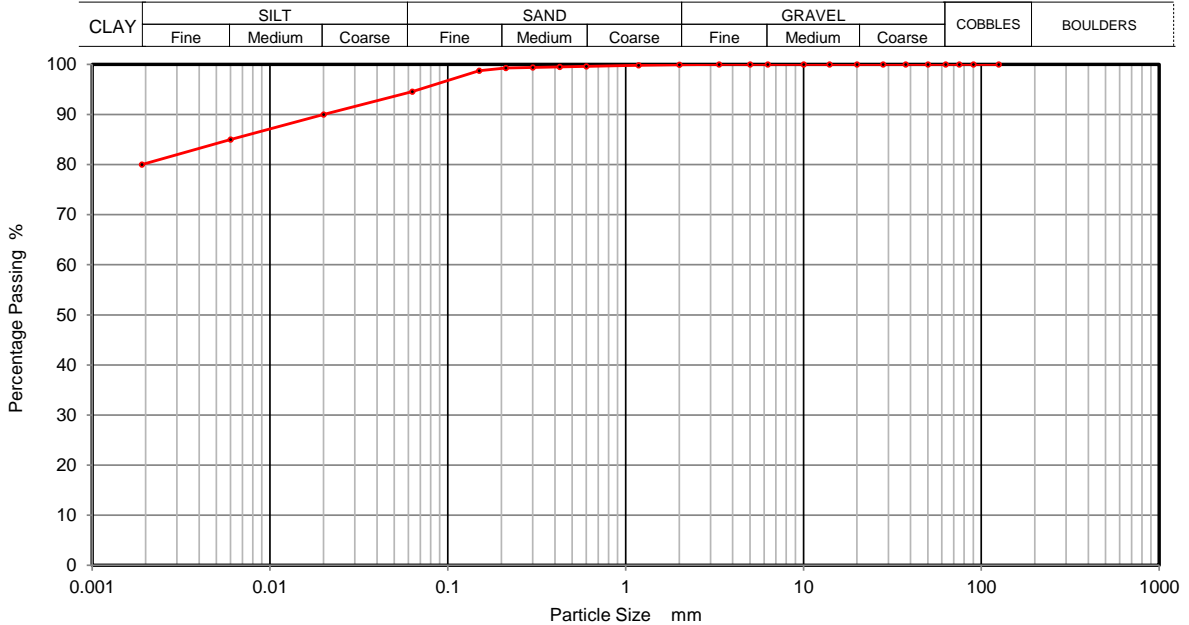
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH02
Sample No.	116
Depth Top	12.90
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	90
90	100	0.0060	85
75	100	0.0020	80
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	99		
0.15	99		
0.063	95		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	5
Silt	15
Clay	80

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



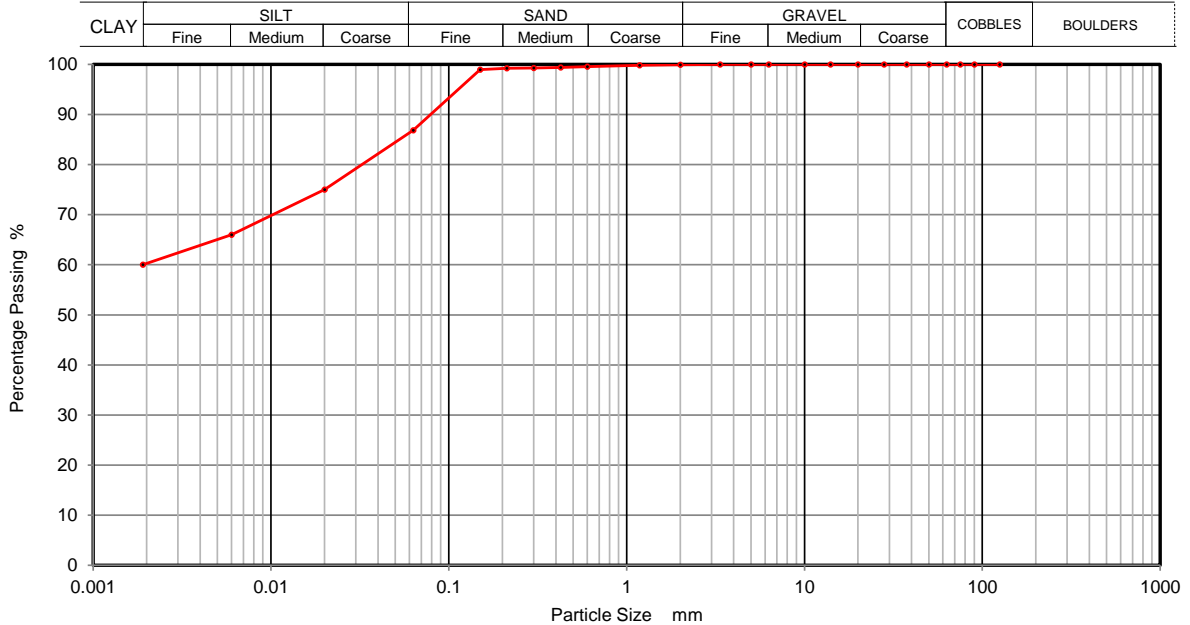
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH02
Sample No.	121
Depth Top	17.00
Depth Base	17.10
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	75
90	100	0.0060	66
75	100	0.0020	60
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	87		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	13
Silt	27
Clay	60

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



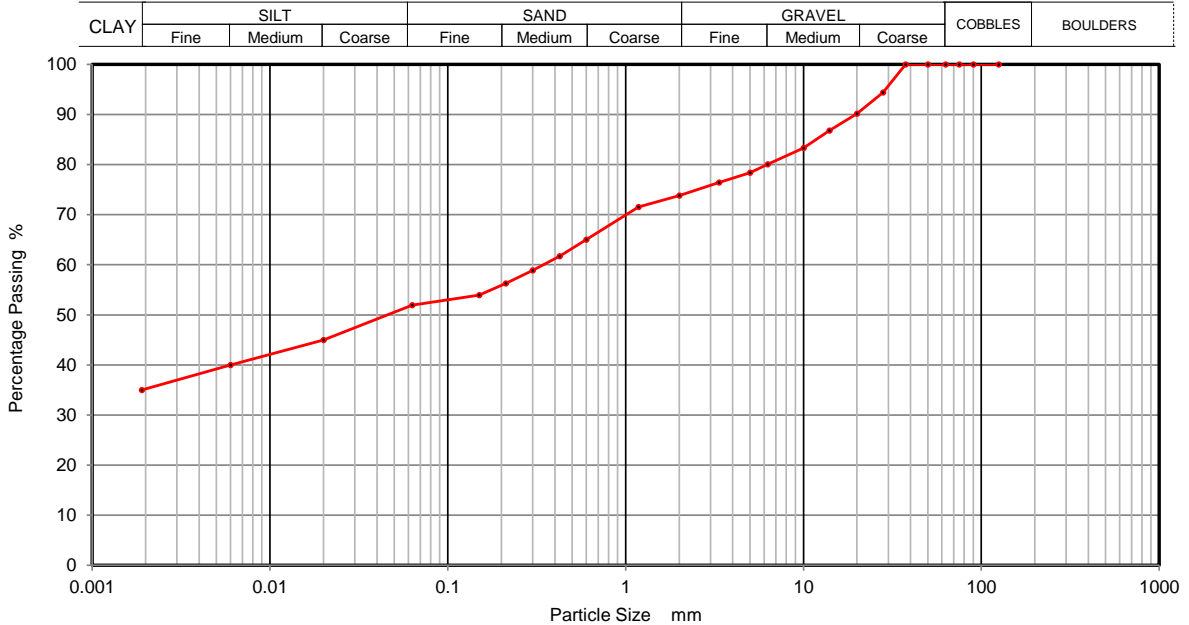
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH06
Sample No.	3
Depth Top	0.00
Depth Base	0.40
Sample Type	B

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	45
90	100	0.0060	40
75	100	0.0020	35
63	100		
50	100		
37.5	100		
28	94		
20	90		
14	87		
10	83		
6.3	80		
5	78		
3.35	76		
2	74		
1.18	72		
0.6	65		
0.425	62		
0.3	59		
0.212	56		
0.15	54		
0.063	52		

Sample Proportions	% dry mass
Cobbles	0
Gravel	26
Sand	22
Silt	17
Clay	35

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



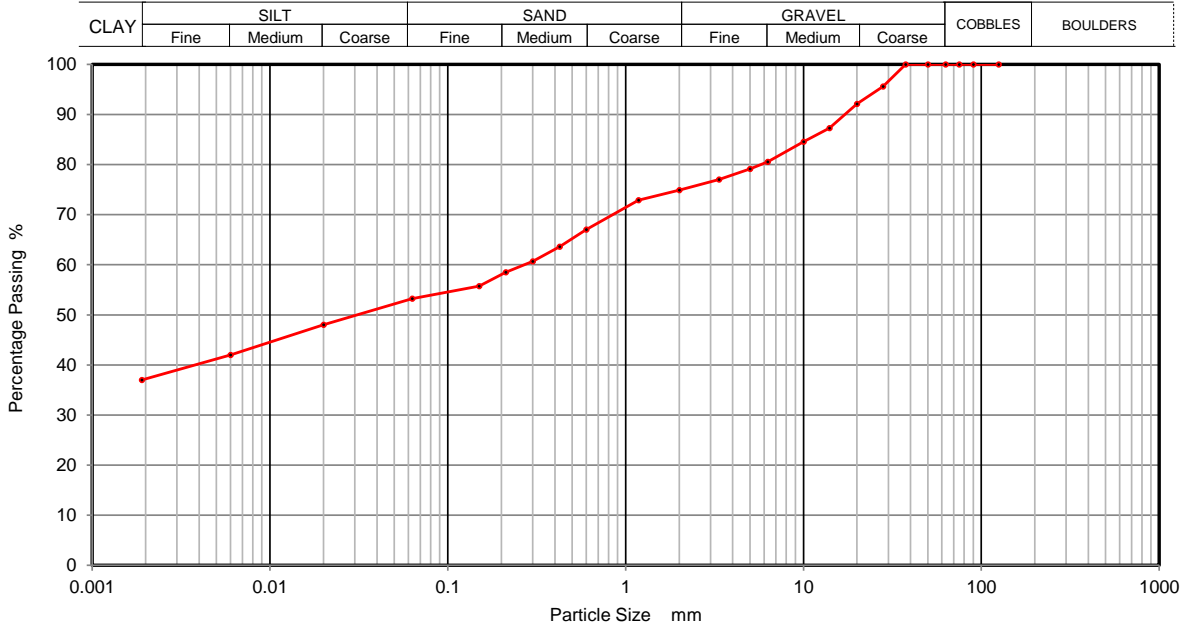
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH06
Sample No.	6
Depth Top	0.40
Depth Base	0.80
Sample Type	B

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	48
90	100	0.0060	42
75	100	0.0020	37
63	100		
50	100		
37.5	100		
28	96		
20	92		
14	87		
10	85		
6.3	81		
5	79		
3.35	77		
2	75		
1.18	73		
0.6	67		
0.425	64		
0.3	61		
0.212	58		
0.15	56		
0.063	53		

Sample Proportions	% dry mass
Cobbles	0
Gravel	25
Sand	22
Silt	16
Clay	37

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



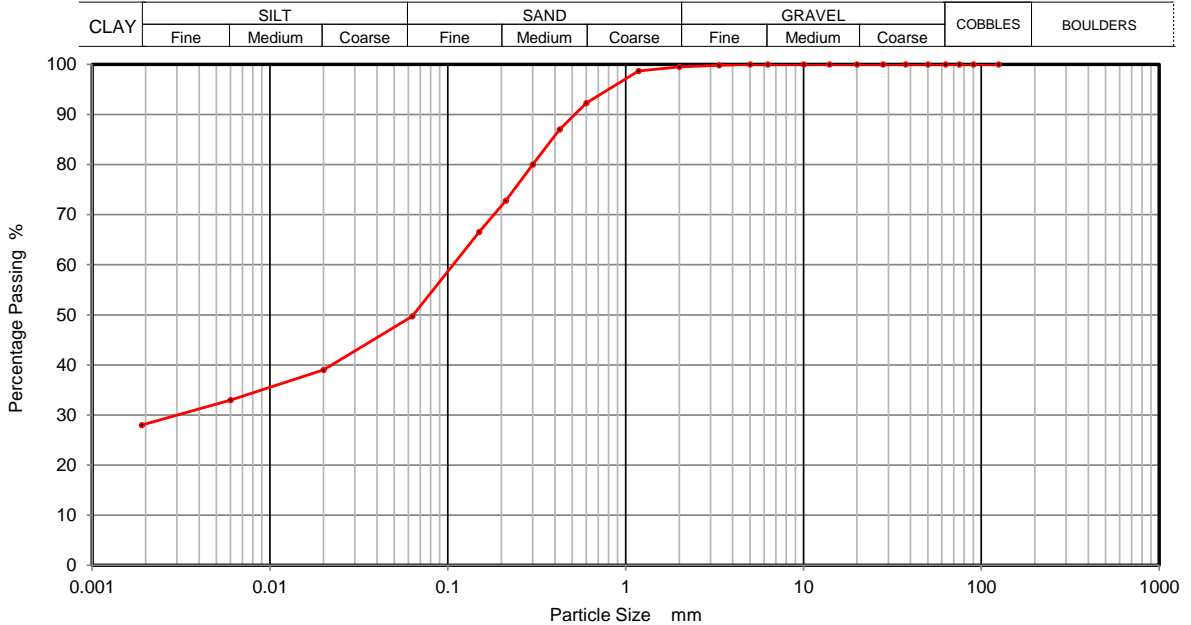
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH06
Sample No.	102
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	39
90	100	0.0060	33
75	100	0.0020	28
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	92		
0.425	87		
0.3	80		
0.212	73		
0.15	67		
0.063	50		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	50
Silt	22
Clay	28

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



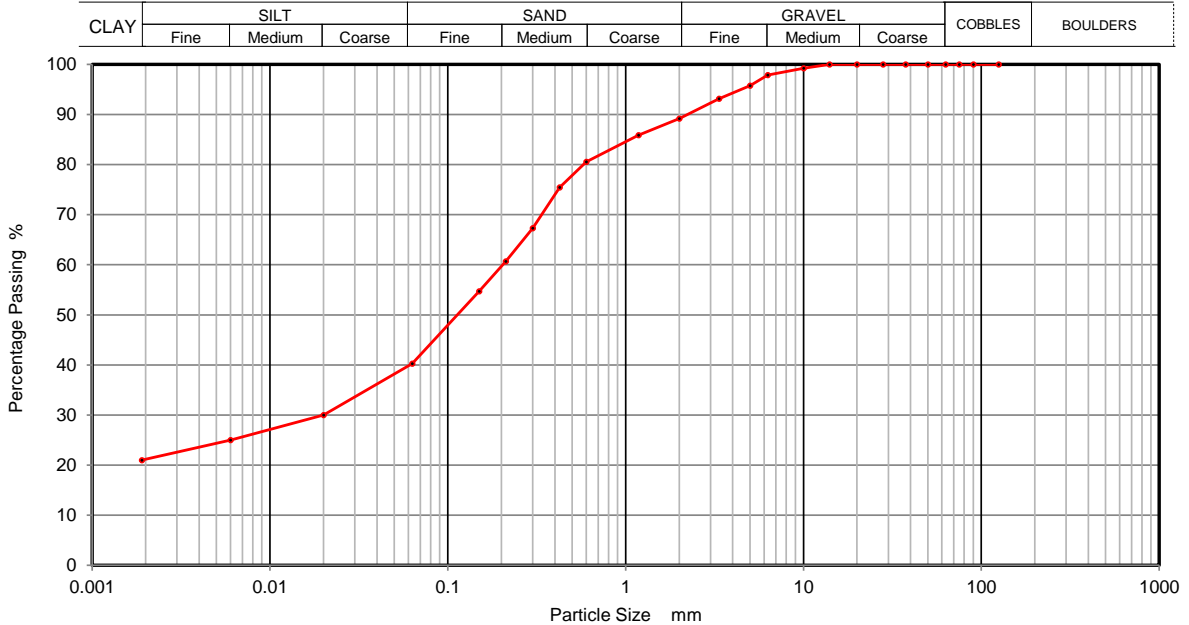
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH06
Sample No.	103
Depth Top	3.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	30
90	100	0.0060	25
75	100	0.0020	21
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	98		
5	96		
3.35	93		
2	89		
1.18	86		
0.6	81		
0.425	75		
0.3	67		
0.212	61		
0.15	55		
0.063	40		

Sample Proportions	% dry mass
Cobbles	0
Gravel	11
Sand	49
Silt	19
Clay	21

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



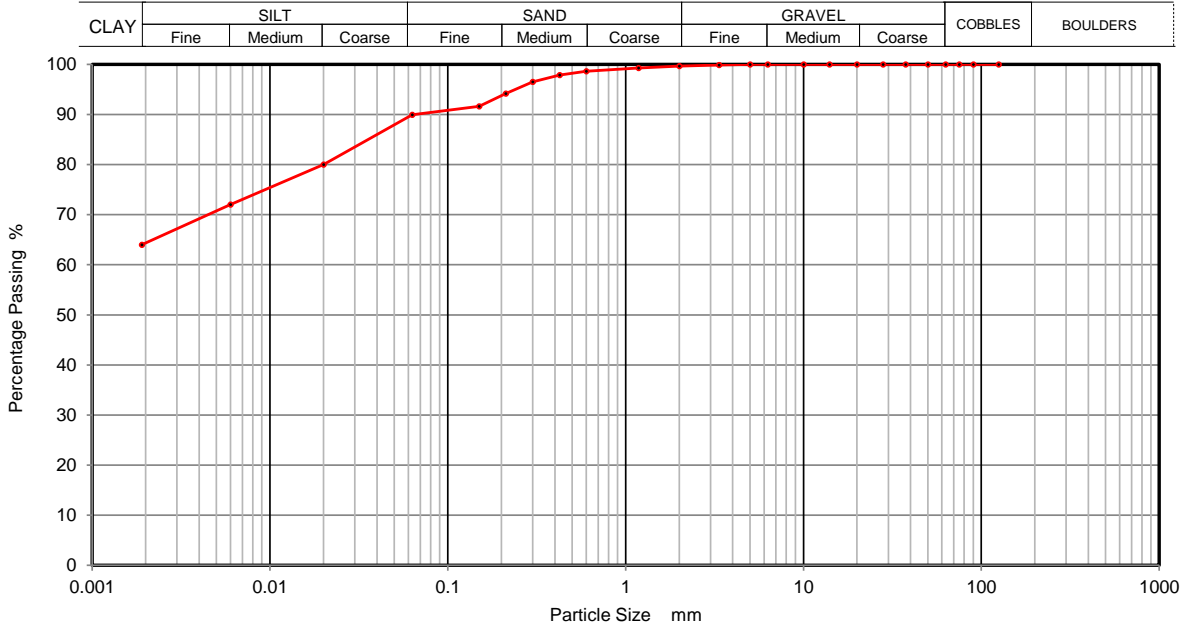
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH06
Sample No.	104
Depth Top	5.60
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	80
90	100	0.0060	72
75	100	0.0020	64
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	98		
0.3	97		
0.212	94		
0.15	92		
0.063	90		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	10
Silt	26
Clay	64

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



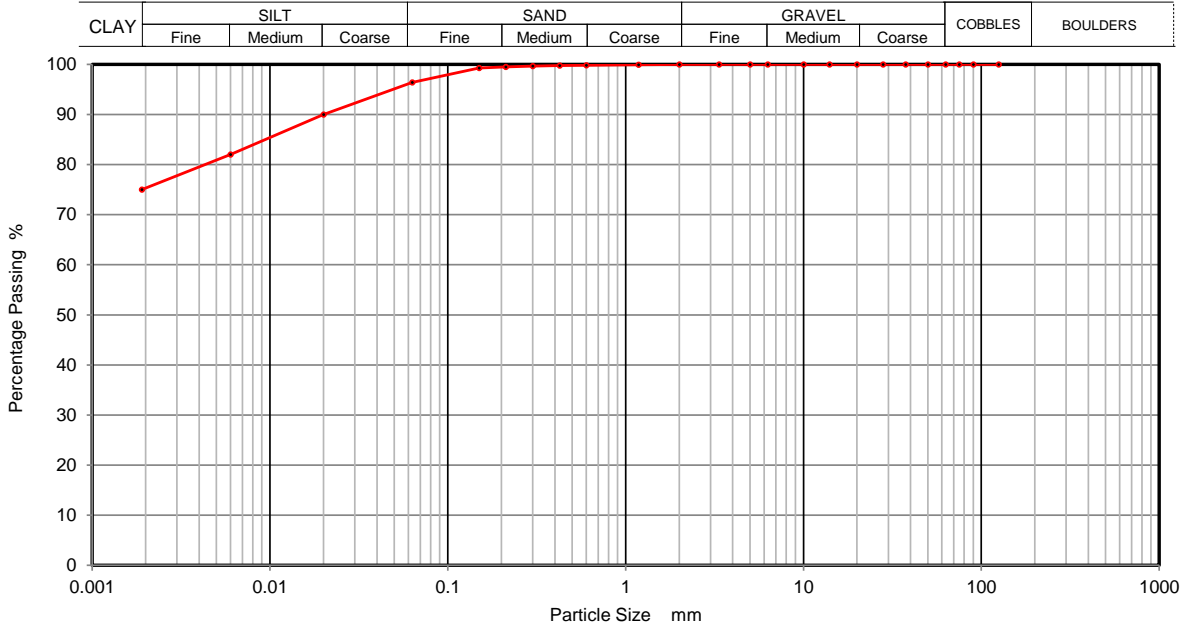
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATK_BH06
Sample No.	107
Depth Top	10.10
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	90
90	100	0.0060	82
75	100	0.0020	75
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	99		
0.063	96		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	4
Silt	21
Clay	75

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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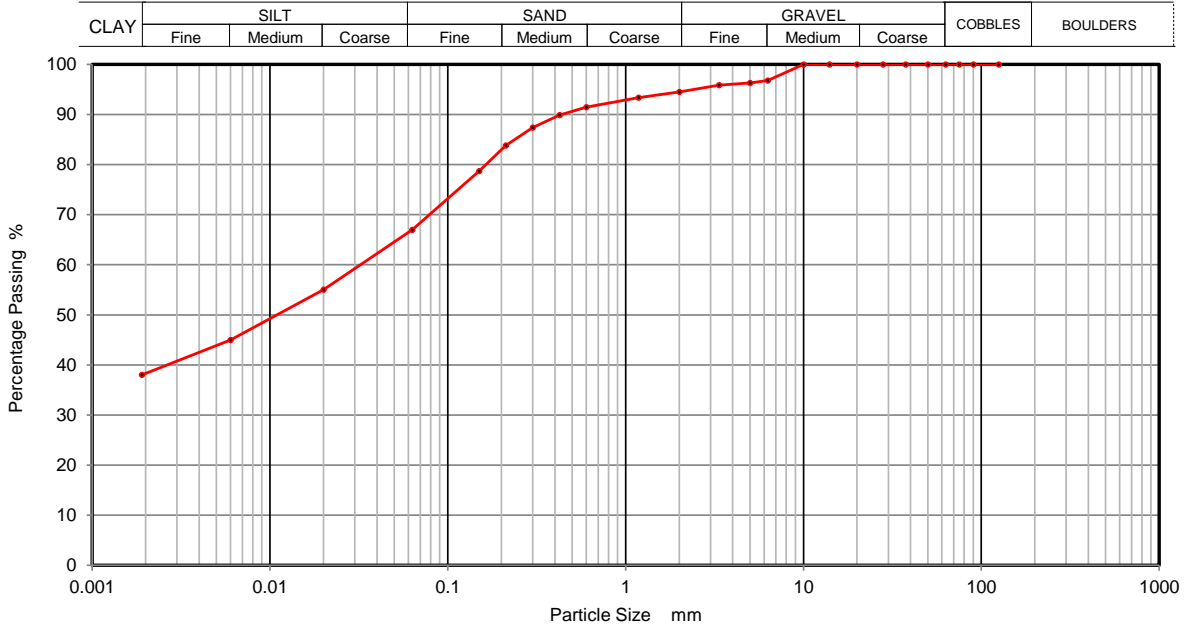
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH05
Sample No.	101
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	55
90	100	0.0060	45
75	100	0.0020	38
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	97		
5	96		
3.35	96		
2	95		
1.18	93		
0.6	91		
0.425	90		
0.3	87		
0.212	84		
0.15	79		
0.063	67		

Sample Proportions	% dry mass
Cobbles	0
Gravel	5
Sand	28
Silt	29
Clay	38

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



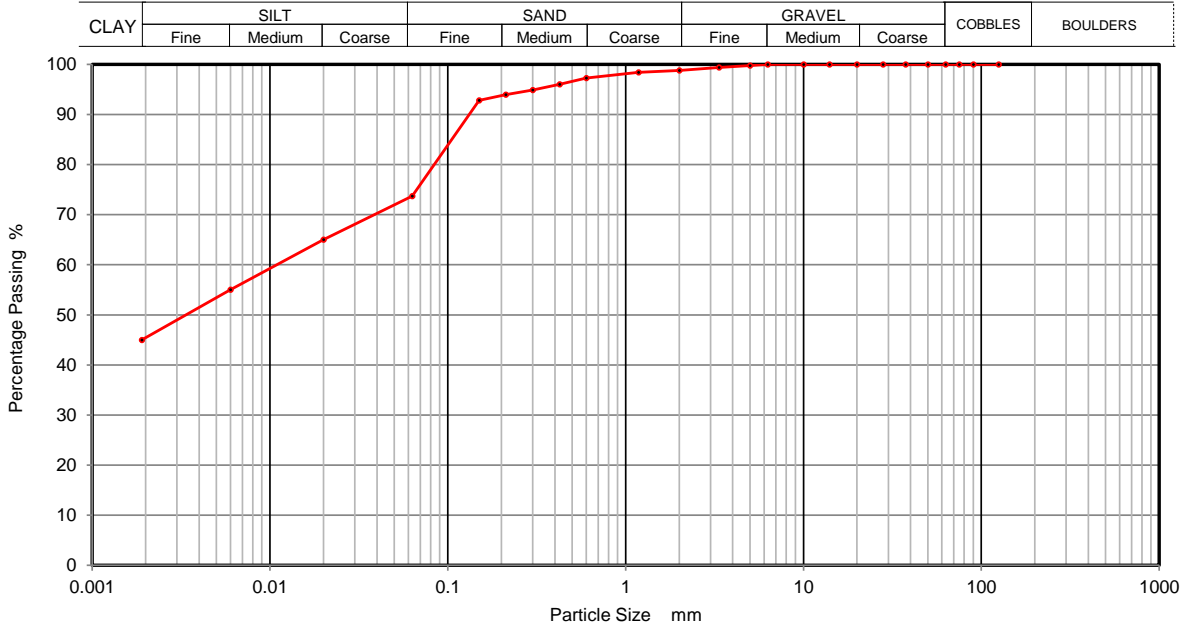
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH05
Sample No.	103
Depth Top	4.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	65
90	100	0.0060	55
75	100	0.0020	45
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	98		
0.6	97		
0.425	96		
0.3	95		
0.212	94		
0.15	93		
0.063	74		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	25
Silt	29
Clay	45

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



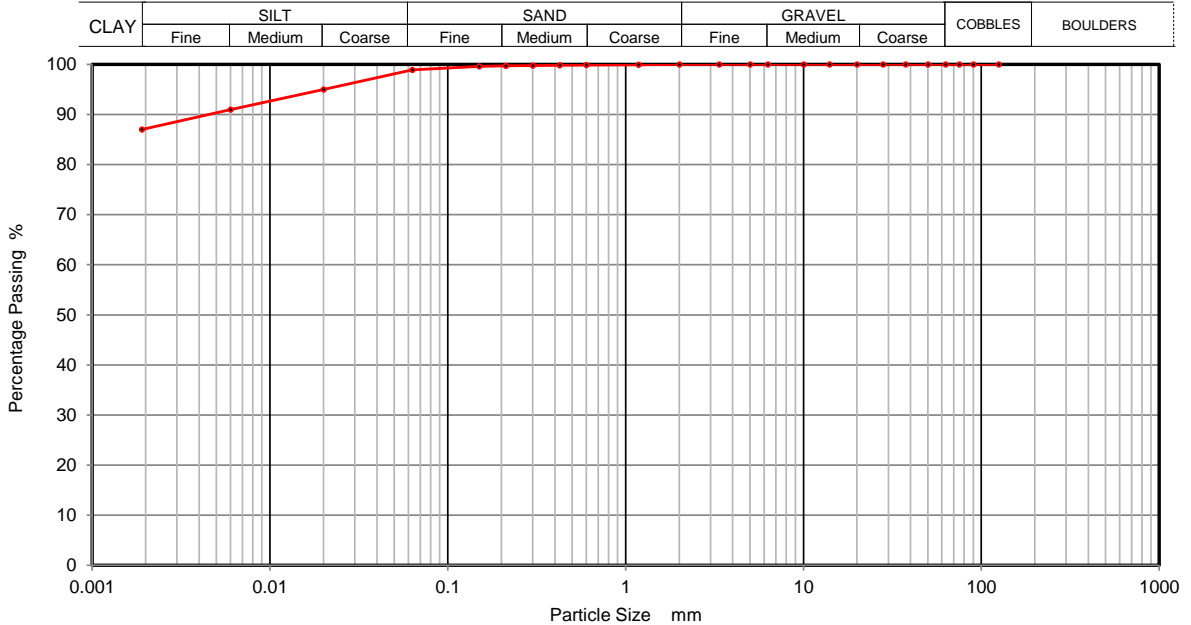
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	64154
Borehole/Pit No.	ATKRD_BH05
Sample No.	106
Depth Top	6.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	95
90	100	0.0060	91
75	100	0.0020	87
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	100		
0.063	99		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	1
Silt	12
Clay	87

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator



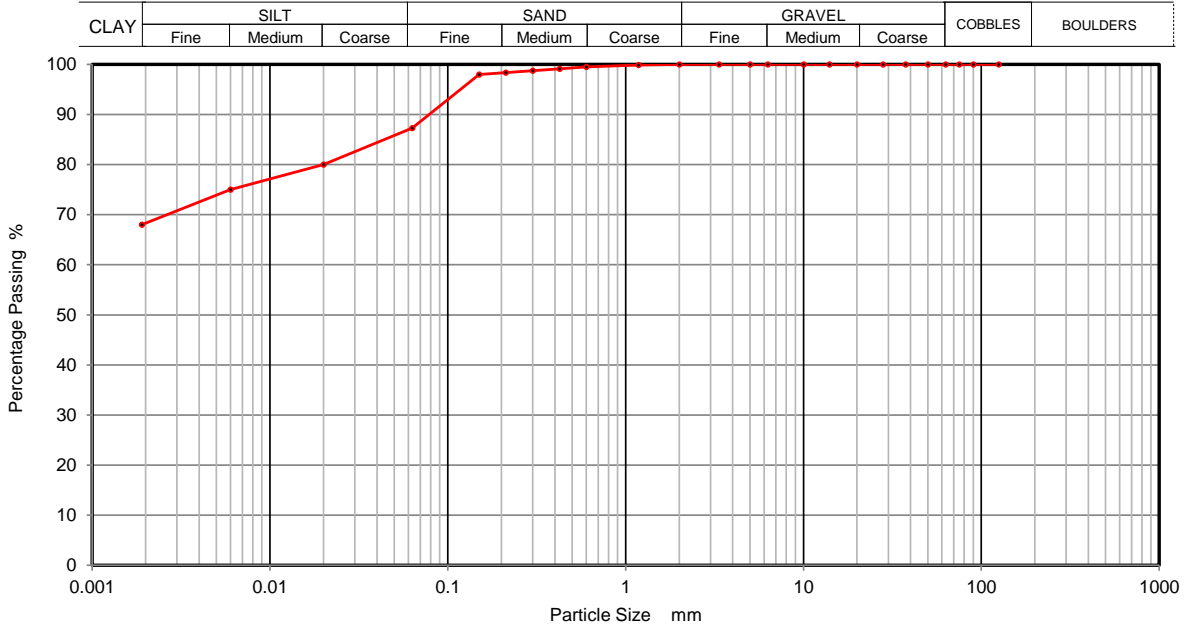
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH05
Sample No.	110
Depth Top	10.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	80
90	100	0.0060	75
75	100	0.0020	68
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	98		
0.15	98		
0.063	87		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	13
Silt	19
Clay	68

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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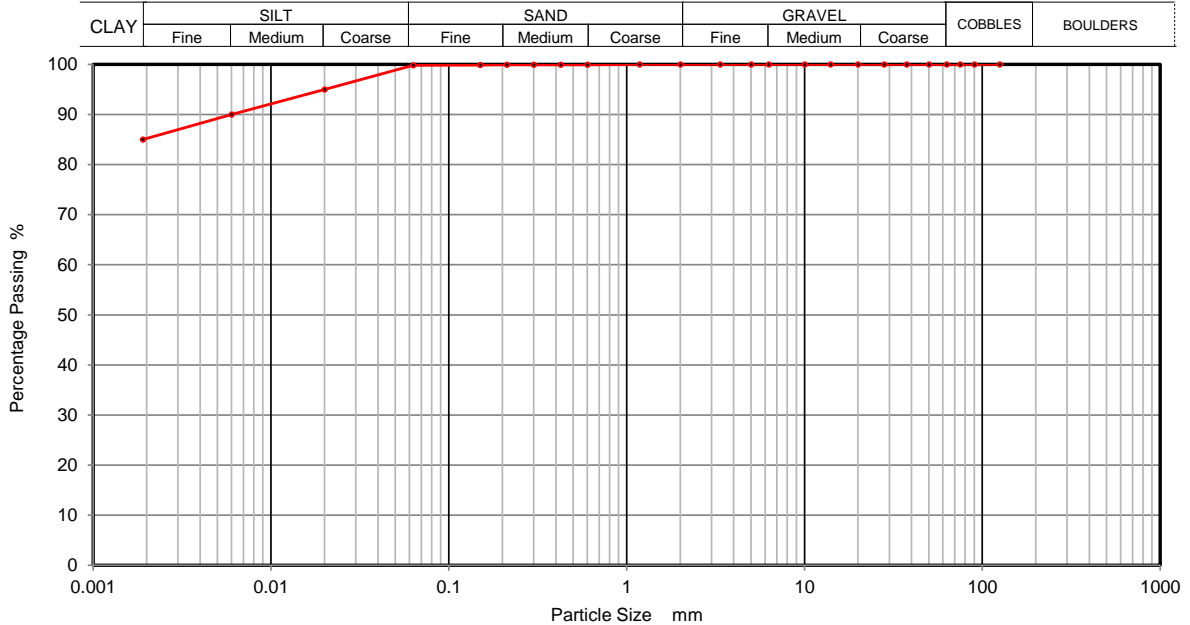
2788



**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH06
Sample No.	101
Depth Top	2.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	95
90	100	0.0060	90
75	100	0.0020	85
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	100		
0.063	100		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	0
Silt	15
Clay	85

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]

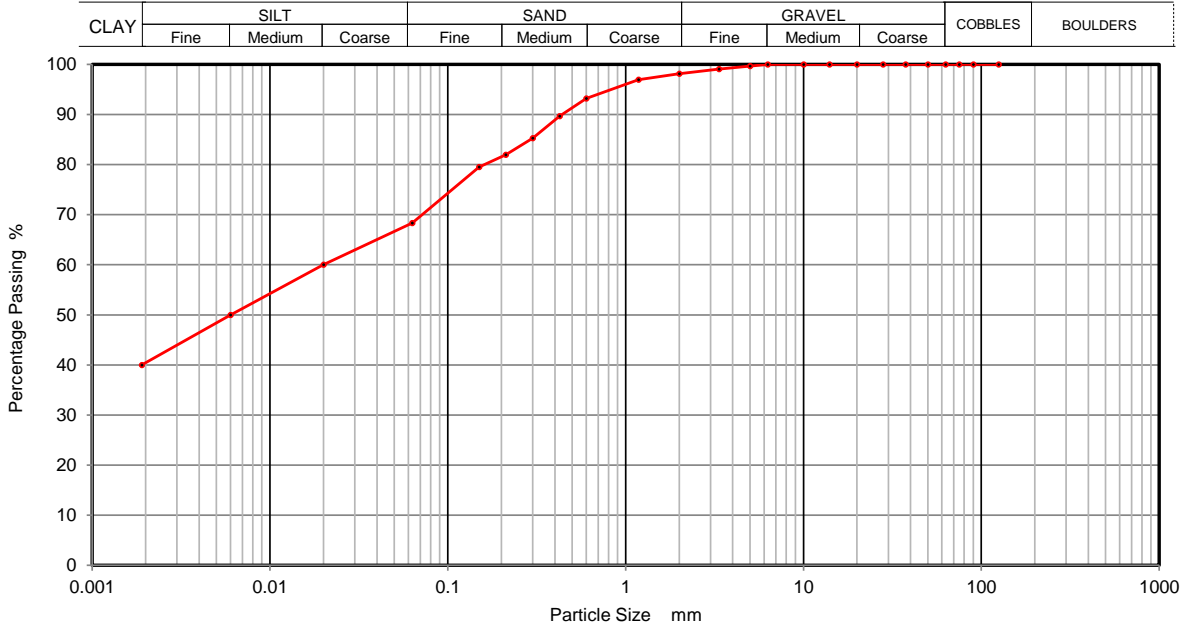




**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH06
Sample No.	102
Depth Top	3.70
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	60
90	100	0.0060	50
75	100	0.0020	40
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	98		
1.18	97		
0.6	93		
0.425	90		
0.3	85		
0.212	82		
0.15	80		
0.063	68		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	30
Silt	28
Clay	40

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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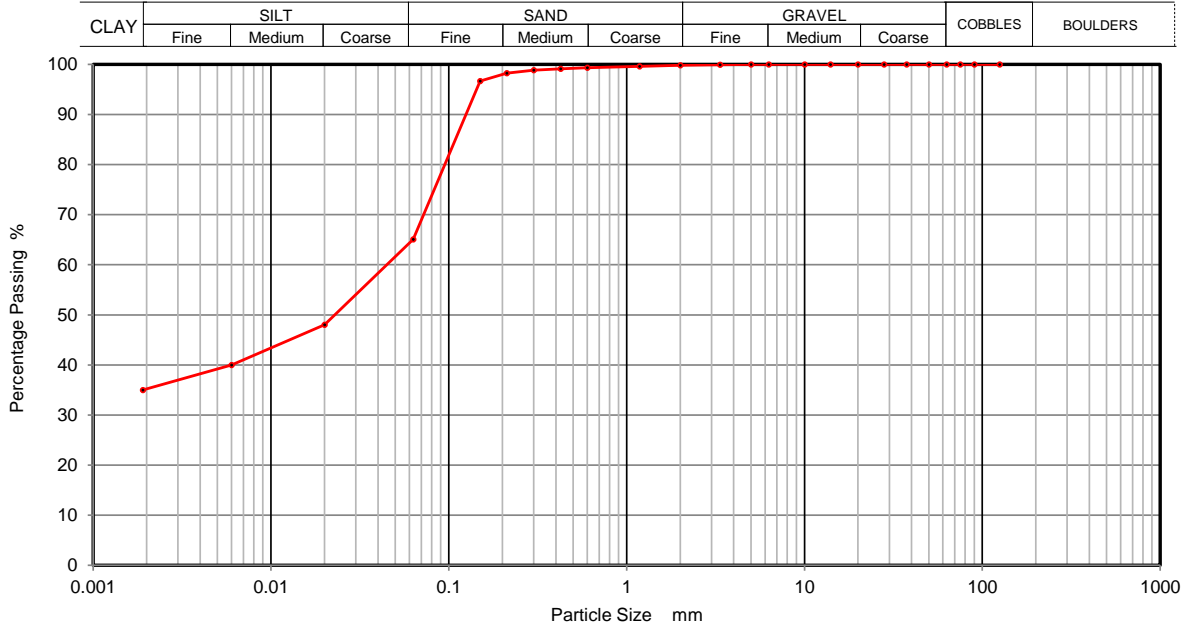
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	64154
Borehole/Pit No.	ATKRD_BH06
Sample No.	104
Depth Top	6.25
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	48
90	100	0.0060	40
75	100	0.0020	35
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	98		
0.15	97		
0.063	65		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	35
Silt	30
Clay	35

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator



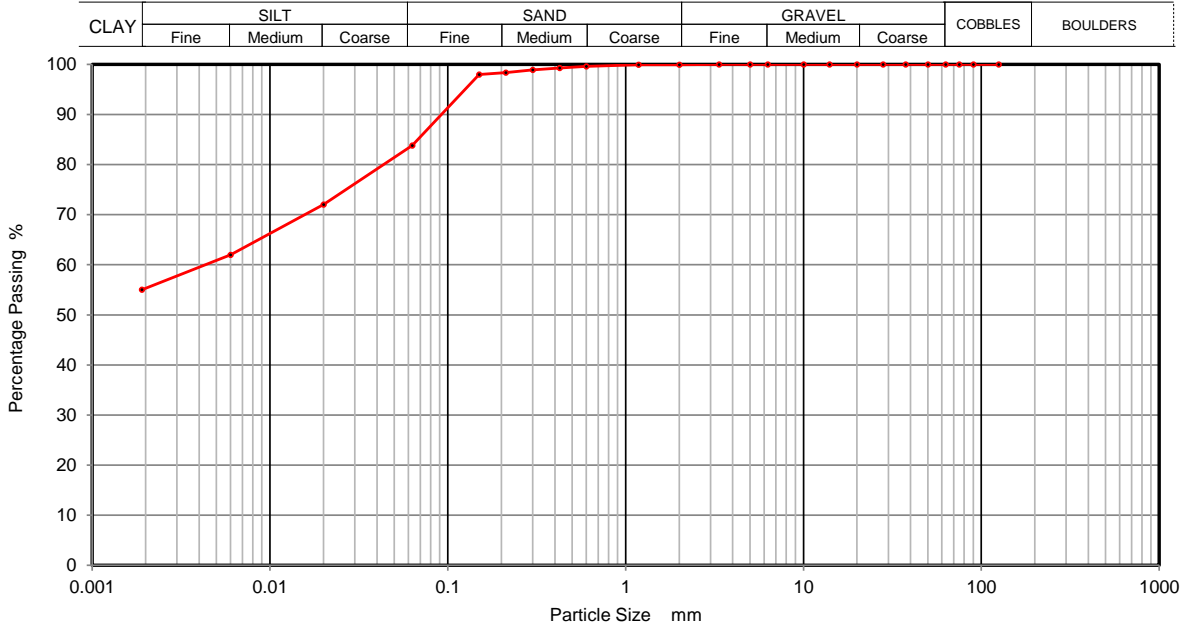
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH06
Sample No.	107
Depth Top	9.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	72
90	100	0.0060	62
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	99		
0.212	98		
0.15	98		
0.063	84		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	16
Silt	29
Clay	55

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



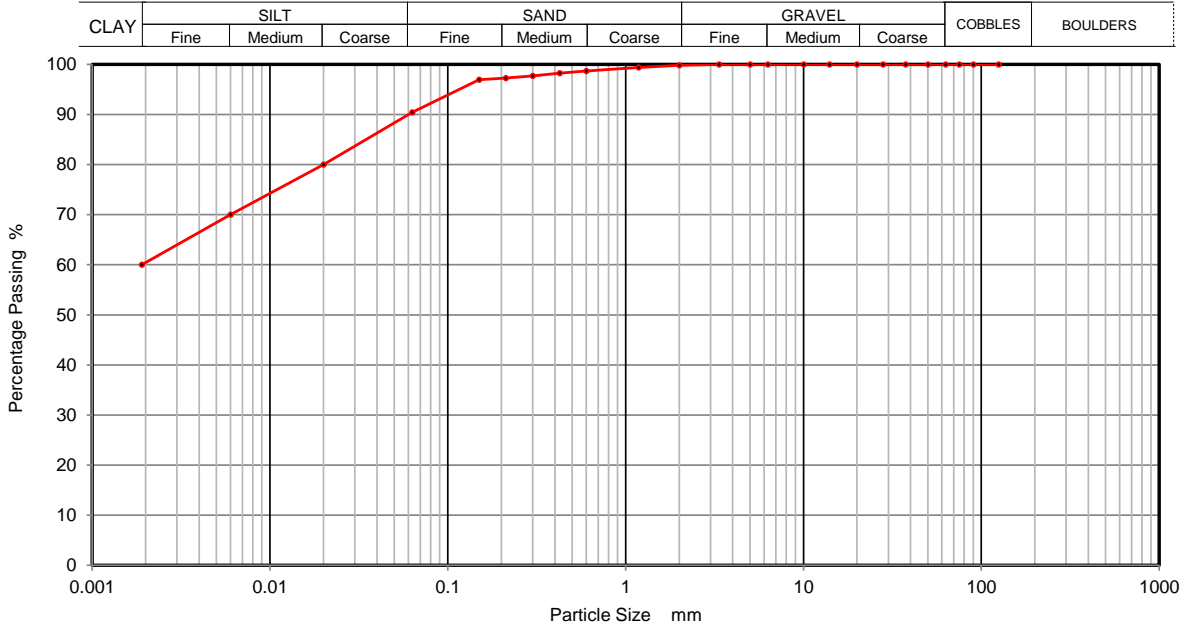
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH06
Sample No.	110
Depth Top	11.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	80
90	100	0.0060	70
75	100	0.0020	60
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	98		
0.3	98		
0.212	97		
0.15	97		
0.063	90		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	10
Silt	30
Clay	60

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



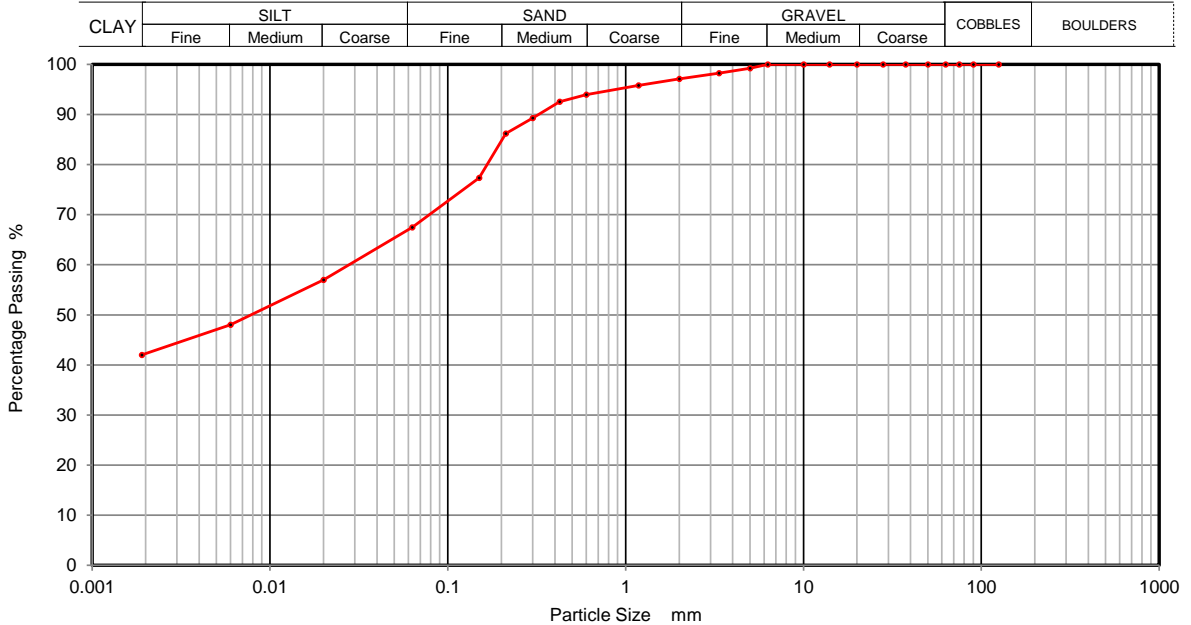
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	64154
Borehole/Pit No.	ATKRD_BH07
Sample No.	1
Depth Top	0.30
Depth Base	1.10
Sample Type	B

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	57
90	100	0.0060	48
75	100	0.0020	42
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	98		
2	97		
1.18	96		
0.6	94		
0.425	93		
0.3	89		
0.212	86		
0.15	77		
0.063	67		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	30
Silt	25
Clay	42

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]



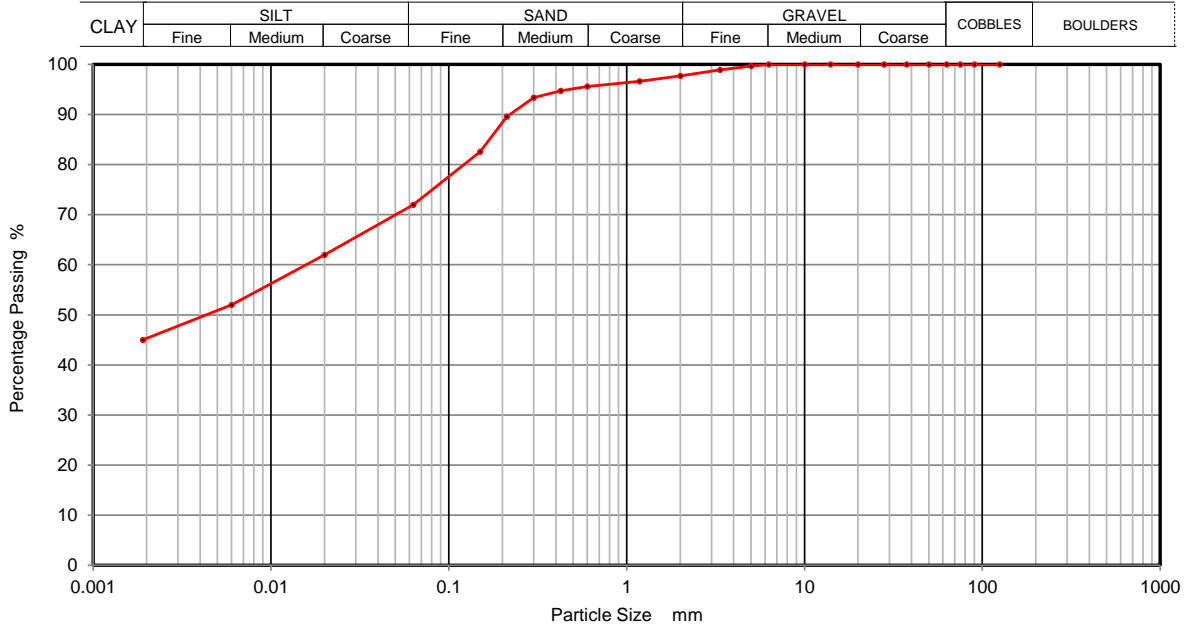
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	64154
Borehole/Pit No.	ATKRD_BH07
Sample No.	103
Depth Top	1.80
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	62
90	100	0.0060	52
75	100	0.0020	45
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	98		
1.18	97		
0.6	96		
0.425	95		
0.3	93		
0.212	90		
0.15	83		
0.063	72		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	26
Silt	27
Clay	45

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator



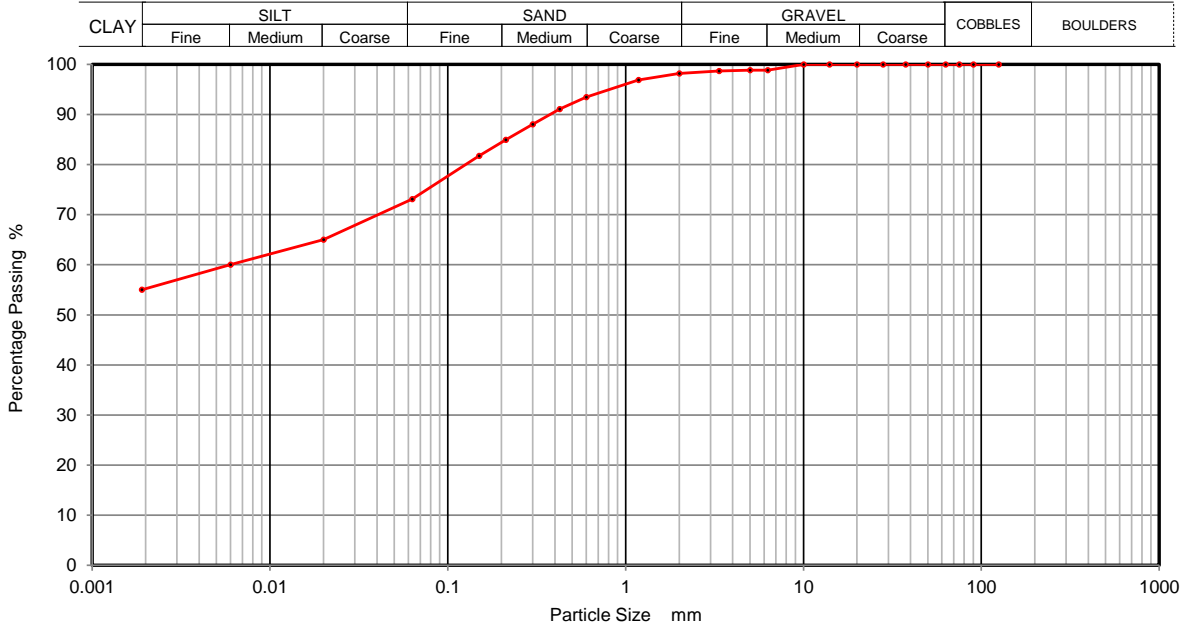
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH07
Sample No.	106
Depth Top	3.65
Depth Base	4.00
Sample Type	CS

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	65
90	100	0.0060	60
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	99		
2	98		
1.18	97		
0.6	93		
0.425	91		
0.3	88		
0.212	85		
0.15	82		
0.063	73		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	25
Silt	18
Clay	55

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



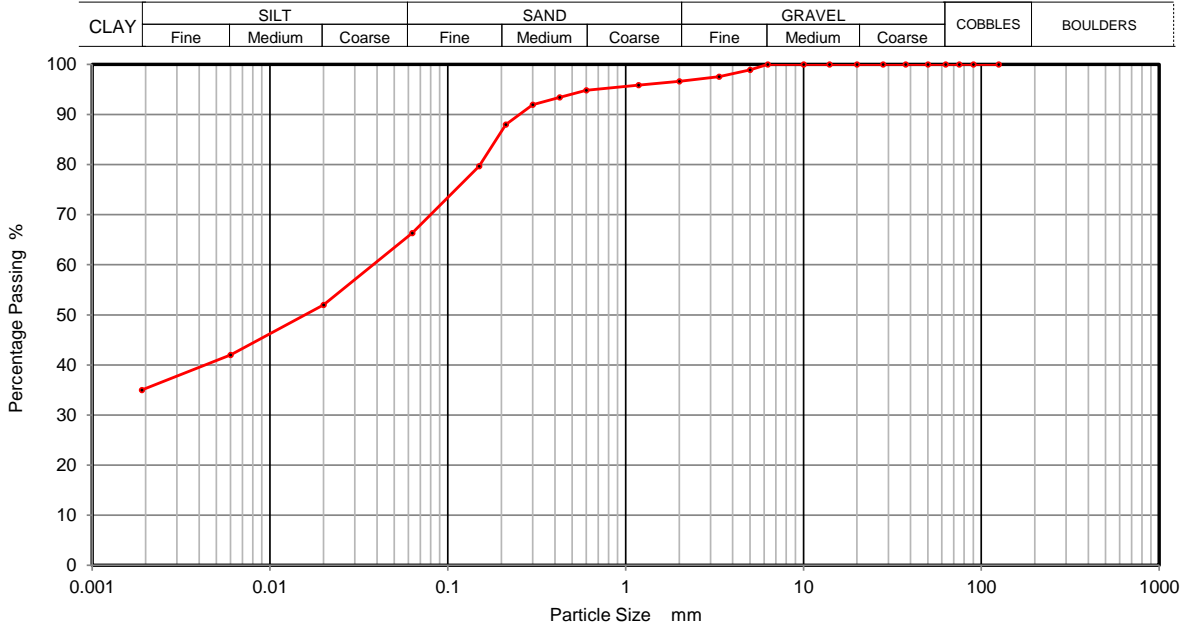
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH07
Sample No.	111
Depth Top	5.60
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	52
90	100	0.0060	42
75	100	0.0020	35
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	98		
2	97		
1.18	96		
0.6	95		
0.425	93		
0.3	92		
0.212	88		
0.15	80		
0.063	66		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	31
Silt	31
Clay	35

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



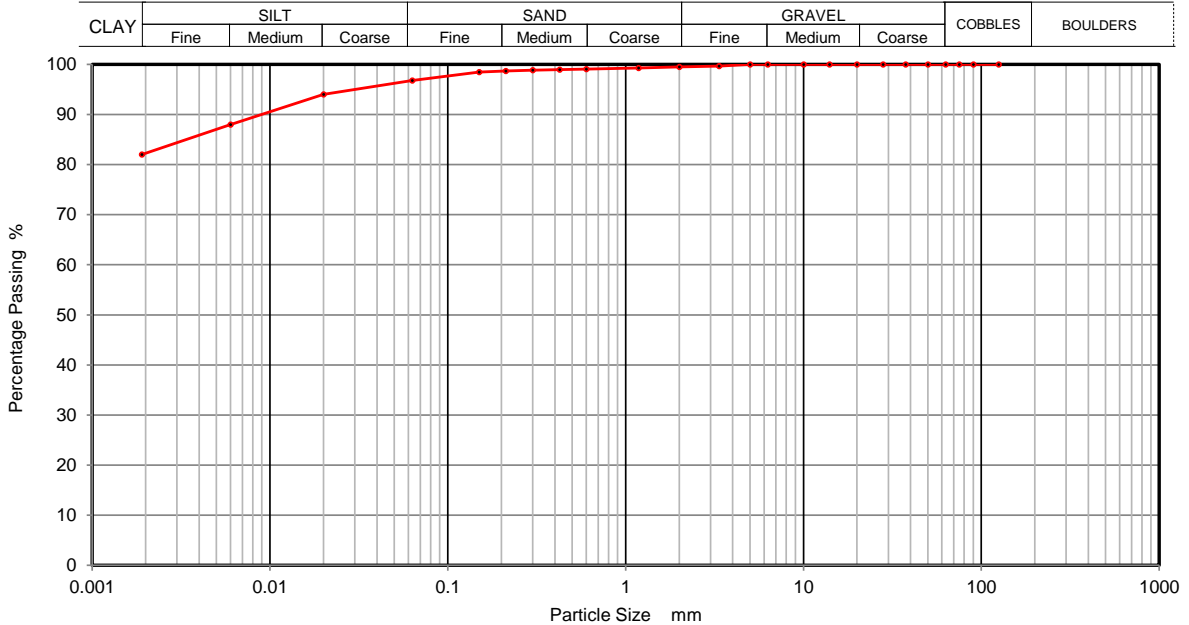
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH07
Sample No.	118
Depth Top	11.10
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	94
90	100	0.0060	88
75	100	0.0020	82
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	3
Silt	15
Clay	82

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



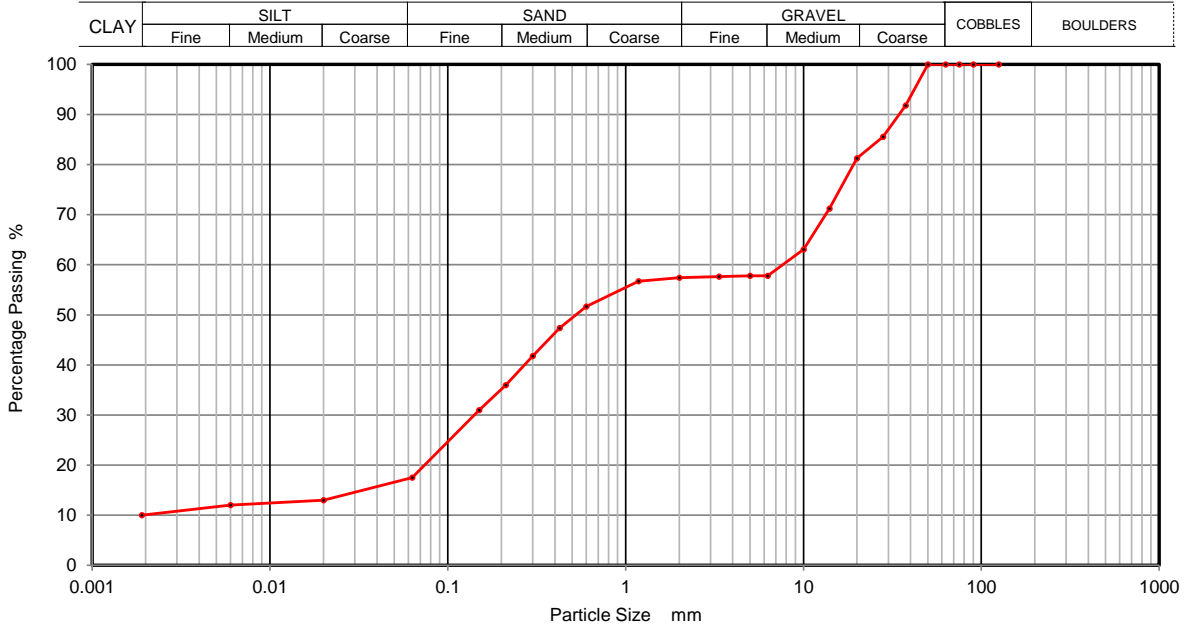
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH10
Sample No.	2
Depth Top	0.20
Depth Base	0.30
Sample Type	B

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	13
90	100	0.0060	12
75	100	0.0020	10
63	100		
50	100		
37.5	92		
28	86		
20	81		
14	71		
10	63		
6.3	58		
5	58		
3.35	58		
2	57		
1.18	57		
0.6	52		
0.425	47		
0.3	42		
0.212	36		
0.15	31		
0.063	18		

Sample Proportions	% dry mass
Cobbles	0
Gravel	43
Sand	39
Silt	8
Clay	10

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



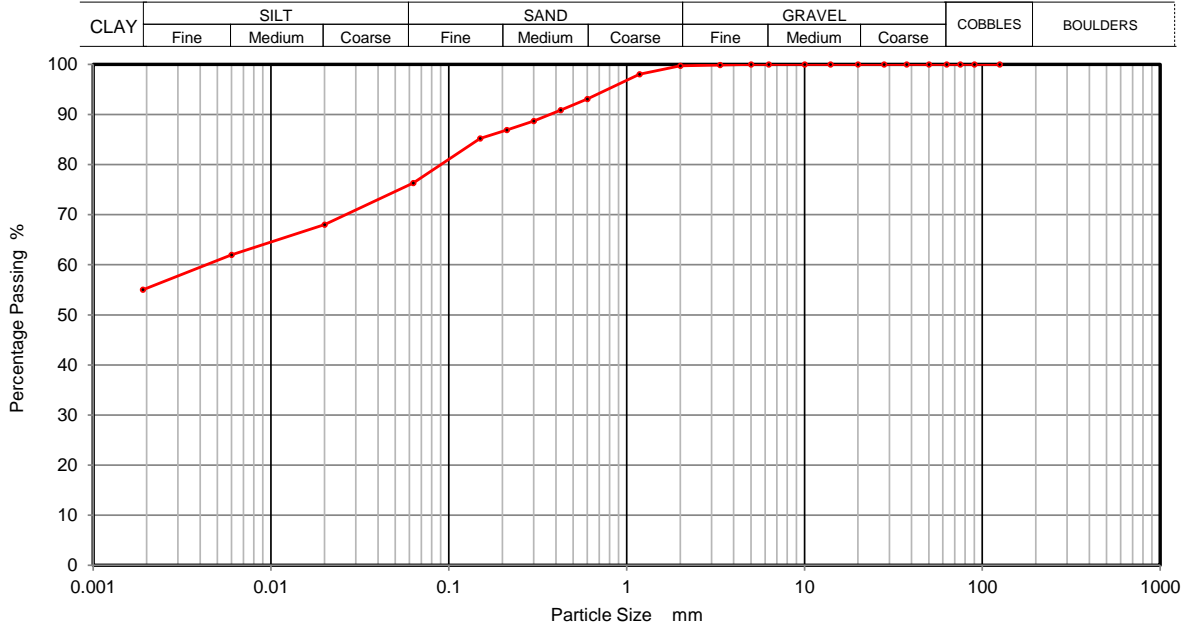
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PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Contract Number	64154
Borehole/Pit No.	ATKRD_BH10
Sample No.	4
Depth Top	2.45
Depth Base	2.50
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	68
90	100	0.0060	62
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	98		
0.6	93		
0.425	91		
0.3	89		
0.212	87		
0.15	85		
0.063	76		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	24
Silt	21
Clay	55

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operator
 [Redacted]



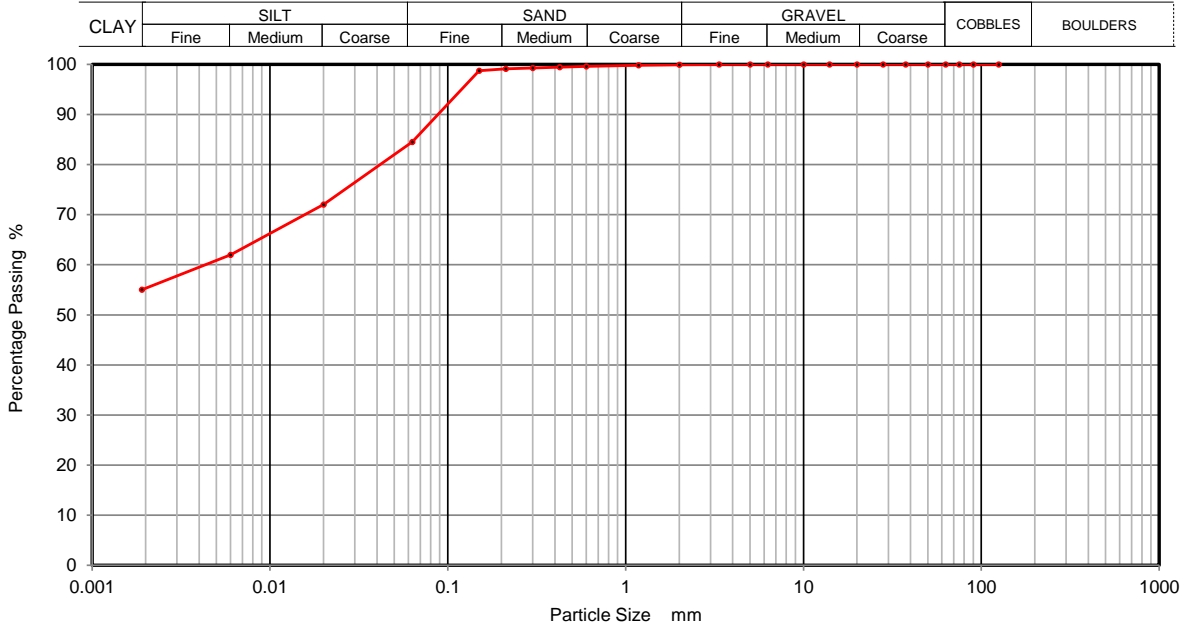
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH10
Sample No.	8
Depth Top	4.00
Depth Base	4.35
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	72
90	100	0.0060	62
75	100	0.0020	55
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	85		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	15
Silt	30
Clay	55

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



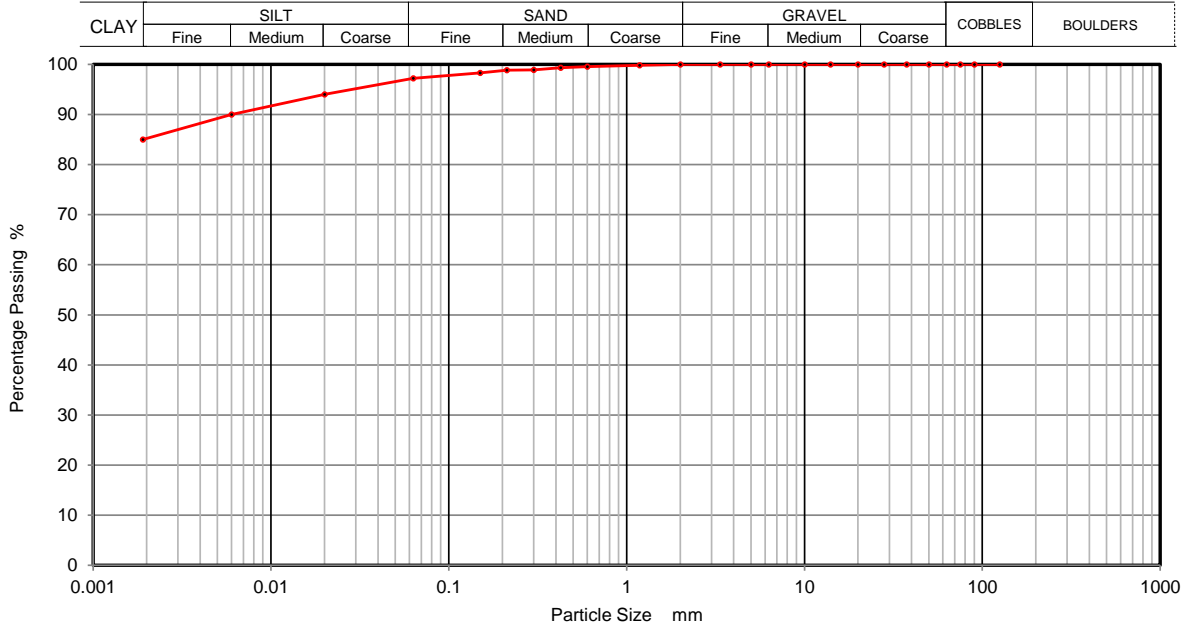
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH10
Sample No.	101
Depth Top	6.41
Depth Base	6.60
Sample Type	CS

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	94
90	100	0.0060	90
75	100	0.0020	85
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	99		
0.212	99		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	3
Silt	12
Clay	85

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



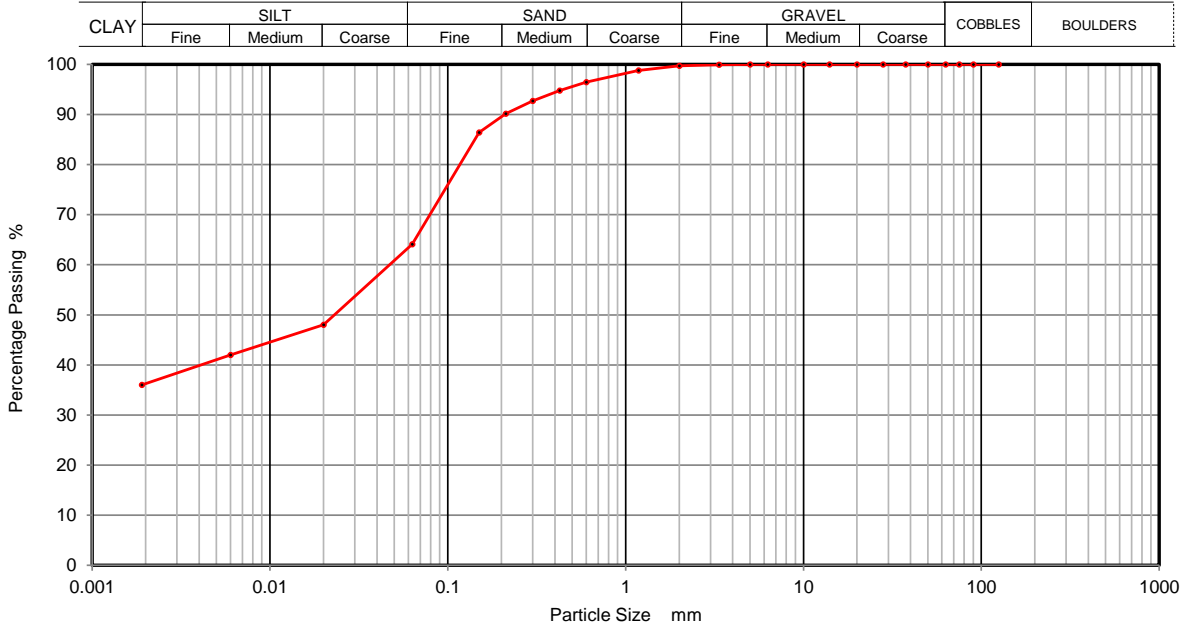
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH11
Sample No.	101
Depth Top	2.70
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	48
90	100	0.0060	42
75	100	0.0020	36
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	96		
0.425	95		
0.3	93		
0.212	90		
0.15	86		
0.063	64		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	36
Silt	28
Clay	36

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



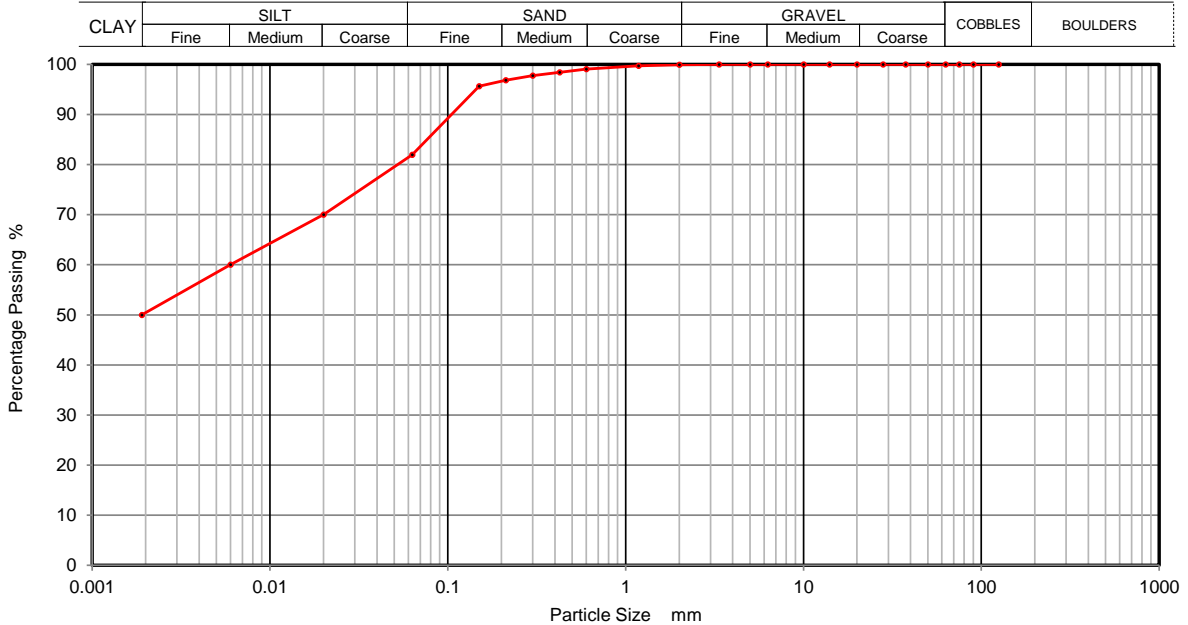
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH11
Sample No.	103
Depth Top	5.00
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	70
90	100	0.0060	60
75	100	0.0020	50
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	98		
0.3	98		
0.212	97		
0.15	96		
0.063	82		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	18
Silt	32
Clay	50

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
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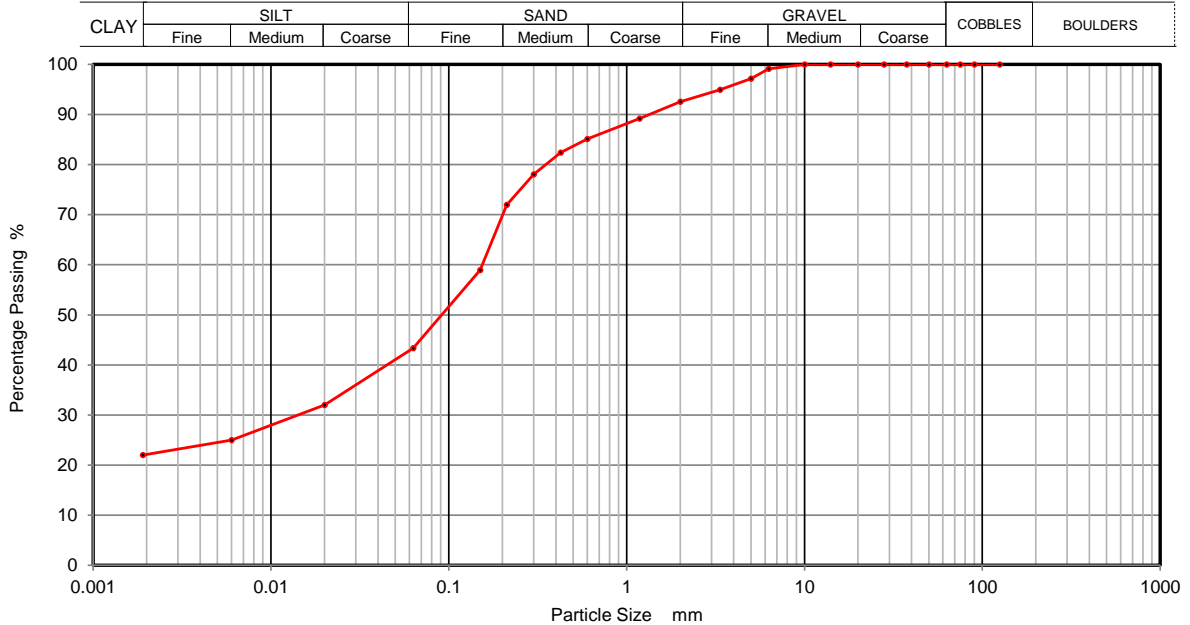
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**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4**

Contract Number	64154
Borehole/Pit No.	ATKRD_BH11
Sample No.	107
Depth Top	8.50
Depth Base	
Sample Type	D

Project Name	Lyneham Banks
Soil Description	*See sample description sheet
Date Tested	09/02/2023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	32
90	100	0.0060	25
75	100	0.0020	22
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	97		
3.35	95		
2	93		
1.18	89		
0.6	85		
0.425	82		
0.3	78		
0.212	72		
0.15	59		
0.063	43		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	50
Silt	21
Clay	22

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
[Redacted]



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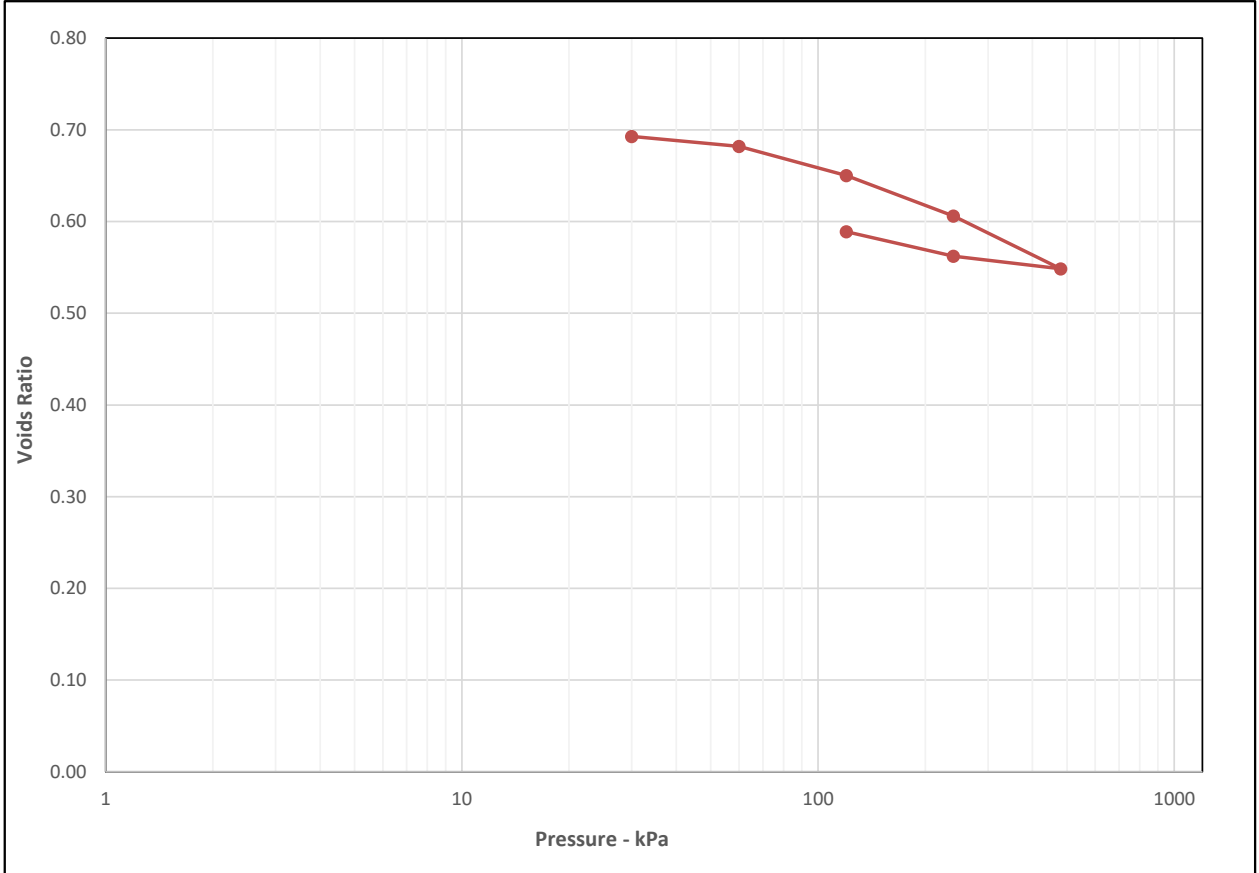


**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number 64154

Borehole/Trialpit No. ATK_BH02

Project Name	Lyneham Banks	Sample No.	107
Soil Description	Grey silty CLAY	Depth Top (m)	6.45
		Depth Base (m)	6.75
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	09/02/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	29	0	- 30	0.097	43		-		
Bulk Density (Mg/m3)	2.02	30	- 60	0.22	21		-		
Dry Density (Mg/m3)	1.56	60	- 120	0.31	14		-		
Voids Ratio	0.6977	120	- 240	0.22	0.58		-		
Degree of saturation	110.9	240	- 480	0.15	0.72		-		
Height (mm)	19.93	480	- 240	0.037	0.71		-		
Diameter (mm)	74.96	240	- 120	0.14	0.38		-		
Particle Density (Mg/m3)	2.65		-				-		

Operator
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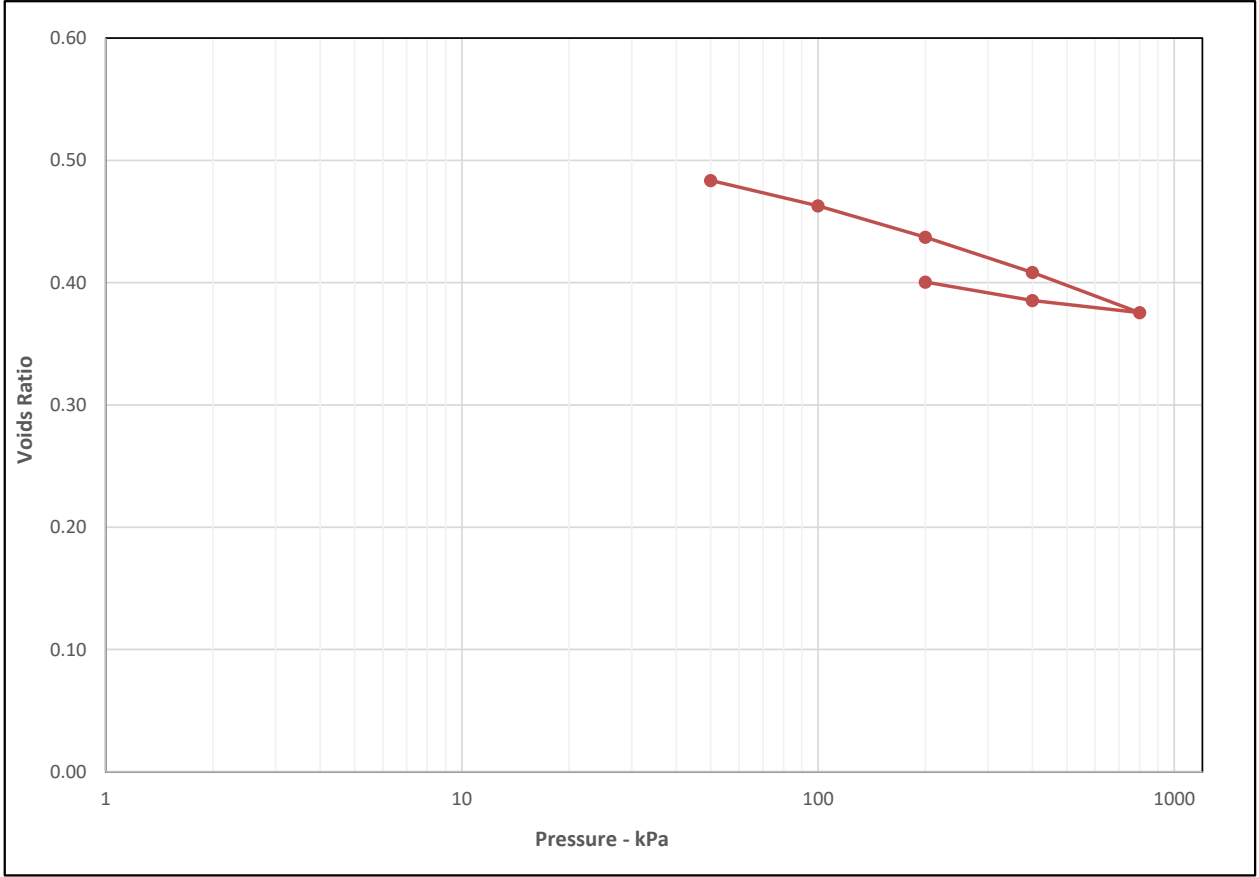


**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Contract Number 64154

Borehole/Trialpit No. ATK_BH02

Project Name	Lyneham Banks	Sample No.	114
Soil Description	Grey silty CLAY	Depth Top (m)	11.00
		Depth Base (m)	11.40
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	09/02/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	21	0	- 50	0.27	20		-		
Bulk Density (Mg/m3)	2.13	50	- 100	0.28	20		-		
Dry Density (Mg/m3)	1.76	100	- 200	0.17	9.4		-		
Voids Ratio	0.5040	200	- 400	0.10	5.3		-		
Degree of saturation	109.8	400	- 800	0.058	6.1		-		
Height (mm)	19.81	800	- 400	0.018	4.5		-		
Diameter (mm)	74.95	400	- 200	0.055	4.7		-		
Particle Density (Mg/m3)	2.65		-				-		

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

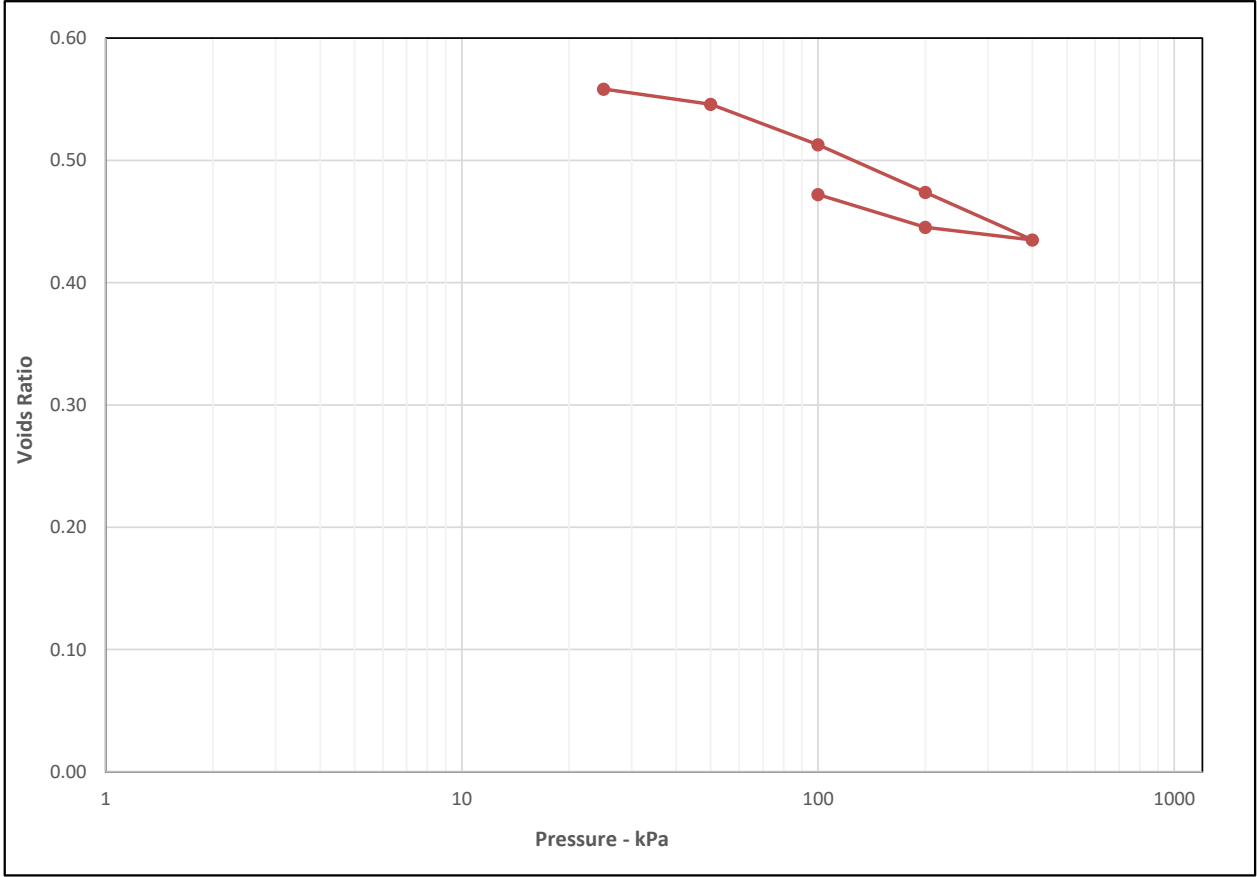
Contract Number

64154

Borehole/Trialpit No.

ATKRD_BH05

Project Name	Lyneham Banks	Sample No.	105
Soil Description	Grey silty CLAY	Depth Top (m)	5.70
		Depth Base (m)	6.00
Lab Temperature	20°C	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	09/02/2023		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	23	0	-	25	SWELL	SWELL		-			
Bulk Density (Mg/m3)	2.12	25	-	50	0.32	0.66		-			
Dry Density (Mg/m3)	1.73	50	-	100	0.43	1.6		-			
Voids Ratio	0.5341	100	-	200	0.26	0.30		-			
Degree of saturation	113.9	200	-	400	0.13	0.34		-			
Height (mm)	20.07	400	-	200	0.036	0.50		-			
Diameter (mm)	74.98	200	-	100	0.19	0.22		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

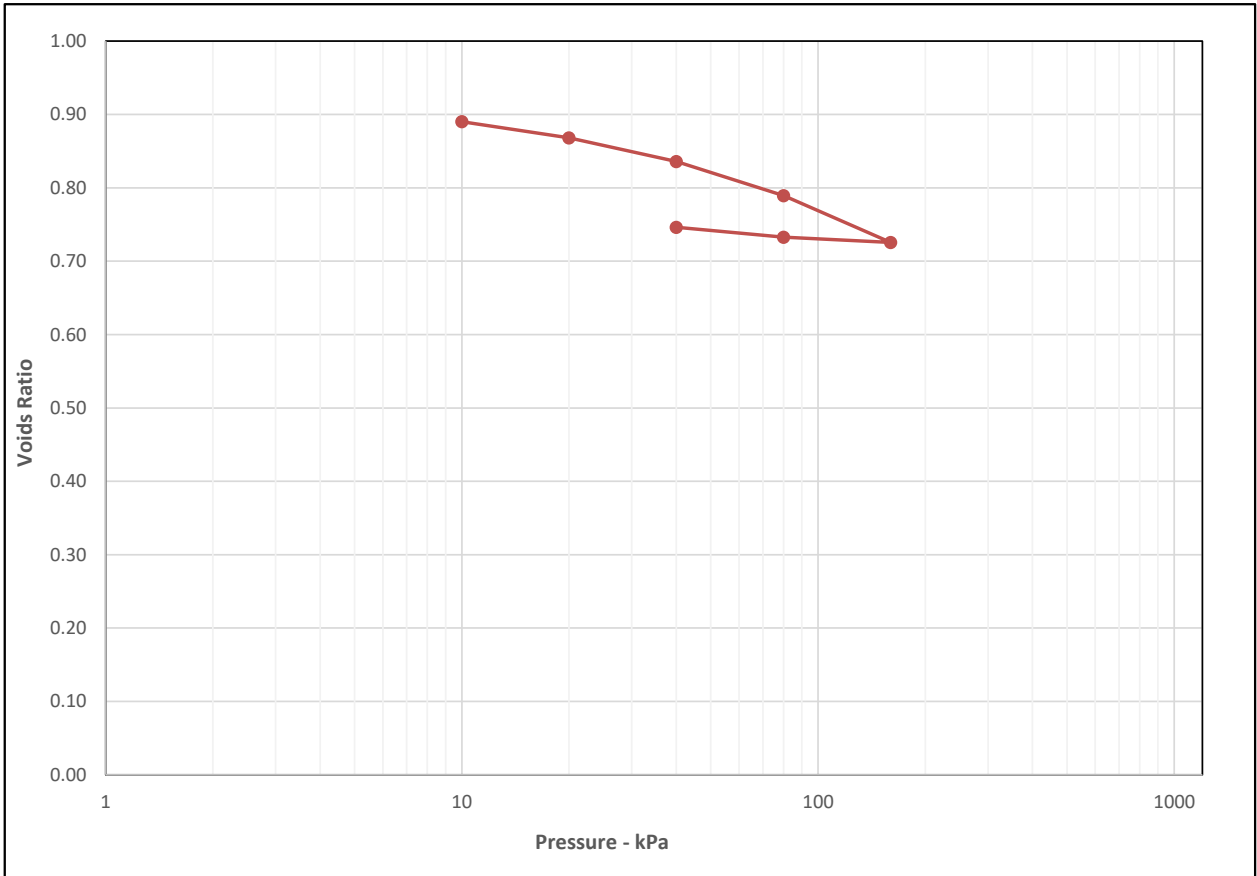
Contract Number

64154

Borehole/Trialpit No.

ATKRD_BH06

Project Name	Lyneham Banks	Sample No.	1
Soil Description	Brown silty CLAY	Depth Top (m)	2.00
		Depth Base (m)	
Lab Temperature	20°C	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	U
Date Tested	09/02/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	37	0	-	10	2.0	18			
Bulk Density (Mg/m3)	1.88	10	-	20	1.2	4.7			
Dry Density (Mg/m3)	1.37	20	-	40	0.87	2.2			
Voids Ratio	0.9284	40	-	80	0.63	0.97			
Degree of saturation	104.9	80	-	160	0.45	0.40			
Height (mm)	20.1	160	-	80	0.051	3.2			
Diameter (mm)	75	80	-	40	0.20	0.80			
Particle Density (Mg/m3)	2.65		-						

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

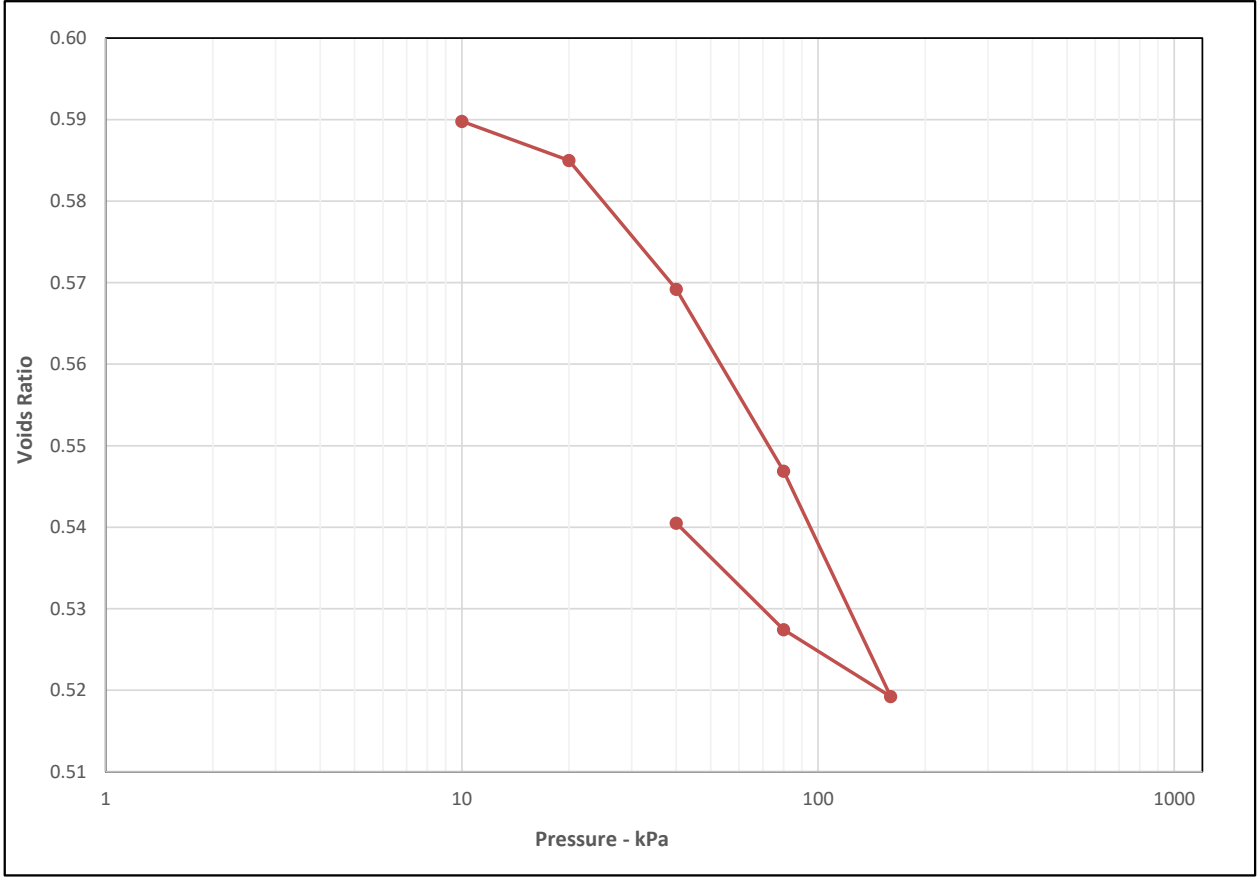
Contract Number

64154

Borehole/Trialpit No.

ATKRD_BH07

Project Name	Lyneham Banks	Sample No.	104
Soil Description	Grey brown silty CLAY	Depth Top (m)	2.40
		Depth Base (m)	2.90
Lab Temperature	20°C	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	09/02/2023		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	25	0	-	10	SWELL	SWELL		-			
Bulk Density (Mg/m3)	2.09	10	-	20	0.30	3.8		-			
Dry Density (Mg/m3)	1.67	20	-	40	0.50	3.4		-			
Voids Ratio	0.5847	40	-	80	0.36	1.3		-			
Degree of saturation	114.0	80	-	160	0.22	1.0		-			
Height (mm)	20.1	160	-	80	0.067	5.6		-			
Diameter (mm)	74.93	80	-	40	0.21	0.57		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

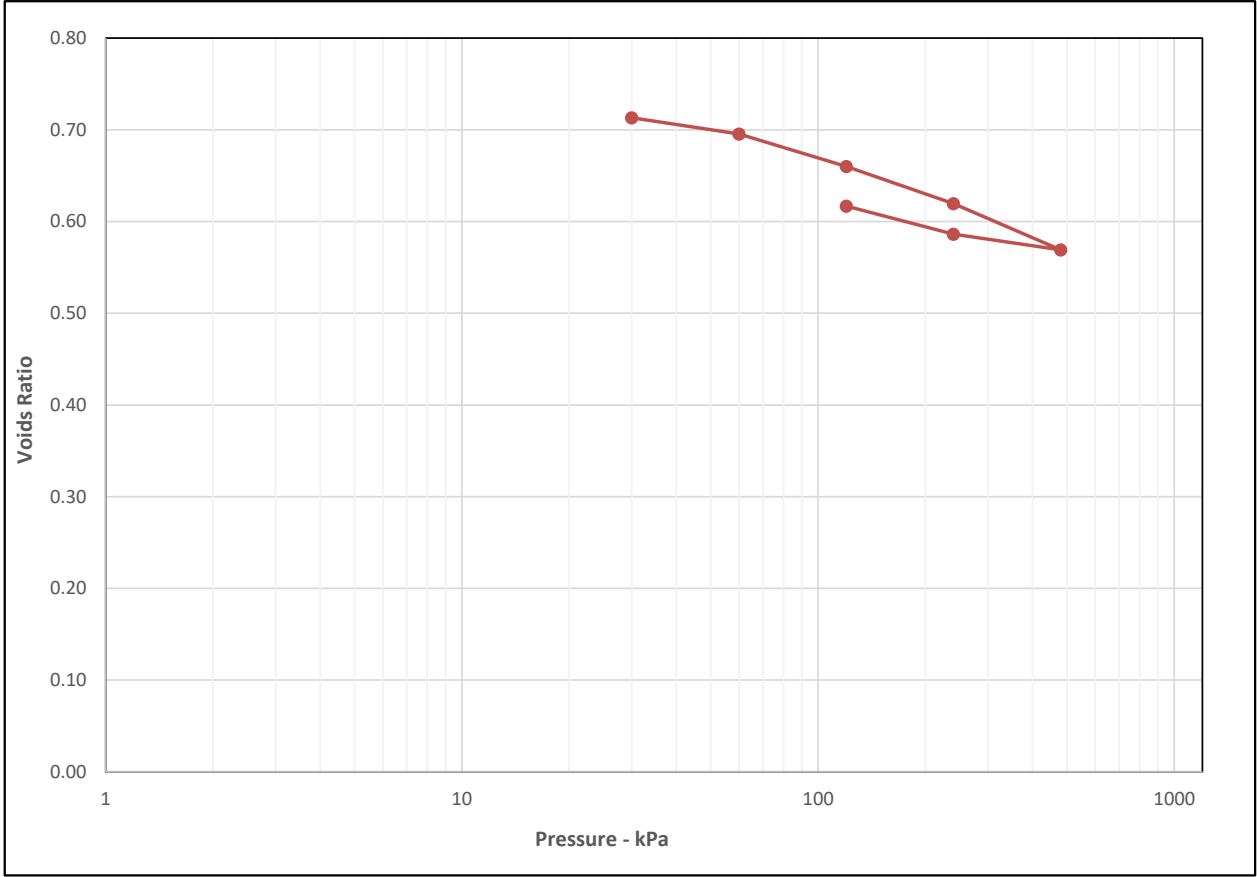
Contract Number

64154

Borehole/Trialpit No.

ATKRD_BH07

Project Name	Lyneham Banks	Sample No.	113
Soil Description	Grey silty CLAY	Depth Top (m)	6.60
		Depth Base (m)	6.90
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	CS
Date Tested	09/02/2023		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	29	0	-	30	SWELL	SWELL		-			
Bulk Density (Mg/m3)	2.02	30	-	60	0.34	0.67		-			
Dry Density (Mg/m3)	1.57	60	-	120	0.35	0.68		-			
Voids Ratio	0.6922	120	-	240	0.20	0.64		-			
Degree of saturation	112.0	240	-	480	0.13	0.59		-			
Height (mm)	20	480	-	240	0.045	0.69		-			
Diameter (mm)	74.96	240	-	120	0.16	0.38		-			
Particle Density (Mg/m3)	2.65		-					-			

Operator
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**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

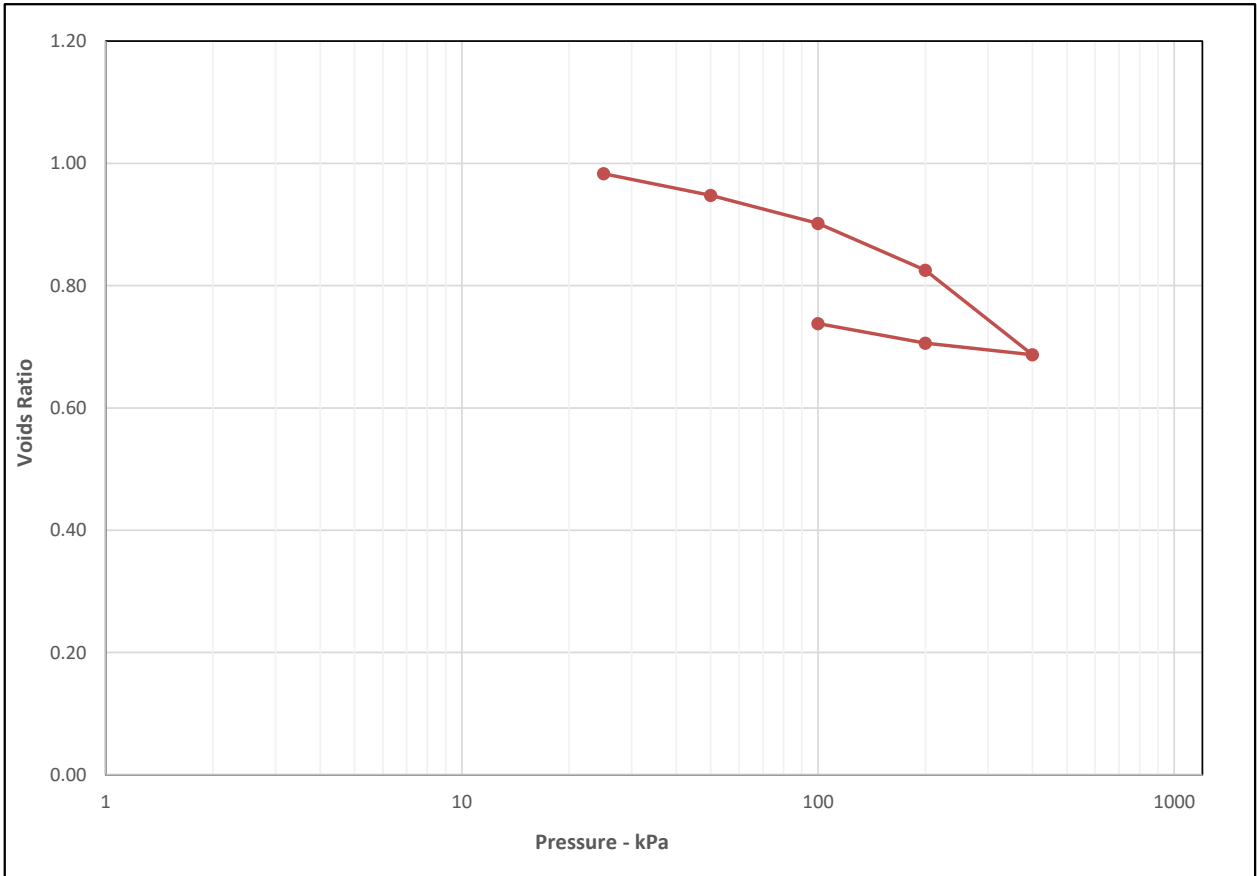
Contract Number

64154

Borehole/Trialpit No.

ATKRD_BH11

Project Name	Lyneham Banks	Sample No.	2
Soil Description	Grey silty CLAY	Depth Top (m)	5.00
		Depth Base (m)	5.70
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	U
Date Tested	09/02/2023		



Initial Sample Conditions		Pressure Range		Mv m2/MN	Cv m2/yr	Pressure Range		Mv m2/MN	Cv m2/yr
Moisture Content (%)	41	0	-	25	1.1	19			
Bulk Density (Mg/m3)	1.83	25	-	50	0.71	21			
Dry Density (Mg/m3)	1.30	50	-	100	0.48	2.2			
Voids Ratio	1.0408	100	-	200	0.40	1.7			
Degree of saturation	104.3	200	-	400	0.38	0.26			
Height (mm)	20.15	400	-	200	0.056	5.5			
Diameter (mm)	74.95	200	-	100	0.19	0.25			
Particle Density (Mg/m3)	2.65		-						

Operator
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH02

Project Name Lyneham Banks

Sample No. 4

Soil Description Brown silty CLAY

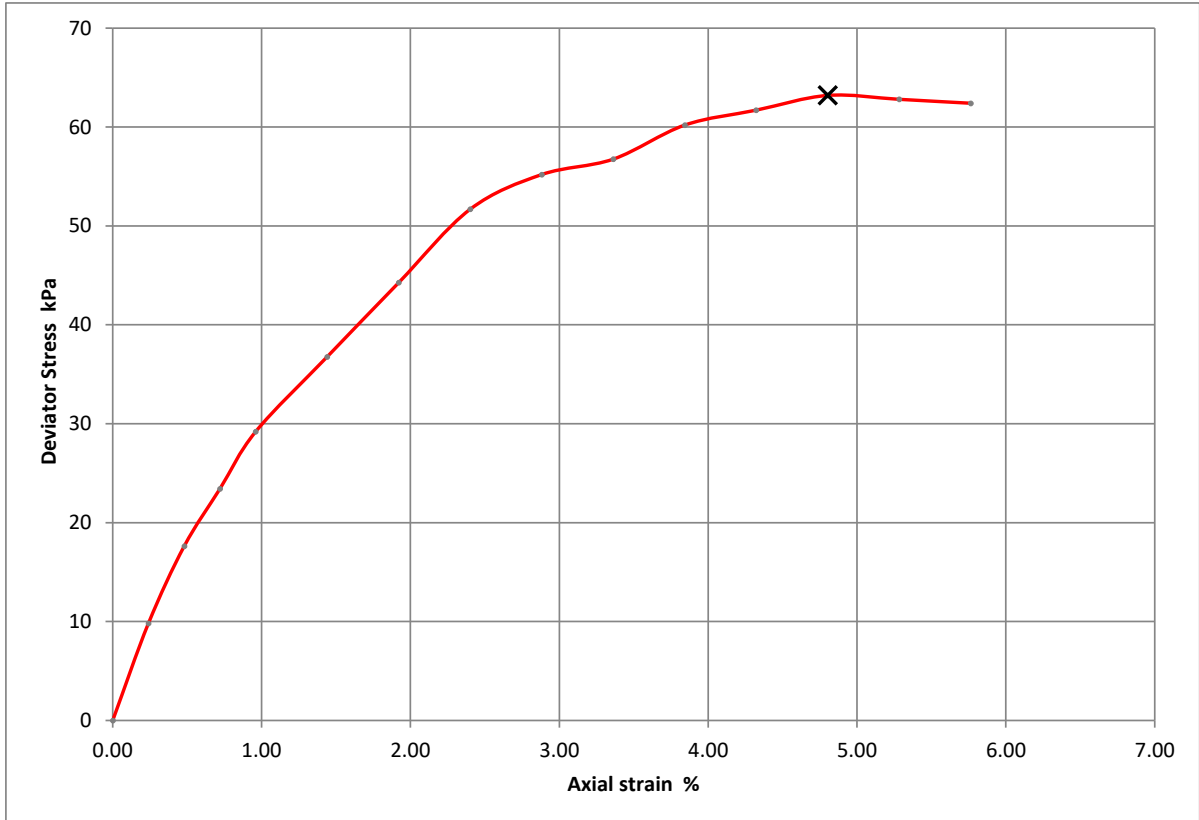
Depth Top (m) 2.00

Depth Base (m) 2.45

Date Tested 07/02/2023

Sample Type UT

Operator XXXXXXXXXX



Moisture Content (%)	32
Bulk Density (Mg/m ³)	1.96
Dry Density (Mg/m ³)	1.49
Specimen Length (mm)	208.2
Specimen Diameter (mm)	102.1
Cell Pressure (kPa)	40
Deviator Stress (kPa)	63
Undrained Shear Strength (kPa)	32
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH02

Project Name Lyneham Banks

Sample No. 105

Soil Description Grey silty gravelly CLAY

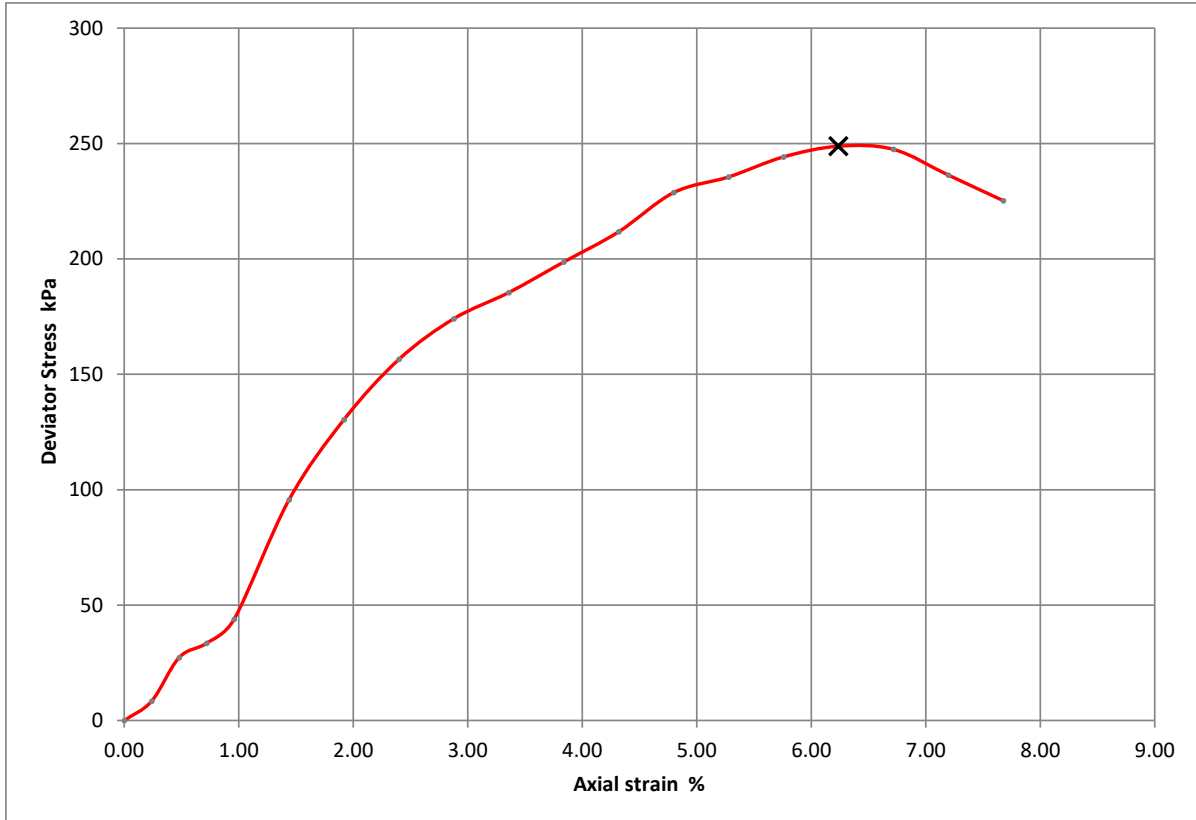
Depth Top (m) 5.45

Depth Base (m) 5.75

Date Tested 07/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	26
Bulk Density (Mg/m ³)	1.97
Dry Density (Mg/m ³)	1.56
Specimen Length (mm)	208.4
Specimen Diameter (mm)	98.7
Cell Pressure (kPa)	100
Deviator Stress (kPa)	249
Undrained Shear Strength (kPa)	124
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH02

Project Name Lyneham Banks

Sample No. 112

Soil Description Grey gravelly silty CLAY

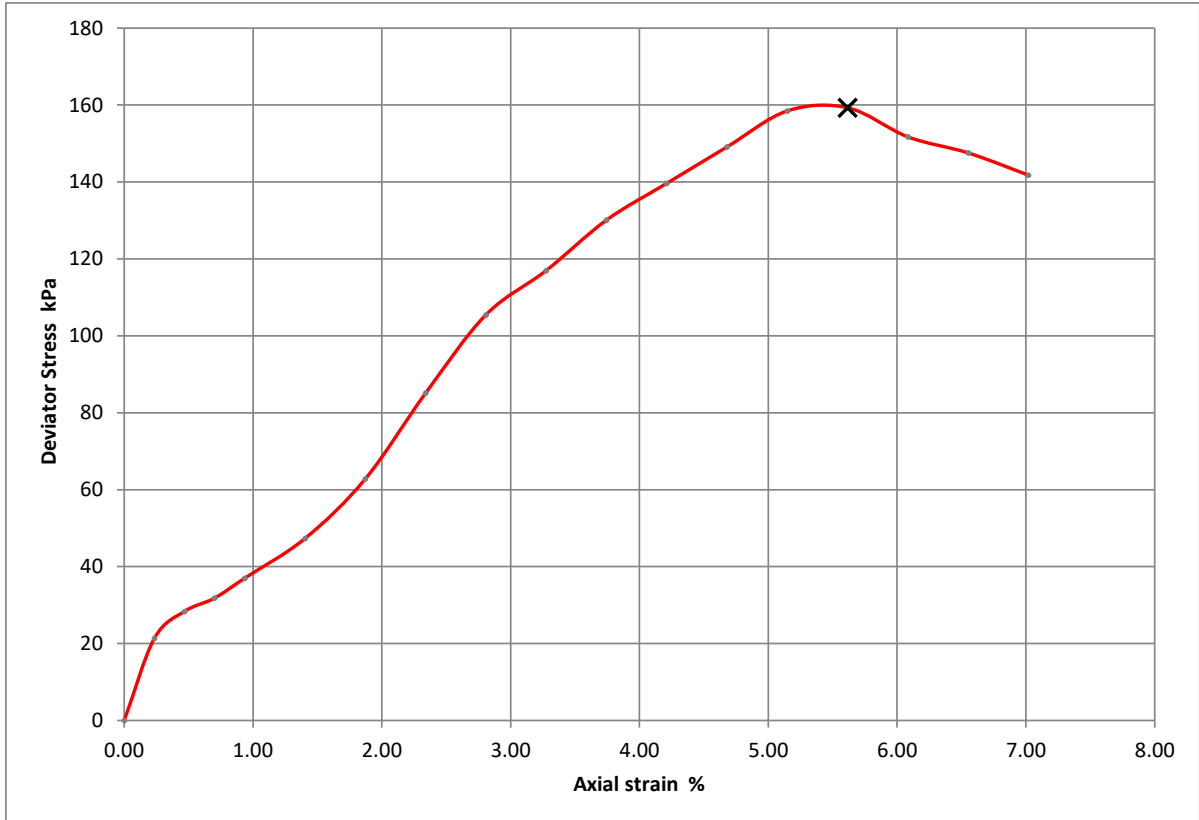
Depth Top (m) 9.50

Depth Base (m) 9.80

Date Tested 07/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	16
Bulk Density (Mg/m ³)	1.93
Dry Density (Mg/m ³)	1.66
Specimen Length (mm)	213.7
Specimen Diameter (mm)	107.4
Cell Pressure (kPa)	180
Deviator Stress (kPa)	159
Undrained Shear Strength (kPa)	80
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.40



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH02

Project Name Lyneham Banks

Sample No. 117

Soil Description Grey silty CLAY

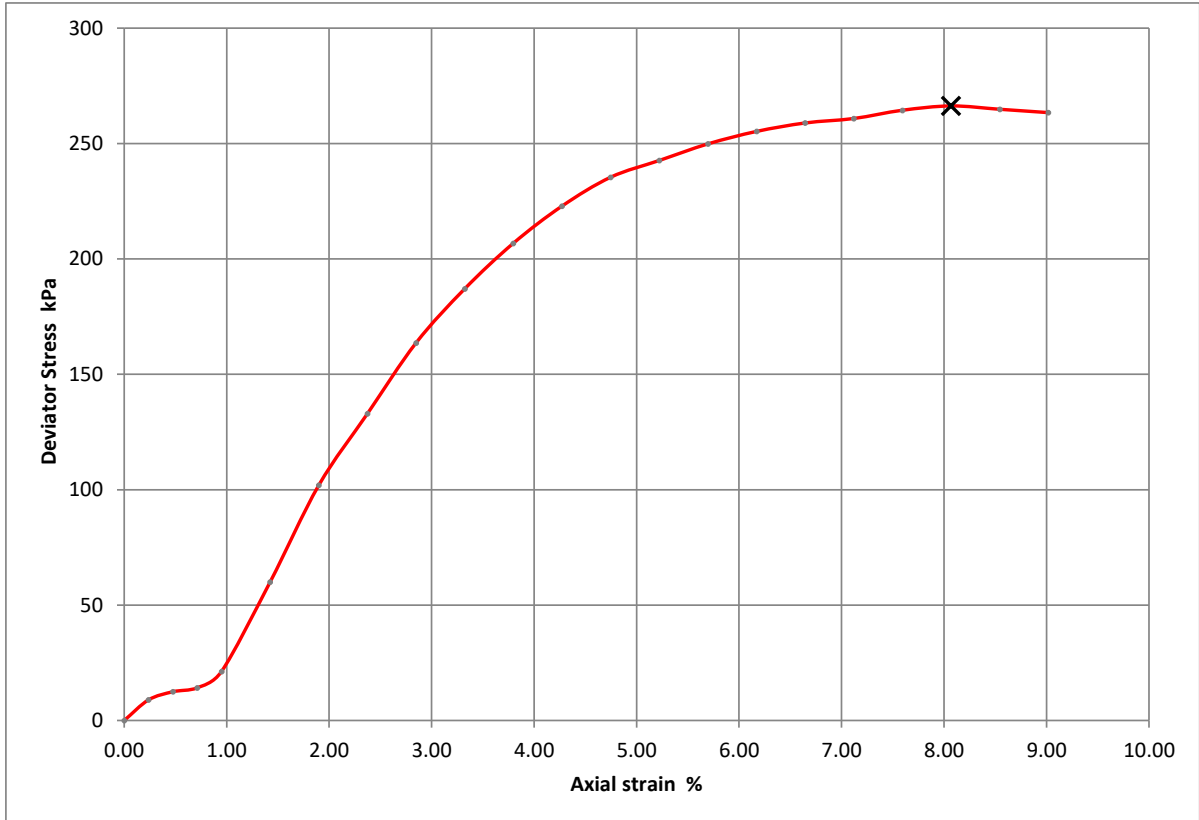
Depth Top (m) 13.90

Depth Base (m) 14.20

Date Tested 07/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	22
Bulk Density (Mg/m ³)	1.88
Dry Density (Mg/m ³)	1.54
Specimen Length (mm)	210.7
Specimen Diameter (mm)	107.1
Cell Pressure (kPa)	260
Deviator Stress (kPa)	266
Undrained Shear Strength (kPa)	133
Failure Strain (%)	8
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH02

Project Name Lyneham Banks

Sample No. 122

Soil Description Grey silty CLAY

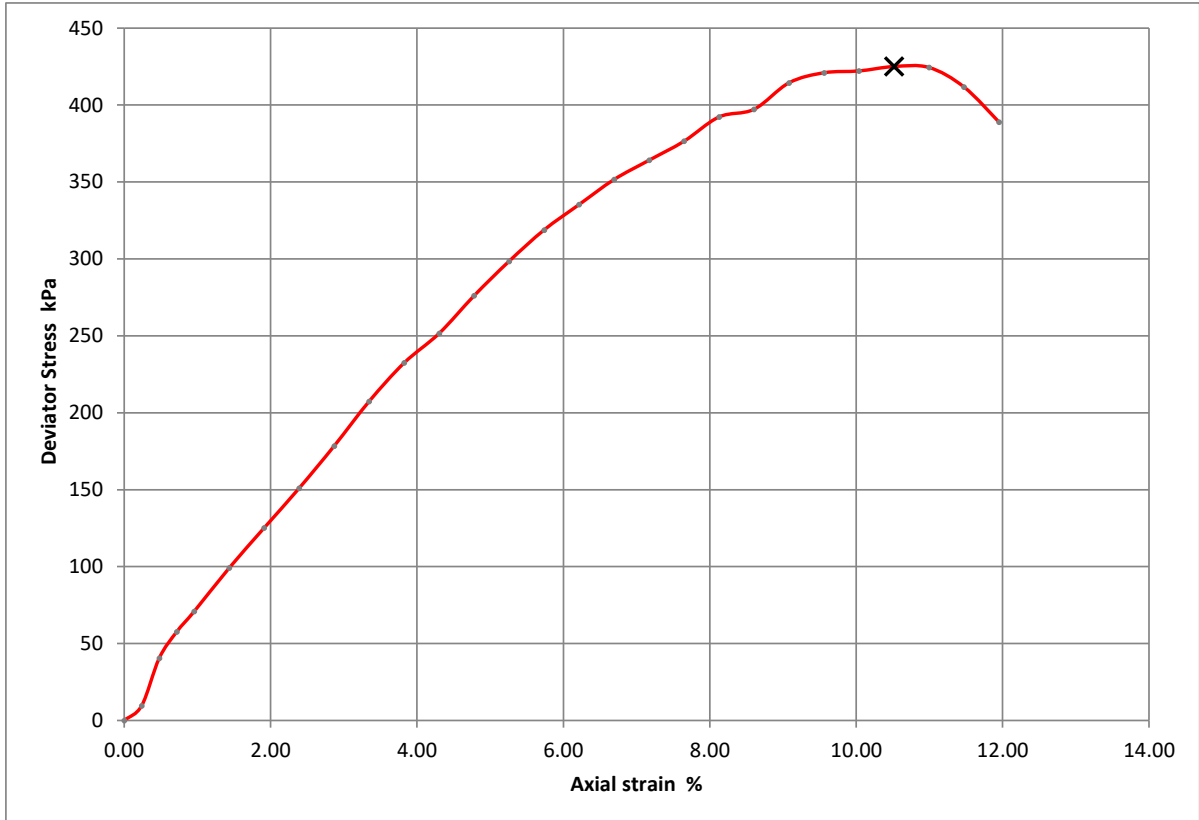
Depth Top (m) 17.20

Depth Base (m) 17.50

Date Tested 07/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	15
Bulk Density (Mg/m ³)	2.22
Dry Density (Mg/m ³)	1.93
Specimen Length (mm)	209.2
Specimen Diameter (mm)	103.1
Cell Pressure (kPa)	240
Deviator Stress (kPa)	425
Undrained Shear Strength (kPa)	213
Failure Strain (%)	11
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH06

Project Name Lyneham Banks

Sample No. 101

Soil Description Brown silty CLAY

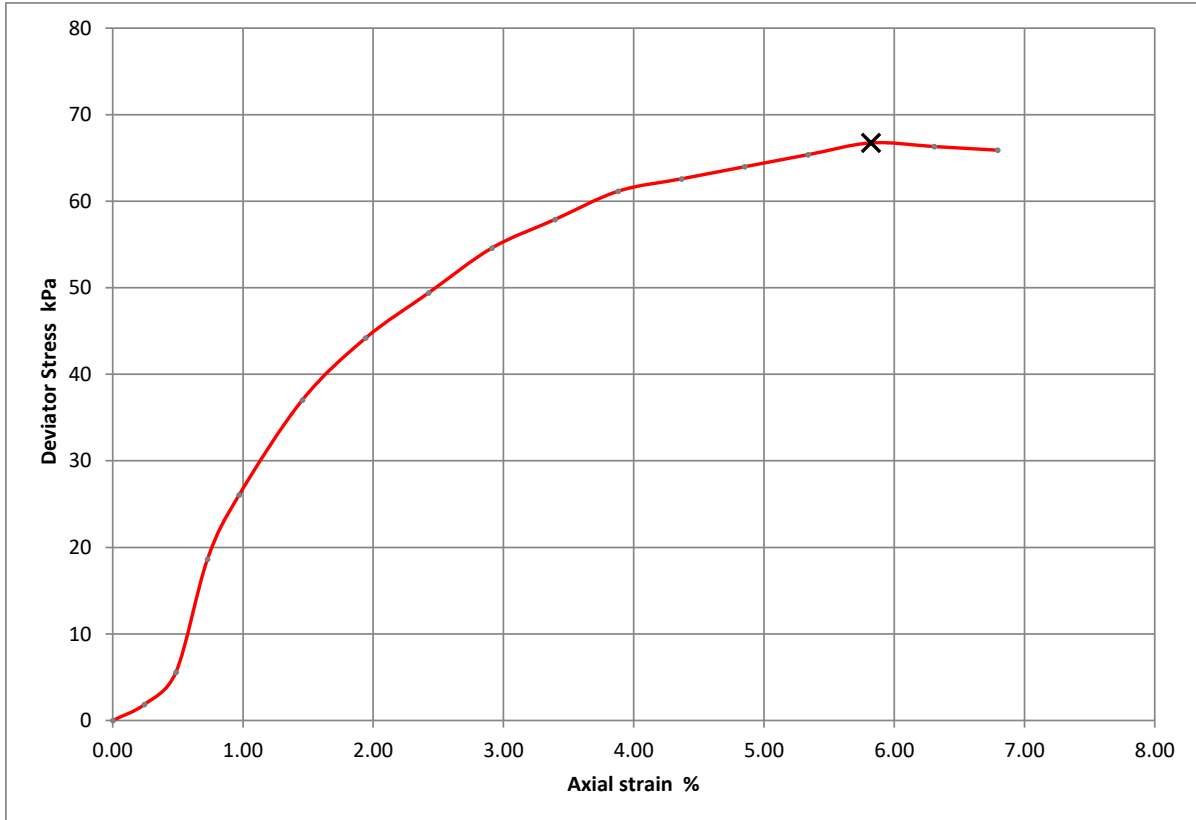
Depth Top (m) 0.70

Depth Base (m) 1.00

Date Tested 07/02/2023

Sample Type CS

Operator [REDACTED]



Moisture Content (%)	37
Bulk Density (Mg/m ³)	1.74
Dry Density (Mg/m ³)	1.27
Specimen Length (mm)	206.1
Specimen Diameter (mm)	104.4
Cell Pressure (kPa)	15
Deviator Stress (kPa)	67
Undrained Shear Strength (kPa)	33
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.46



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH06

Project Name Lyneham Banks

Sample No. 102

Soil Description Brown silty CLAY

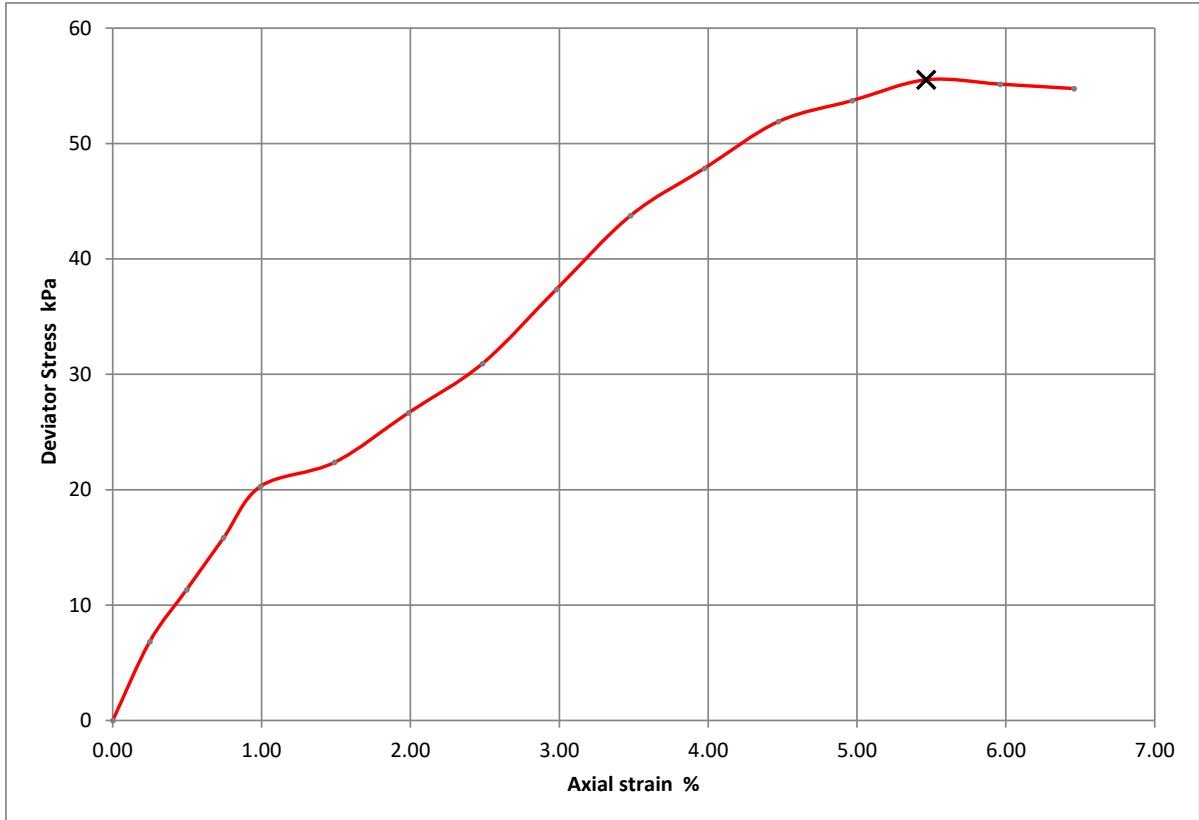
Depth Top (m) 2.50

Depth Base (m) 2.70

Date Tested 07/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	31
Bulk Density (Mg/m ³)	2.09
Dry Density (Mg/m ³)	1.60
Specimen Length (mm)	201.3
Specimen Diameter (mm)	94.7
Cell Pressure (kPa)	50
Deviator Stress (kPa)	56
Undrained Shear Strength (kPa)	28
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.49



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH06

Project Name Lyneham Banks

Sample No. 104

Soil Description Grey silty CLAY

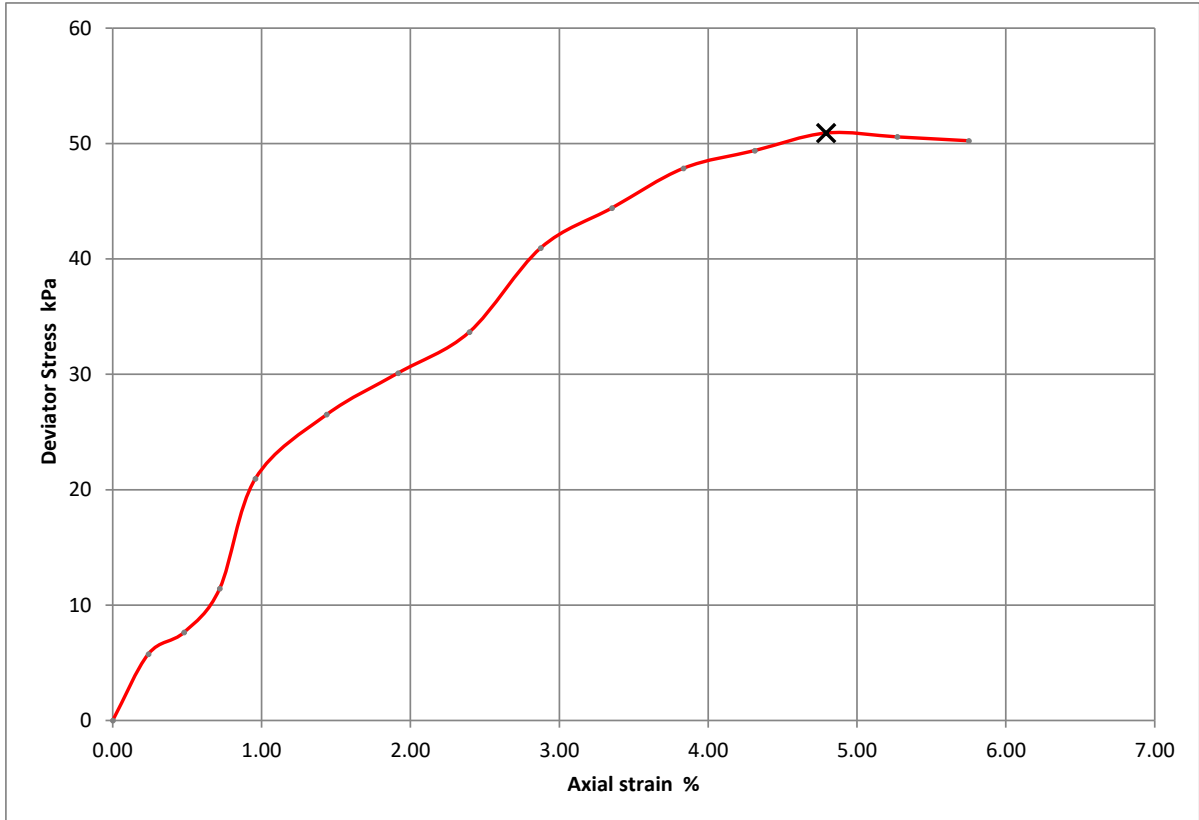
Depth Top (m) 5.70

Depth Base (m) 6.00

Date Tested 07/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	23
Bulk Density (Mg/m ³)	1.83
Dry Density (Mg/m ³)	1.49
Specimen Length (mm)	208.7
Specimen Diameter (mm)	103.1
Cell Pressure (kPa)	100
Deviator Stress (kPa)	51
Undrained Shear Strength (kPa)	25
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number 64154

Borehole/Pit No. ATK_BH06

Project Name Lyneham Banks

Sample No. 108

Soil Description Grey silty CLAY

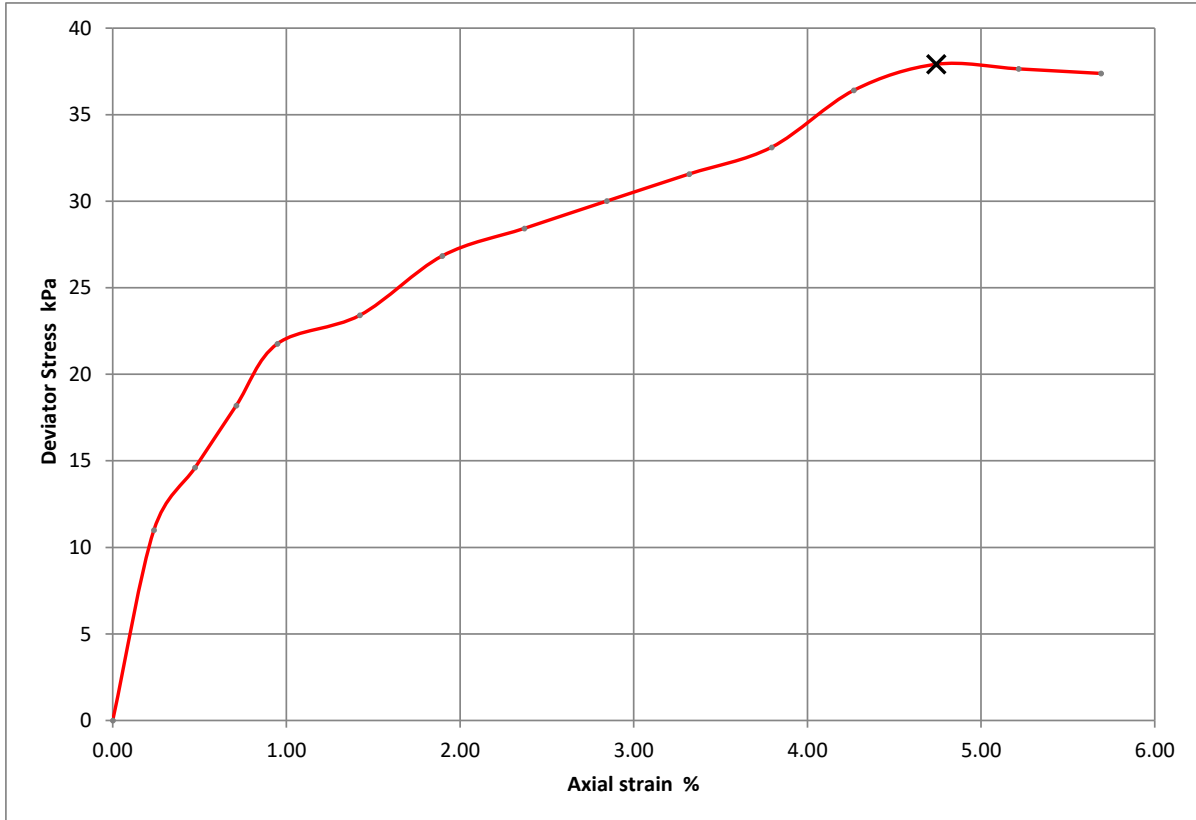
Depth Top (m) 11.00

Depth Base (m) 11.30

Date Tested 07/02/2023

Sample Type CS

Operator XXXXXXXXXX



Moisture Content (%)	25
Bulk Density (Mg/m ³)	2.04
Dry Density (Mg/m ³)	1.63
Specimen Length (mm)	210.9
Specimen Diameter (mm)	105.7
Cell Pressure (kPa)	220
Deviator Stress (kPa)	38
Undrained Shear Strength (kPa)	19
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.42



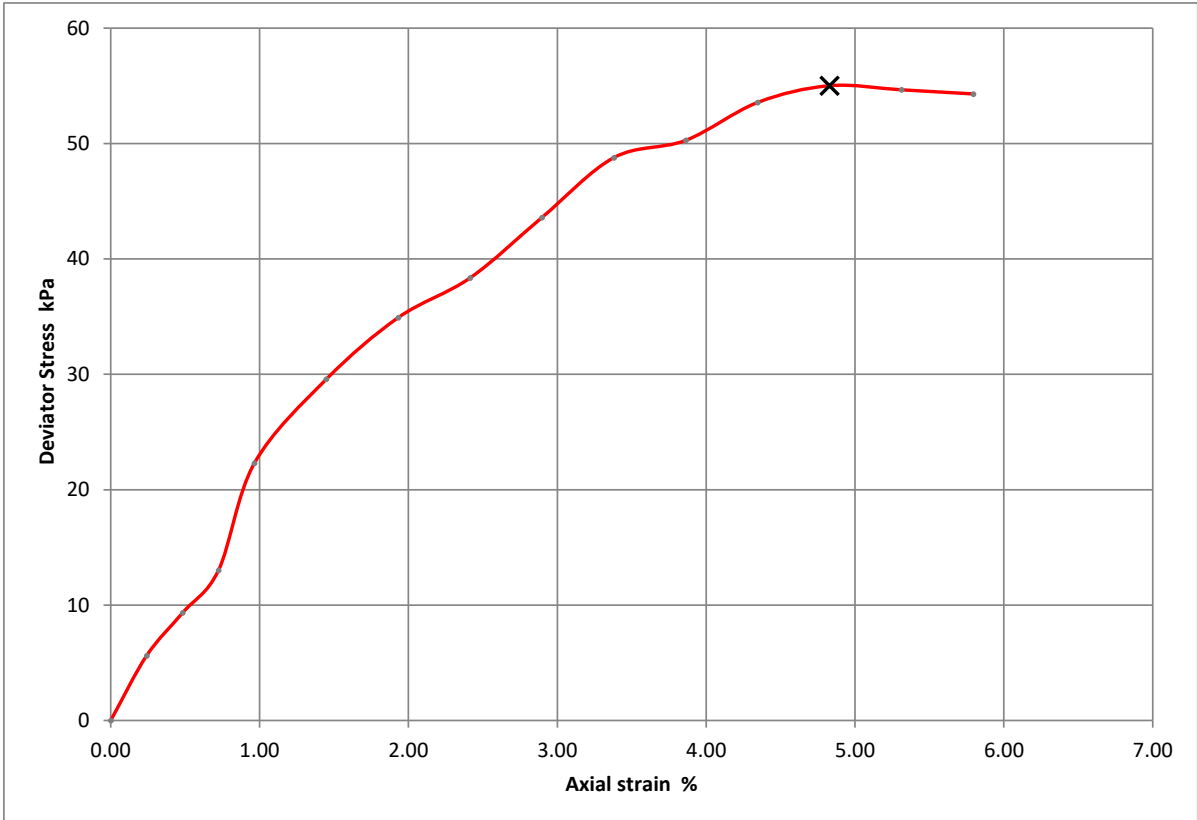
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH05
Sample No.	2
Depth Top (m)	4.00
Depth Base (m)	
Sample Type	U
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	26
Bulk Density (Mg/m ³)	1.91
Dry Density (Mg/m ³)	1.52
Specimen Length (mm)	207.1
Specimen Diameter (mm)	104.4
Cell Pressure (kPa)	80
Deviator Stress (kPa)	55
Undrained Shear Strength (kPa)	28
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.45

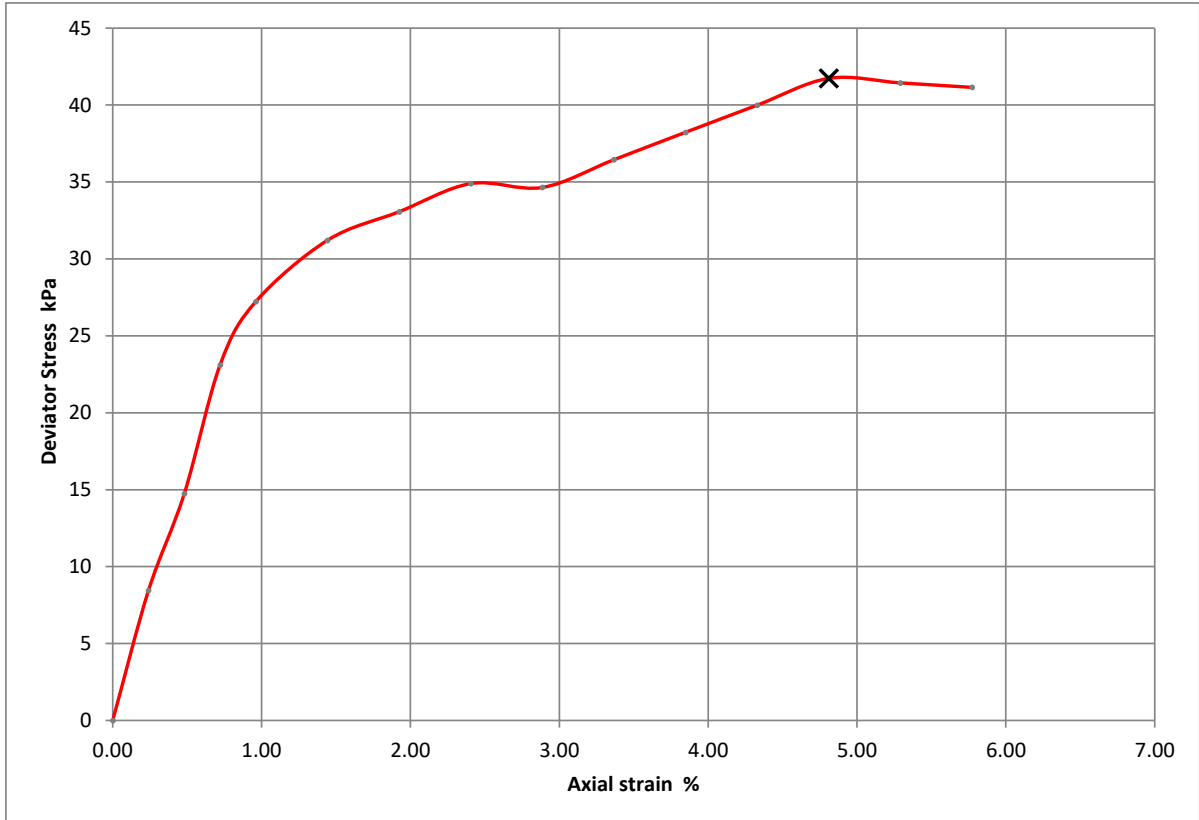




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH05
Sample No.	107
Depth Top (m)	7.20
Depth Base (m)	7.50
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey brown silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	20
Bulk Density (Mg/m ³)	2.11
Dry Density (Mg/m ³)	1.76
Specimen Length (mm)	207.9
Specimen Diameter (mm)	98.4
Cell Pressure (kPa)	140
Deviator Stress (kPa)	42
Undrained Shear Strength (kPa)	21
Failure Strain (%)	5
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44

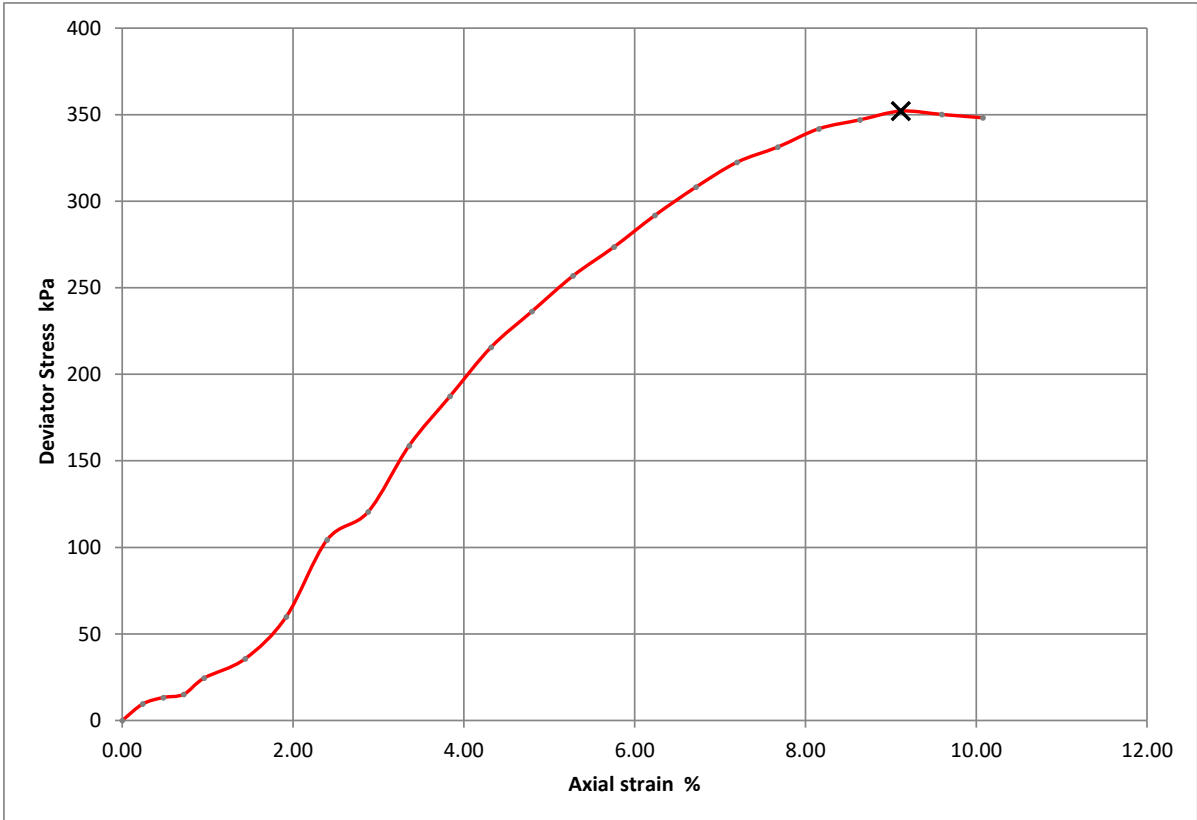




Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH05
Sample No.	111
Depth Top (m)	10.50
Depth Base (m)	10.80
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	19
Bulk Density (Mg/m ³)	2.03
Dry Density (Mg/m ³)	1.71
Specimen Length (mm)	208.4
Specimen Diameter (mm)	103.7
Cell Pressure (kPa)	200
Deviator Stress (kPa)	352
Undrained Shear Strength (kPa)	176
Failure Strain (%)	9
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



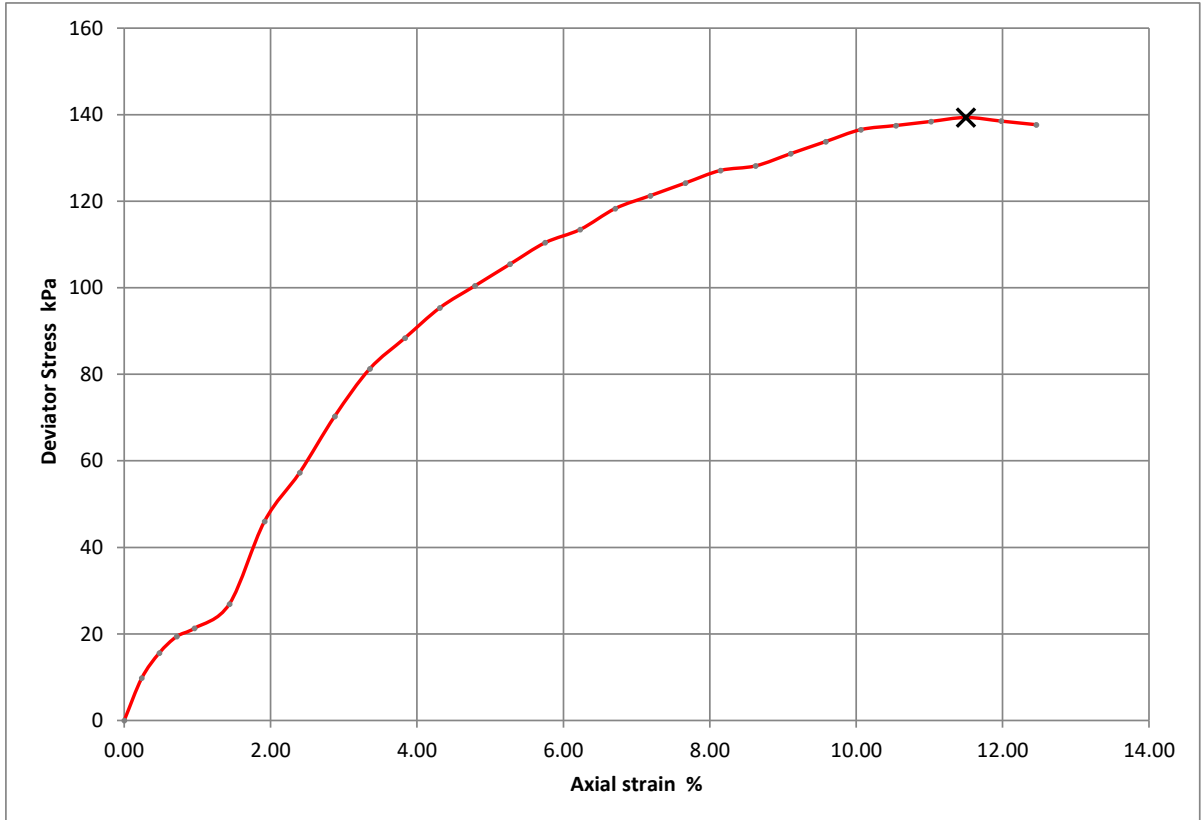
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH06
Sample No.	105
Depth Top (m)	7.20
Depth Base (m)	7.50
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	23
Bulk Density (Mg/m ³)	1.99
Dry Density (Mg/m ³)	1.62
Specimen Length (mm)	208.7
Specimen Diameter (mm)	102.3
Cell Pressure (kPa)	140
Deviator Stress (kPa)	139
Undrained Shear Strength (kPa)	70
Failure Strain (%)	11
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



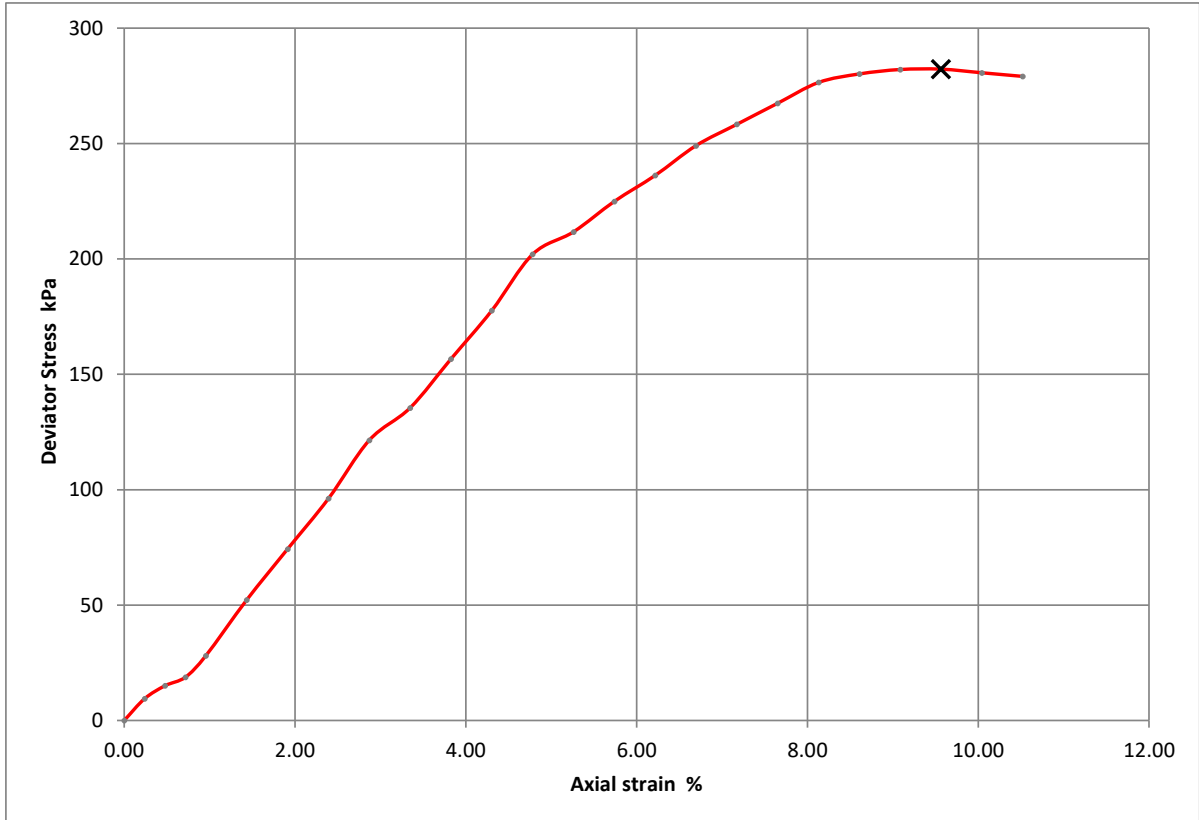
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH06
Sample No.	106
Depth Top (m)	8.20
Depth Base (m)	8.50
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	19
Bulk Density (Mg/m ³)	2.07
Dry Density (Mg/m ³)	1.75
Specimen Length (mm)	209.1
Specimen Diameter (mm)	104.1
Cell Pressure (kPa)	160
Deviator Stress (kPa)	282
Undrained Shear Strength (kPa)	141
Failure Strain (%)	10
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43



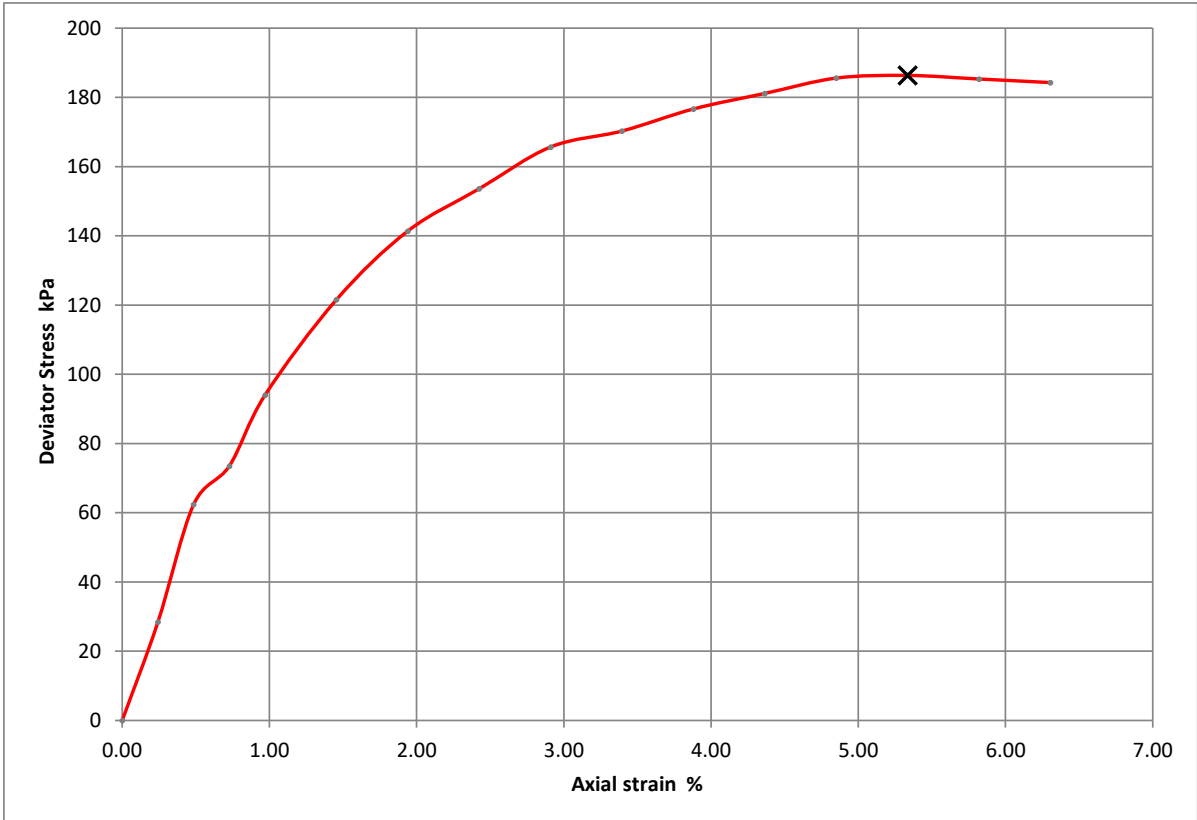
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH06
Sample No.	111
Depth Top (m)	11.70
Depth Base (m)	12.00
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	21
Bulk Density (Mg/m ³)	1.93
Dry Density (Mg/m ³)	1.60
Specimen Length (mm)	206.2
Specimen Diameter (mm)	104.1
Cell Pressure (kPa)	220
Deviator Stress (kPa)	186
Undrained Shear Strength (kPa)	93
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.45



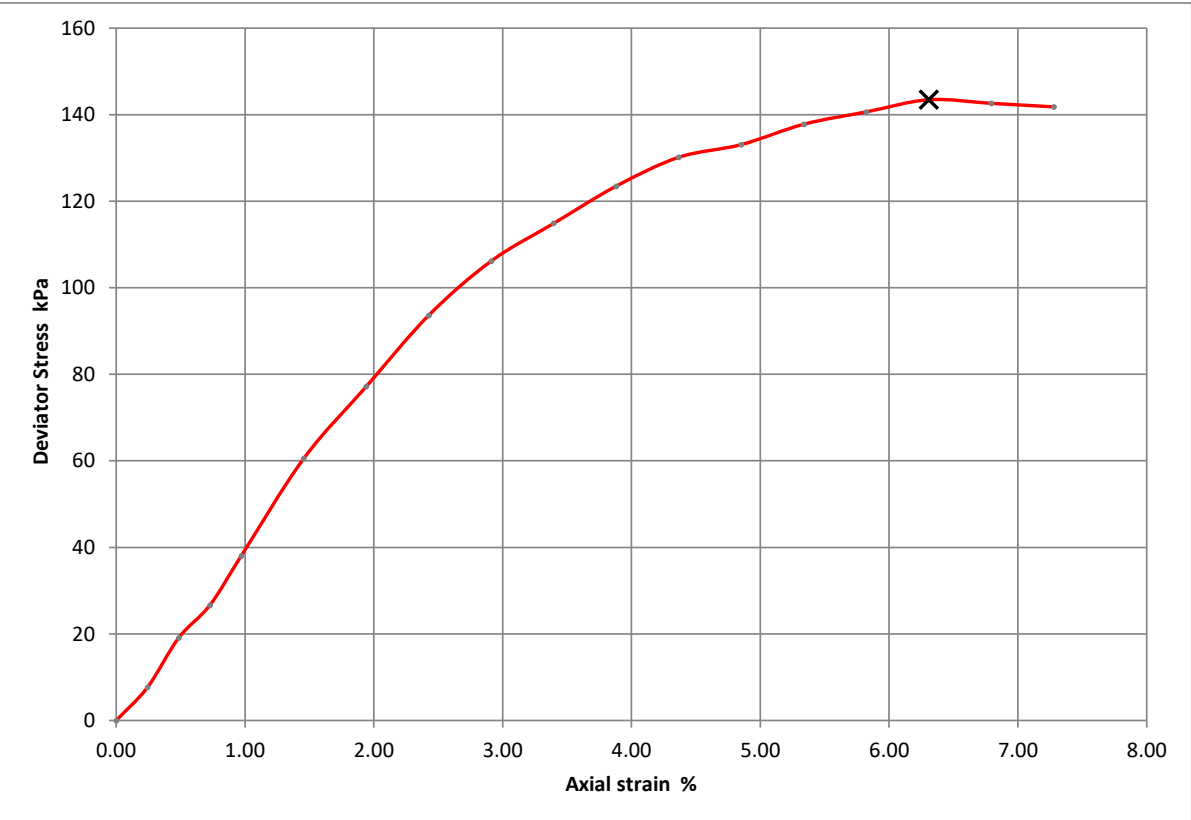
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH07
Sample No.	3
Depth Top (m)	2.00
Depth Base (m)	2.45
Sample Type	UT
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown gravelly silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	30
Bulk Density (Mg/m ³)	1.92
Dry Density (Mg/m ³)	1.48
Specimen Length (mm)	206.1
Specimen Diameter (mm)	103.4
Cell Pressure (kPa)	80
Deviator Stress (kPa)	143
Undrained Shear Strength (kPa)	72
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.46



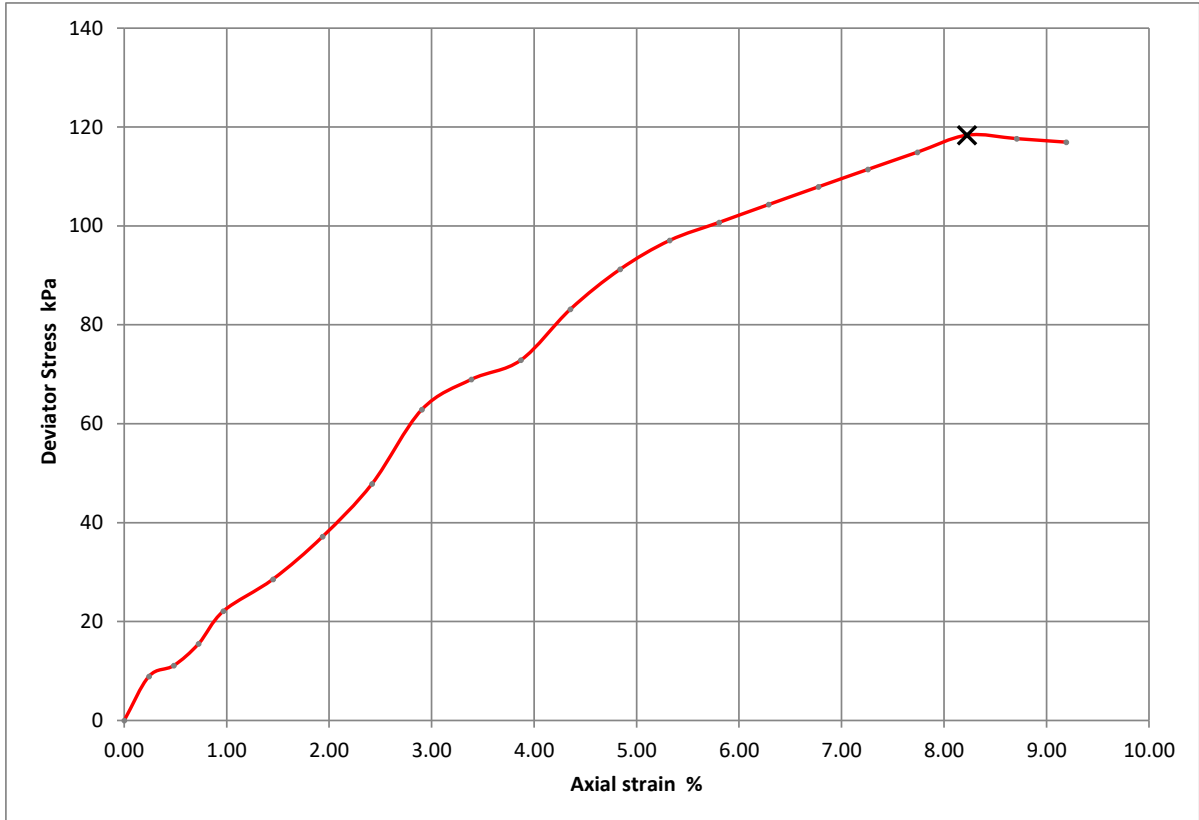
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH07
Sample No.	110
Depth Top (m)	5.65
Depth Base (m)	6.00
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	29
Bulk Density (Mg/m ³)	2.08
Dry Density (Mg/m ³)	1.62
Specimen Length (mm)	206.7
Specimen Diameter (mm)	95.7
Cell Pressure (kPa)	110
Deviator Stress (kPa)	118
Undrained Shear Strength (kPa)	59
Failure Strain (%)	8
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.45



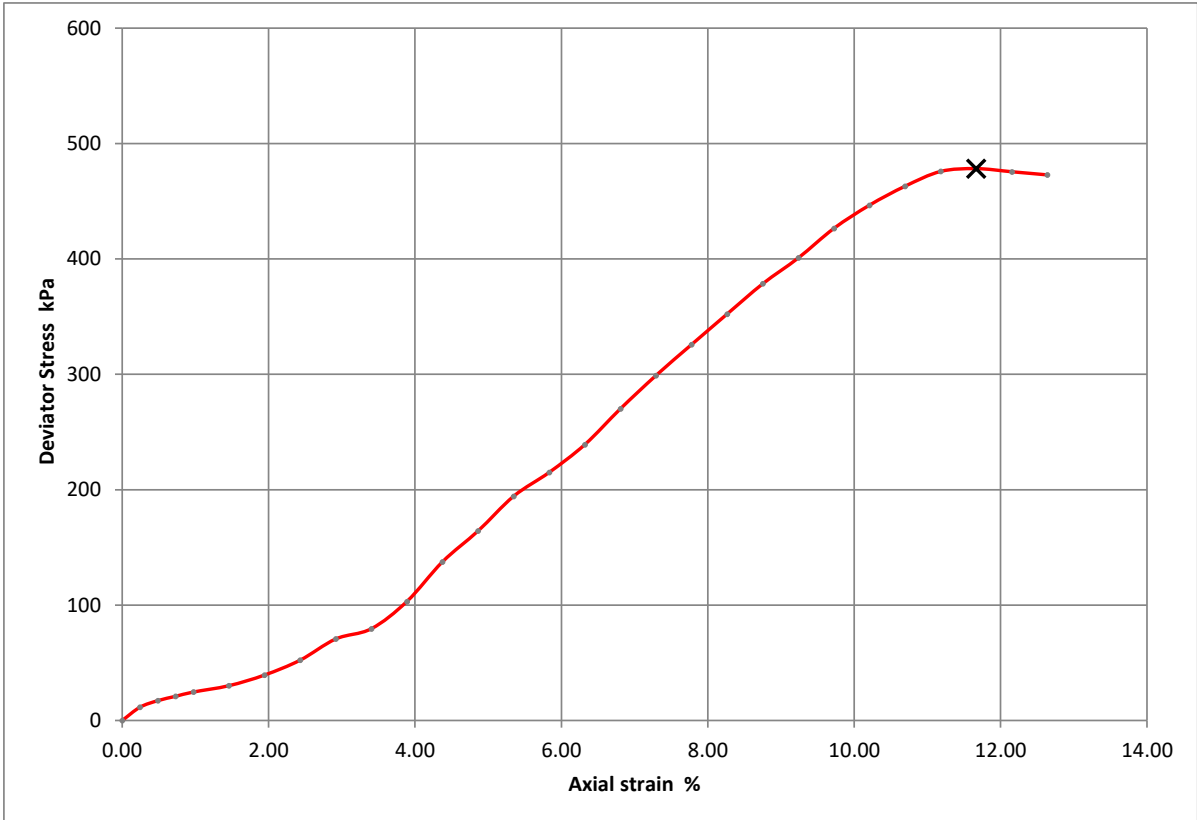
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH07
Sample No.	119
Depth Top (m)	11.20
Depth Base (m)	11.50
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	22
Bulk Density (Mg/m ³)	2.02
Dry Density (Mg/m ³)	1.66
Specimen Length (mm)	205.7
Specimen Diameter (mm)	103.4
Cell Pressure (kPa)	220
Deviator Stress (kPa)	478
Undrained Shear Strength (kPa)	239
Failure Strain (%)	12
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.46



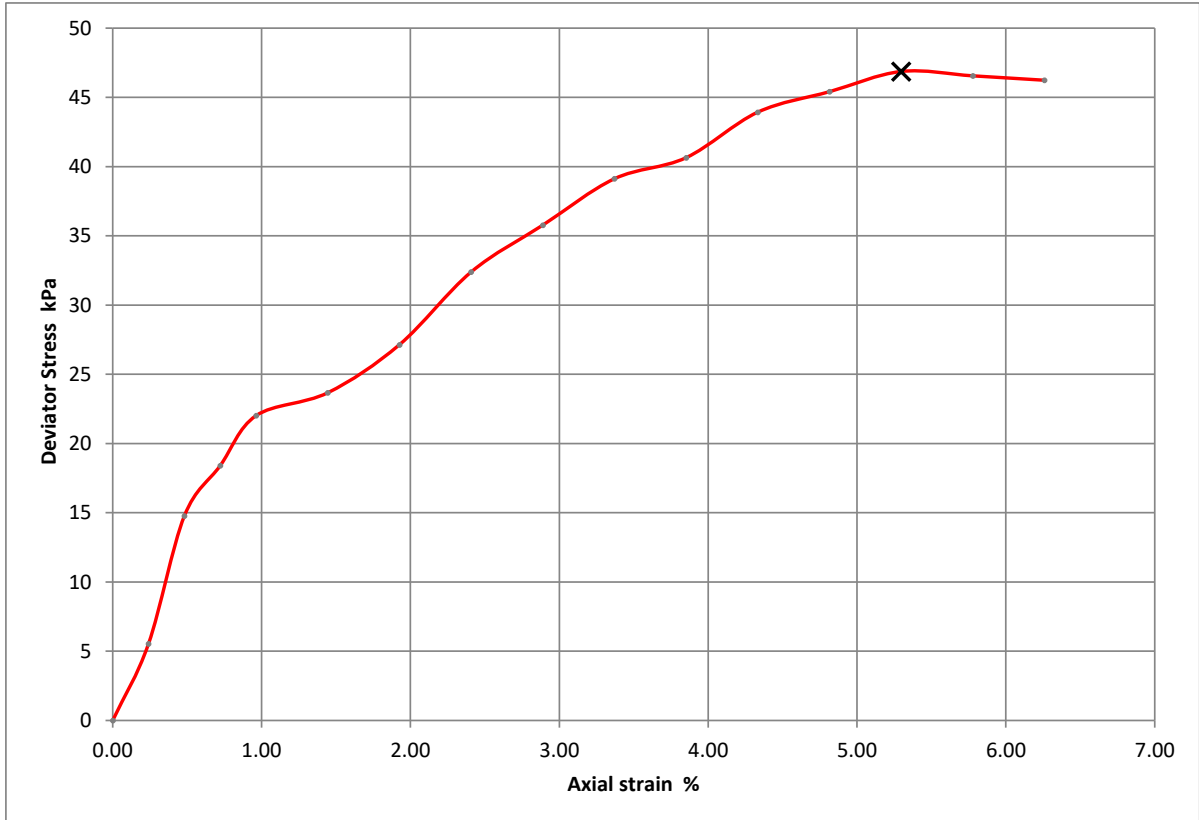
2788



Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH10
Sample No.	3
Depth Top (m)	2.00
Depth Base (m)	2.45
Sample Type	UT
Operator	██████

Project Name	Lyneham Banks
Soil Description	Brown gravelly silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	17
Bulk Density (Mg/m ³)	1.80
Dry Density (Mg/m ³)	1.53
Specimen Length (mm)	207.7
Specimen Diameter (mm)	105.1
Cell Pressure (kPa)	40
Deviator Stress (kPa)	47
Undrained Shear Strength (kPa)	23
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44



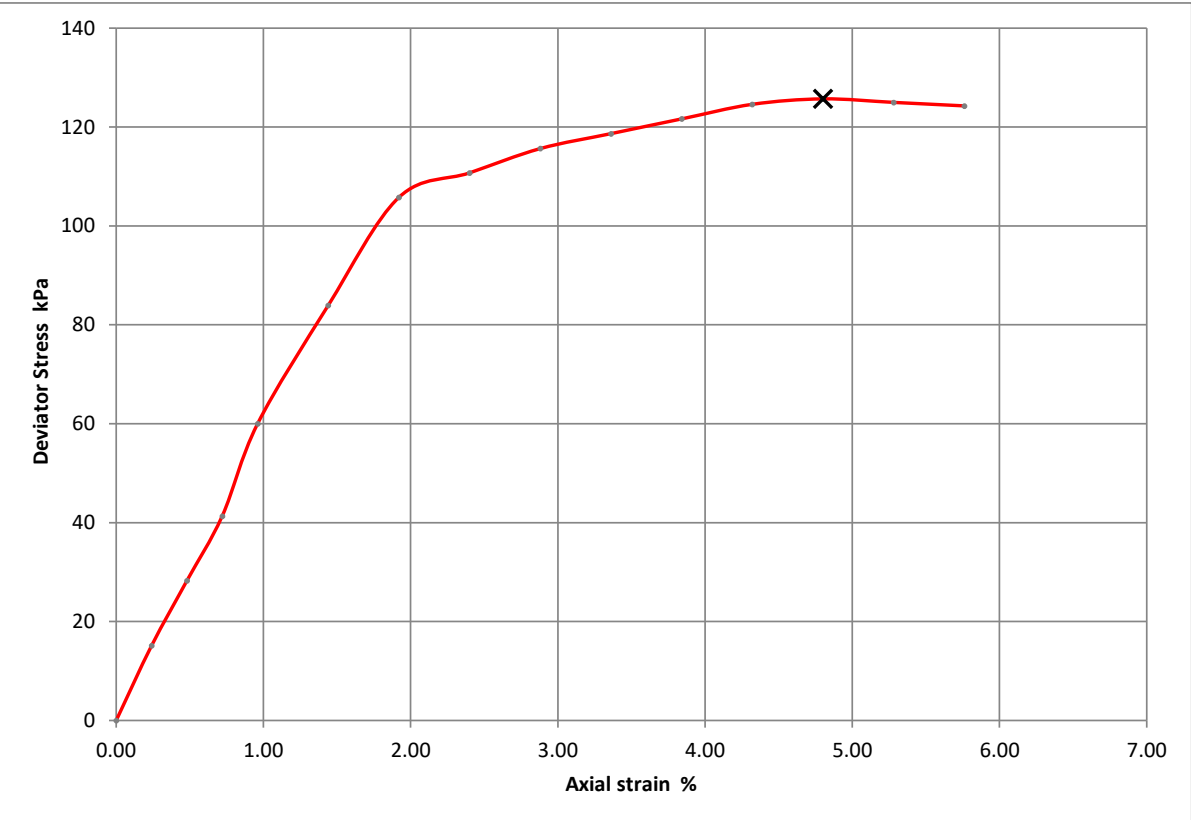
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Single Stage Unconsolidated-Undrained Triaxial Test
BS 1377 : 1990 Part 7 : 8

Contract Number	64154
Borehole/Pit No.	ATKRD_BH11
Sample No.	108
Depth Top (m)	9.60
Depth Base (m)	9.90
Sample Type	CS
Operator	██████

Project Name	Lyneham Banks
Soil Description	Grey silty CLAY
Date Tested	07/02/2023



Moisture Content (%)	17
Bulk Density (Mg/m ³)	1.90
Dry Density (Mg/m ³)	1.62
Specimen Length (mm)	208.3
Specimen Diameter (mm)	104.2
Cell Pressure (kPa)	180
Deviator Stress (kPa)	126
Undrained Shear Strength (kPa)	63
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.44

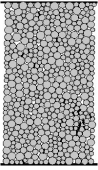


2788

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report


Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">4.0-4.7</td> </tr> <tr> <td>Description</td> <td colspan="3">Brownish Grey, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.3</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.0</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3564.3</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.95</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	4.0-4.7			Description	Brownish Grey, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.3	Initial Sample Diameter	D_0	(mm)	105.0	Initial Sample Weight	W_0	(gr)	3564.3	Initial Bulk Density	ρ_0	(Mg/m ³)	1.95	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	4.0-4.7																																
Description	Brownish Grey, CLAY																																
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Initial Sample Weight	W_0	(gr)	3564.3																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.95																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														


Initial Conditions		Stage 1	2	3	4
Initial Cell Pressure	σ_{3i} (kPa)	340	380	3	
Initial Back Pressure	U_{bi} (kPa)	300	300	3	
Strain Rate	m_s (mm/min)	0.00099	0.04789	0.08621	
Membrane Thickness	m_b (mm)	0.400			
Displacement Input	L_{IP} (mm)	CH 2			
Load Input	N_{IP} (N)	CH 1			
Pore Water Pressure Input	u_{pwp} (kPa)	CH 3			
Sample Volume	V (cc)	CH 6			
Initial Moisture	w_i (%)	28			
Initial Dry Density	ρ_{di} (Mg/m ³)	1.53			
Initial Voids Ratio	e_i	0.736			
Initial Degree of Saturation	S_i (%)	99			
B Value	B	0.98			

Final Conditions					
Final Moisture	w_f (%)	29			
Final Dry Density	ρ_{df} (Mg/m ³)	1.66			
Final Voids Ratio	e_f	0.597			
Final Degree of Saturation	S_f (%)	100.0			
Failure Criteria		Stage 1	2	3	4
Strain At Failure	ϵ_f (%)	3.21	4.21	0.00	
Stress At Failure	$(\sigma_1 - \sigma_3)$ (kPa)	75.8	111.4	0.0	
Minor Stress At Failure	σ_3' (kPa)	12.9	38.0	0.0	
Major Stress At Failure	σ_1' (kPa)	88.8	149.4	0.0	
Principal Stress At Failure	σ_1' / σ_3'	6.870	3.932	0.000	
PwP At Failure Criteria	u_f	312.2	342.0	0.0	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.33	3.33	0.00
Membrane Correction at Failure (kpa)	0.33	0.44	0.00


 Brittle

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 15	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATK-BH02	
	Jobfile	64154	Sample	8	
	Client	SOCOTEC	Depth	4.0-4.7	
Operator	*	Checked	*	Approved	*


 2788

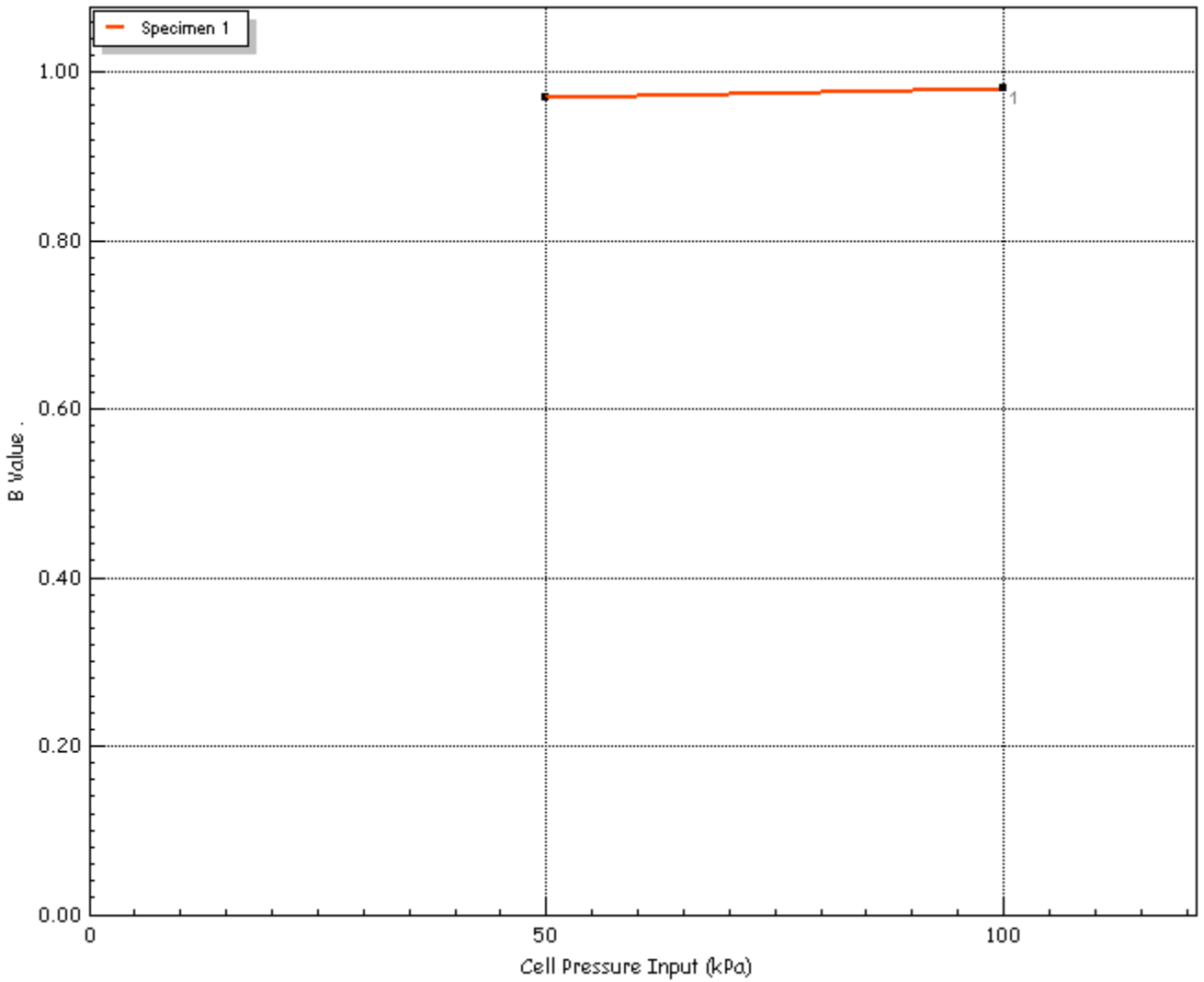
Effective Stress Triaxial Compression


Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	100
Pore Water Pressure Input	u_{pwp}	(kPa)	91
B Value	B	.	0.98



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 15	
	Database: GSTL-152116\SQLEXPRESS2019 \ Effectives		Test Date	09/02/2023	
	Site Reference		Borehole	ATK-BH02	
	Jobfile	64154	Sample	8	
	Client	SOCOTEC	Depth	4.0-4.7	
Operator	*	Checked	*	Approved	*

*

Effective Stress Triaxial Compression

Consolidated Undrained

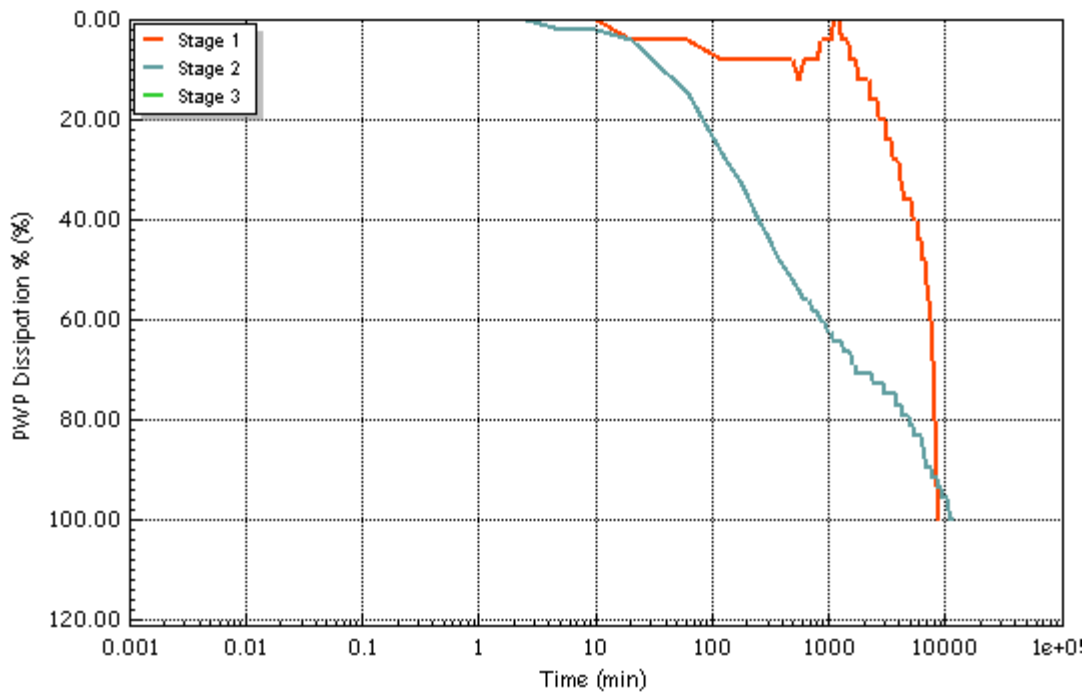
Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	340	380	460
Initial Back Pressure	u_{bi} (kPa)	300	300	300
Pore Water Pressure Input	u_{pwp} (kPa)	325	348	-4
Drainage Method		Radial+One End		

Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	0.00
Volumetric Strain	$\epsilon_v\%$ (%)	3.12	4.87	0.00
Corrected Length	L_c (mm)	209.1	199.0	196.3
Corrected Area	A_c (cm ²)	84.79	84.64	85.74
Corrected Volume	V_c (cc)	1772.476	1683.314	1683.314
t100	t_{100} (min)	5839.33	120.00	27.84
Consolidation	c_v (m ² /year)	0.000	0.019	0.081
Compressibility	m_v (m ² /MN)	1.3	1.0	0.000
Test Time	t_F (h:m:s)	175:10:47	03:36:00	02:00:00
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.00099	0.04607	0.08180

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 15	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATK-BH02	
	Jobfile	64154	Sample	8	
	Client	SOCOTEC	Depth	4.0-4.7	
	Operator	*	Checked	*	Approved

Effective Stress Triaxial Compression

Consolidated Undrained

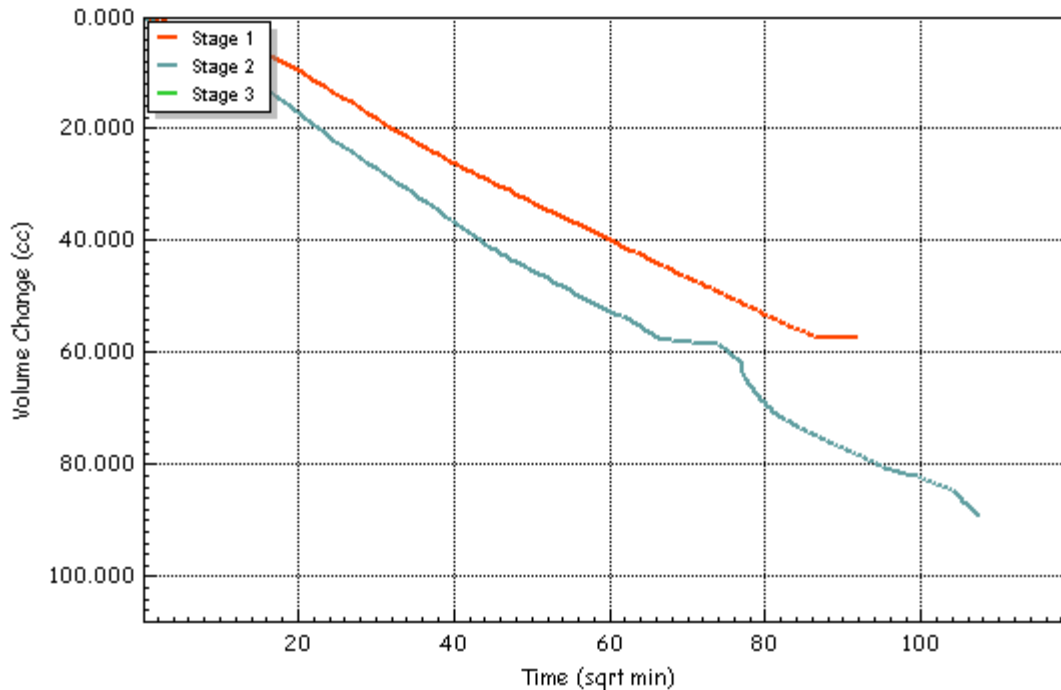
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	340	380	460
Initial Back Pressure	u_{bi}	(kPa)	300	300	300
Pore Water Pressure Input	u_{pwp}	(kPa)	325	348	-5
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
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Corrected Volume	V_c	(cc)	1772.476	1683.314	1683.314
t100	t_{100}	(min)	5839.33	120.00	27.84
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Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.00099	0.04607	0.08180

Notes

Side Drains Used During Test



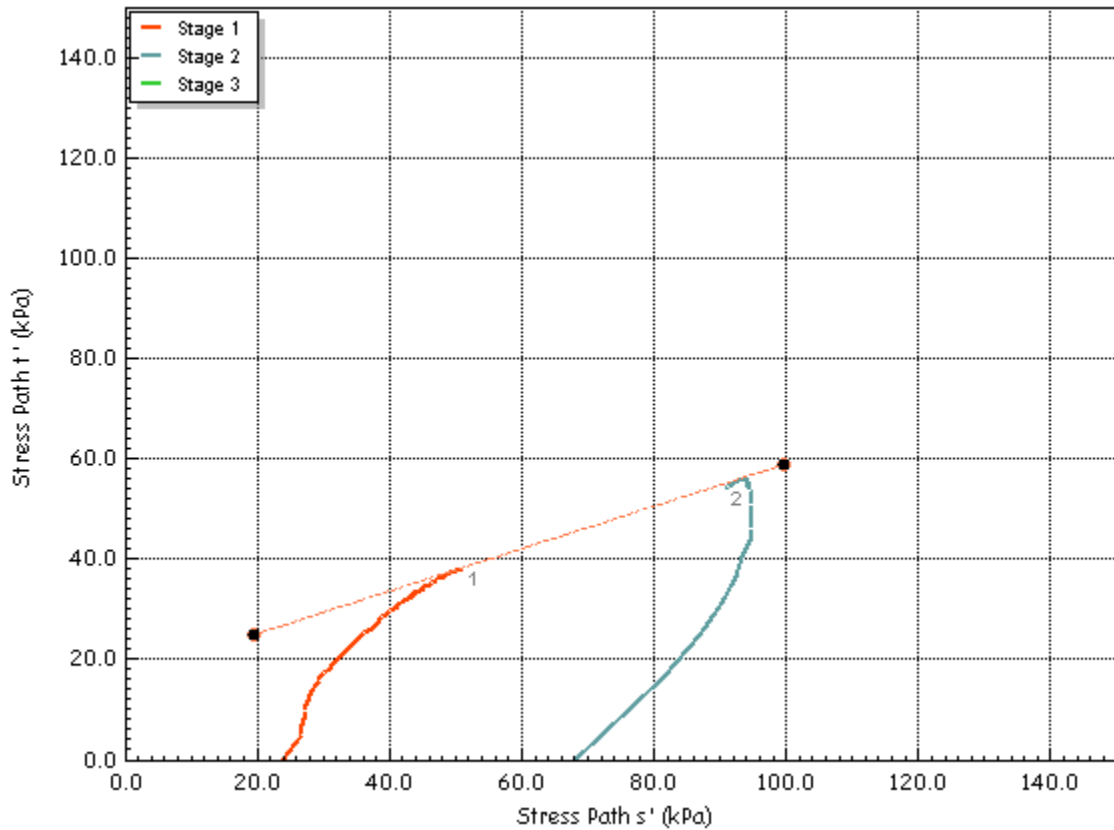
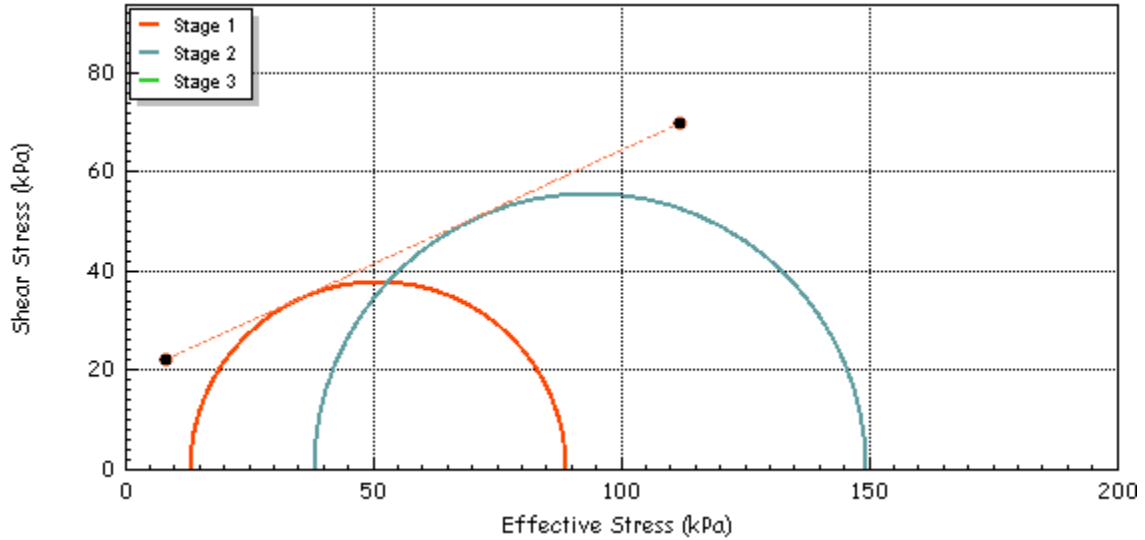
	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 15	
	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATK-BH02	
	Jobfile	64154	Sample	8	
	Client	SOCOTEC	Depth	4.0-4.7	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	18.50	Effective Cohesion c'	(kPa)	18.67
Effective Friction ϕ'	(deg)	24.7	Effective Friction ϕ'	(deg)	24.9

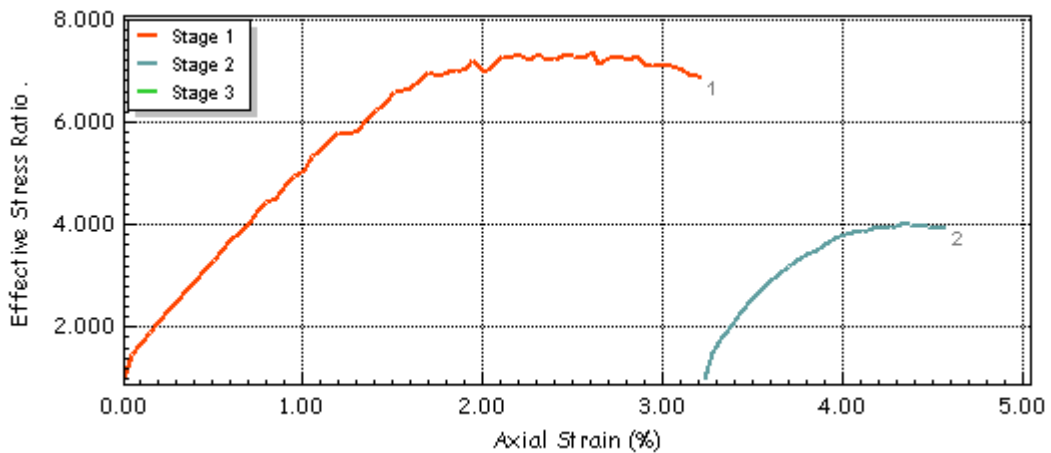
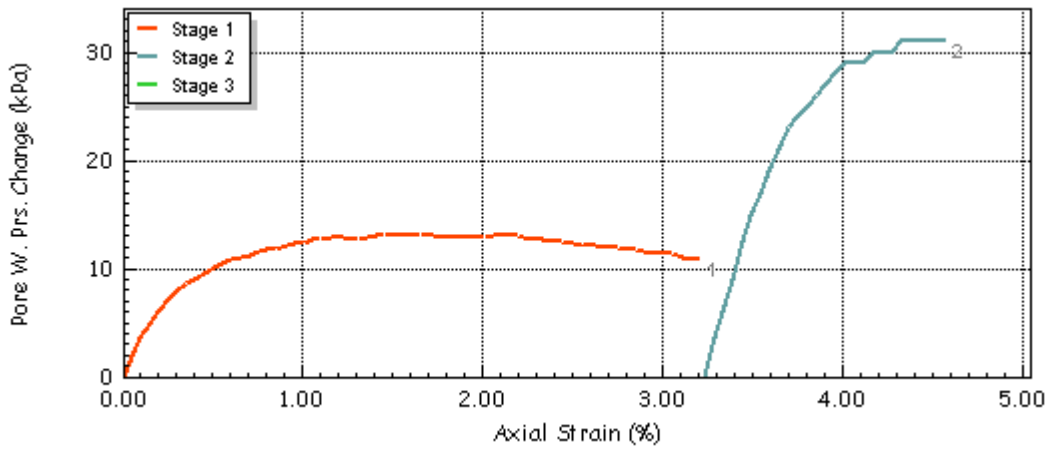
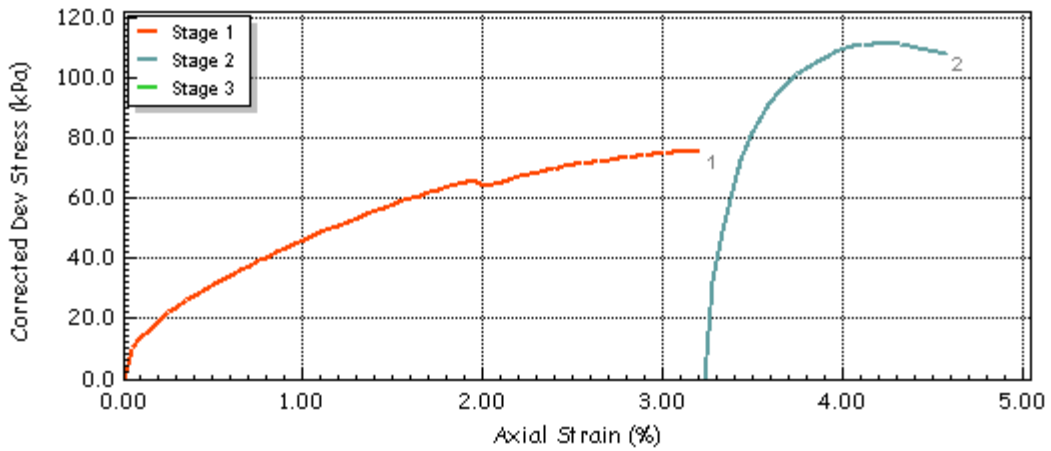



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 15	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATK-BH02	
	Jobfile	64154	Sample	8	
	Client	SOCOTEC	Depth	4.0-4.7	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

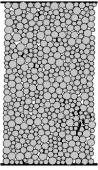


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 15	
	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATK-BH02	
	Jobfile	64154	Sample	8	
	Client	SOCOTEC	Depth	4.0-4.7	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained



Summary Report

Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">2.0</td> </tr> <tr> <td>Description</td> <td colspan="3">Brownish Grey, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.8</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.6</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3556.0</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.92</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	2.0			Description	Brownish Grey, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.8	Initial Sample Diameter	D_0	(mm)	105.6	Initial Sample Weight	W_0	(gr)	3556.0	Initial Bulk Density	ρ_0	(Mg/m ³)	1.92	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	2.0																																
Description	Brownish Grey, CLAY																																
Type	UT																																
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Initial Sample Weight	W_0	(gr)	3556.0																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.92																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions				Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)		570	590	630	
Initial Back Pressure	U_{bi}	(kPa)		550	550	550	
Strain Rate	m_s	(mm/min)		0.08801	0.01400	0.08599	
Membrane Thickness	m_b	(mm)		0.400			
Displacement Input	L_{IP}	(mm)		CH 2			
Load Input	N_{IP}	(N)		CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)		CH 3			
Sample Volume	V	(cc)		CH 6			
Initial Moisture	w_i	(%)		28			
Initial Dry Density	ρ_{di}	(Mg/m ³)		1.50			
Initial Voids Ratio	e_i	.		0.771			
Initial Degree of Saturation	S_i	(%)		97			
B Value	B	.		0.98			

Final Conditions				Stage 1	2	3	4
Final Moisture	w_f	(%)		28			
Final Dry Density	ρ_{df}	(Mg/m ³)		1.60			
Final Voids Ratio	e_f	.		0.656			
Final Degree of Saturation	S_f	(%)		100.0			
Failure Criteria	.			Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)		1.10	2.00	0.00	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)		26.2	33.9	0.0	
Minor Stress At Failure	σ_3'	(kPa)		12.1	19.9	0.0	
Major Stress At Failure	σ_1'	(kPa)		38.3	53.8	0.0	
Principal Stress At Failure	σ_1' / σ_3'			3.166	2.704	0.000	
PwP At Failure Criteria	u_f			558.3	569.3	0.0	

Notes				 Compound
Side Drains Used During Test				
	1	2	3	
Side Drain Correction at Failure (kpa)	3.31	3.31	0.00	
Membrane Correction at Failure (kpa)	0.11	0.21	0.00	

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 14	 2788
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH05	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

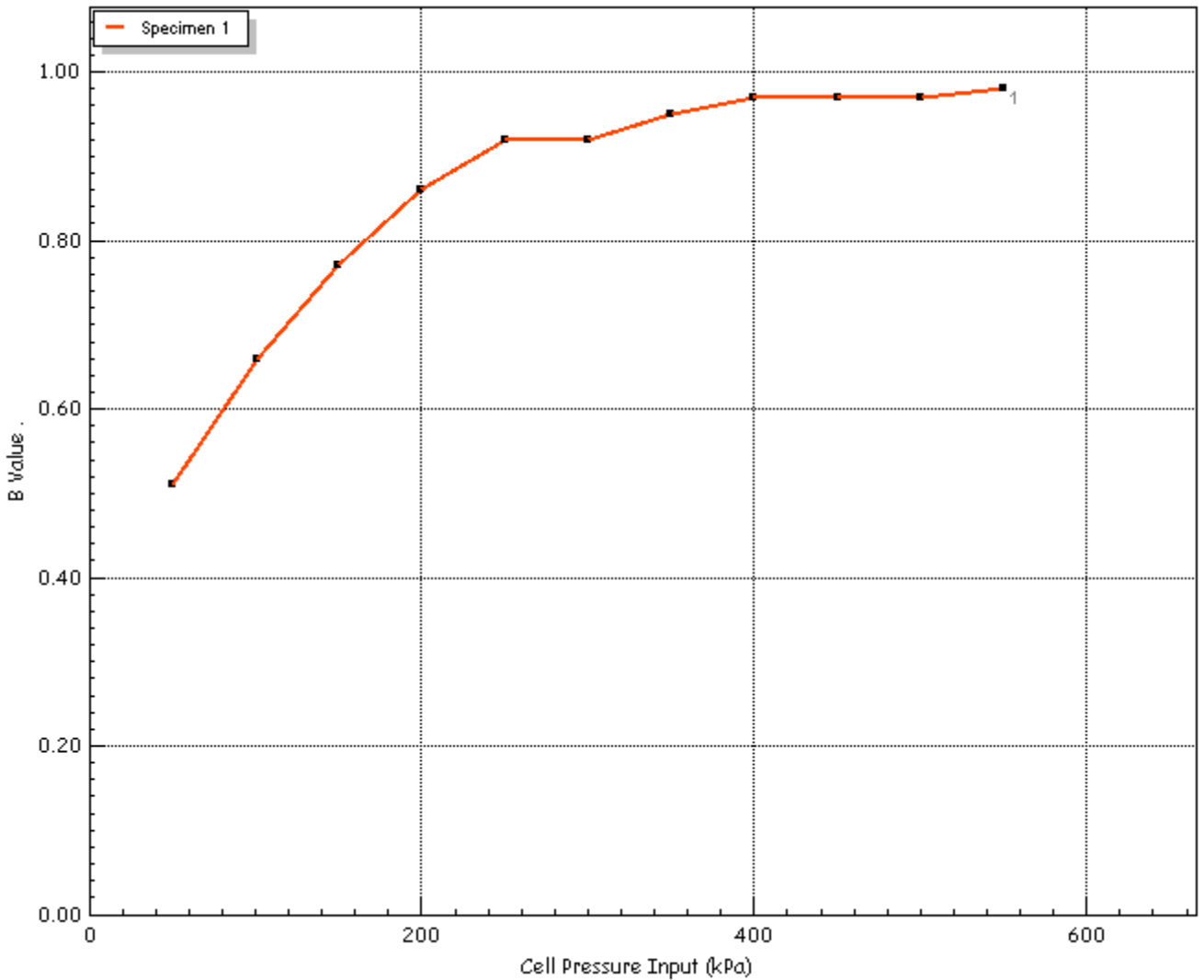
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	550
Pore Water Pressure Input	u_{pwp}	(kPa)	541
B Value	B	.	0.98



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 14	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH05	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

*

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	570	590	630
Initial Back Pressure	u_{bi} (kPa)	550	550	550
Pore Water Pressure Input	u_{pwp} (kPa)	563	574	596
Drainage Method		Radial+One End		

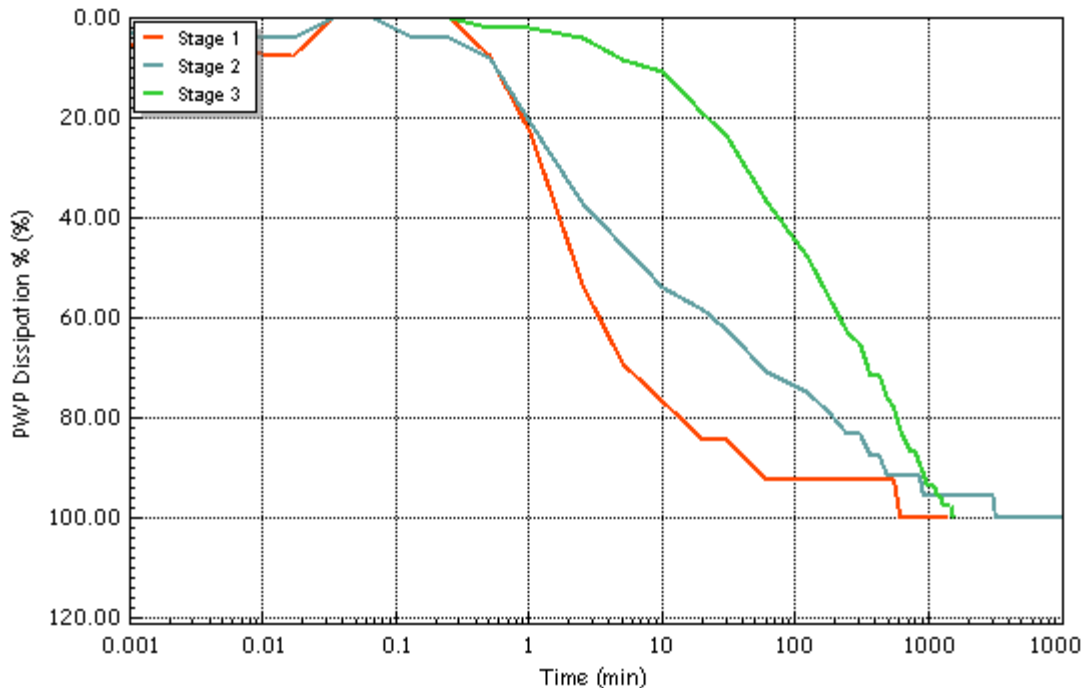
Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$ (%)	0.81	3.37	2.29
Corrected Length	L_c (mm)	211.2	206.4	201.0
Corrected Area	A_c (cm ²)	87.11	86.15	86.34
Corrected Volume	V_c (cc)	1839.947	1777.504	1734.957
t100	t_{100} (min)	27.84	4091.08	925.55
Consolidation	c_v (m ² /year)	0.082	0.001	0.002
Compressibility	m_v (m ² /MN)	0.62	1.4	0.50
Test Time	t_F (h:m:s)	02:00:00	122:43:56	27:45:59
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.08801	0.00140	0.00603

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure(kpa)



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 14	
	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH05	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	570	590	630
Initial Back Pressure	u_{bi}	(kPa)	550	550	550
Pore Water Pressure Input	u_{pwp}	(kPa)	563	574	596
Drainage Method			Radial+One End		

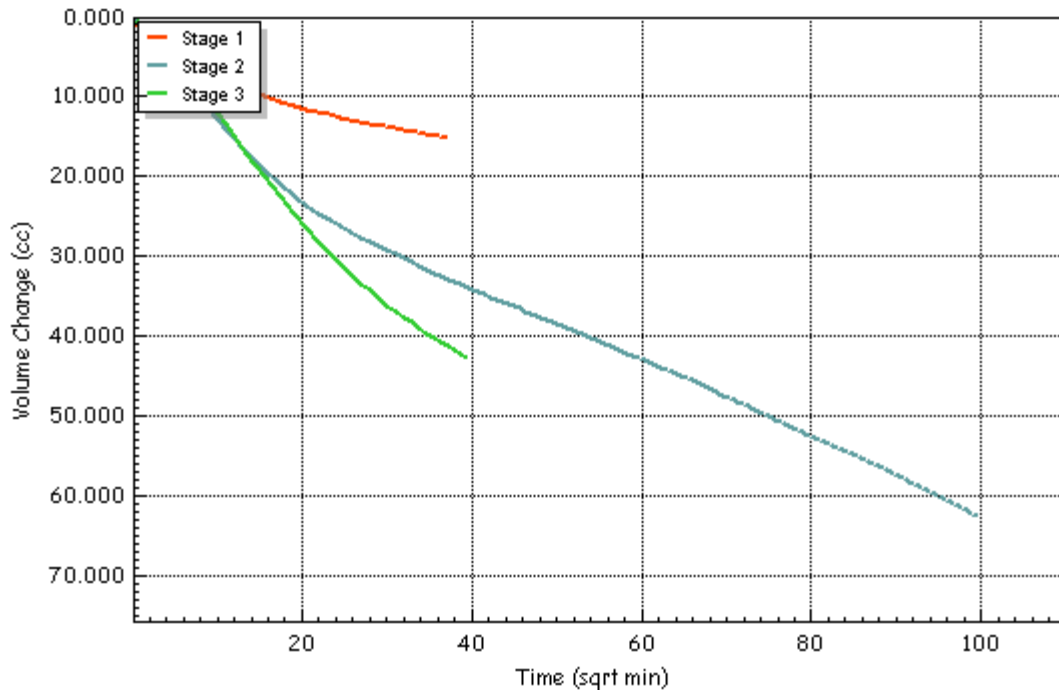
Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	0.81	3.37	2.29
Corrected Length	L_c	(mm)	211.2	206.4	201.0
Corrected Area	A_c	(cm ²)	87.11	86.15	86.34
Corrected Volume	V_c	(cc)	1839.947	1777.504	1734.957
t100	t_{100}	(min)	27.84	4091.08	925.55
Consolidation	c_v	(m ² /year)	0.082	0.001	0.002
Compressibility	m_v	(m ² /MN)	0.62	1.4	0.50
Test Time	t_F	(h:m:s)	02:00:00	122:43:56	27:45:59
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08801	0.00140	0.00603

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure(kpa)



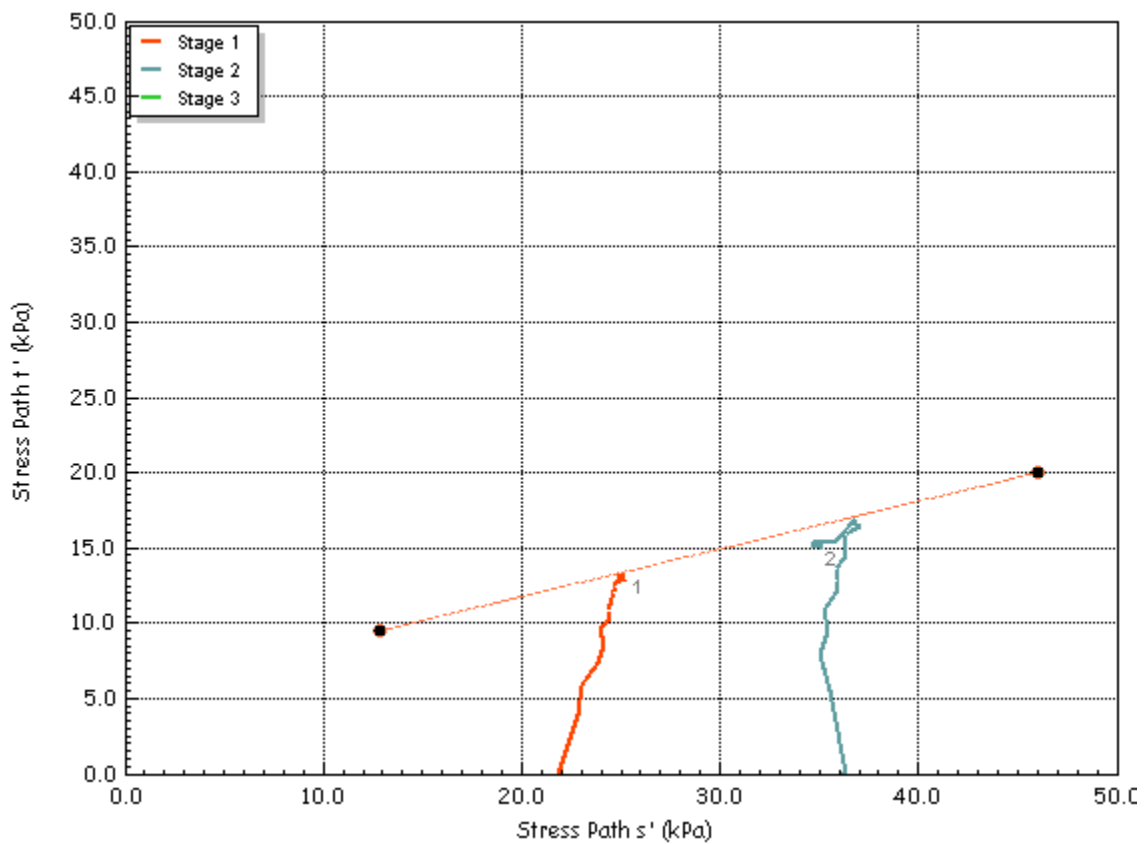
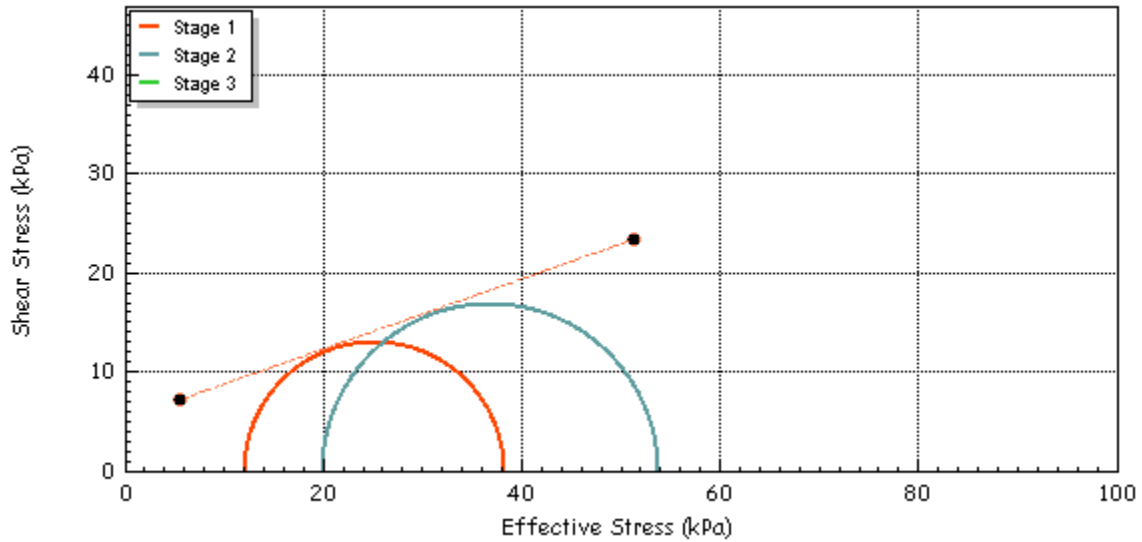
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	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH05	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	5.20	Effective Cohesion c'	(kPa)	5.73
Effective Friction ϕ'	(deg)	19.5	Effective Friction ϕ'	(deg)	18.4

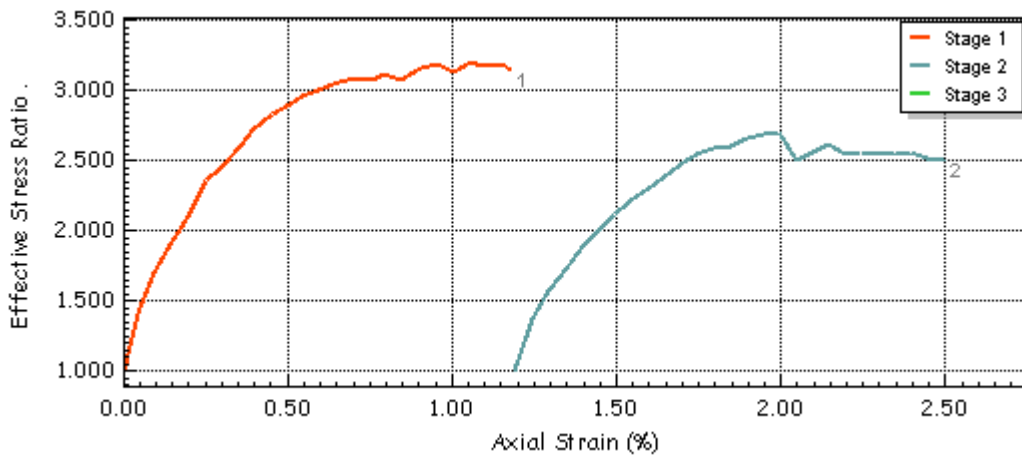
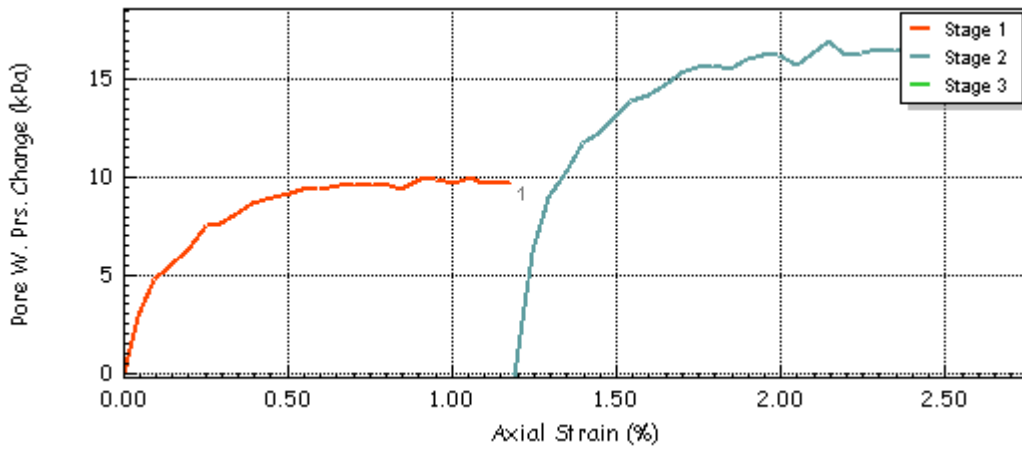
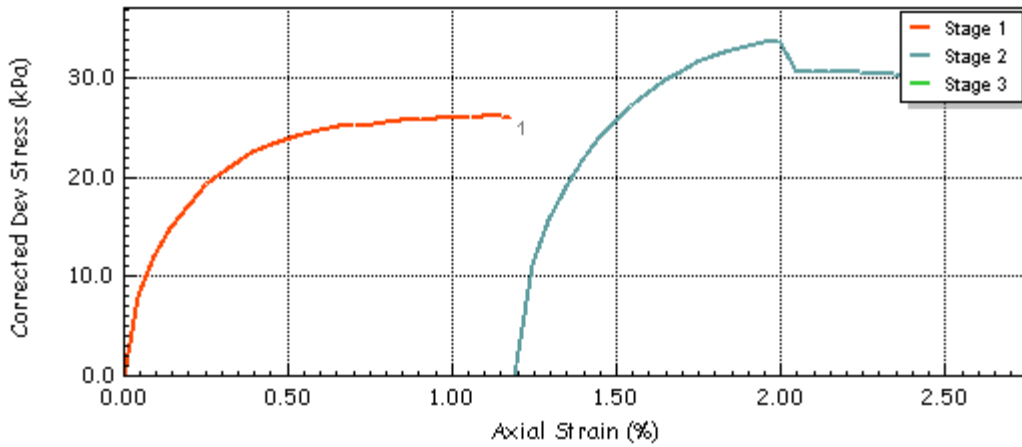



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 14	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH05	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots



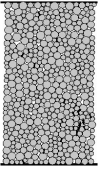
	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 14	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH05	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

*

Effective Stress Triaxial Compression

Consolidated Undrained


Summary Report

Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td style="width: 30%;">4.0</td> <td style="width: 40%;"></td> </tr> <tr> <td>Description</td> <td>Brown, CLAY</td> <td></td> </tr> <tr> <td>Type</td> <td>UT</td> <td></td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0 (mm)</td> <td>211.3</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0 (mm)</td> <td>105.4</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0 (gr)</td> <td>3554.4</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0 (Mg/m³)</td> <td>1.93</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s (Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	4.0		Description	Brown, CLAY		Type	UT		Initial Sample Length	L_0 (mm)	211.3	Initial Sample Diameter	D_0 (mm)	105.4	Initial Sample Weight	W_0 (gr)	3554.4	Initial Bulk Density	ρ_0 (Mg/m ³)	1.93	Particle Density (Assumed)	ρ_s (Mg/m ³)	2.65
Depth	4.0																								
Description	Brown, CLAY																								
Type	UT																								
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Initial Bulk Density	ρ_0 (Mg/m ³)	1.93																							
Particle Density (Assumed)	ρ_s (Mg/m ³)	2.65																							

Initial Conditions		Stage 1	2	3	4
Initial Cell Pressure	σ_{3i} (kPa)	340	380	380	
Initial Back Pressure	U_{bi} (kPa)	300	300	235	
Strain Rate	m_s (mm/min)	0.01038	0.00468	0.08230	
Membrane Thickness	m_b (mm)	0.400			
Displacement Input	L_{IP} (mm)	CH 2			
Load Input	N_{IP} (N)	CH 4			
Pore Water Pressure Input	u_{pwp} (kPa)	CH 3			
Sample Volume	V (cc)	CH 6			
Initial Moisture	ω_i (%)	27			
Initial Dry Density	ρ_{di} (Mg/m ³)	1.52			
Initial Voids Ratio	e_i	0.747			
Initial Degree of Saturation	S_i (%)	96			
B Value	B	0.99			

Final Conditions					
Final Moisture	ω_f (%)	26			
Final Dry Density	ρ_{df} (Mg/m ³)	1.59			
Final Voids Ratio	e_f	0.664			
Final Degree of Saturation	S_f (%)	100.0			
		Stage 1	2	3	4
Failure Criteria		Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f (%)	4.90	7.26	0.00	
Stress At Failure	$(\sigma_1 - \sigma_3)$ (kPa)	46.2	70.9	0.0	
Minor Stress At Failure	σ_3' (kPa)	19.8	46.1	0.0	
Major Stress At Failure	σ_1' (kPa)	66.0	117.0	0.0	
Principal Stress At Failure	σ_1' / σ_3'	3.334	2.539	0.000	
PwP At Failure Criteria	u_f	320.2	333.9	0.0	

Notes				 Compound
Side Drains Used During Test				
	1	2	3	
Side Drain Correction at Failure (kpa)	3.32	3.32	0.00	
Membrane Correction at Failure (kpa)	0.51	0.68	0.00	

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 1	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH06	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	4.0	
Operator	██████████	Checked	██████████	Approved	██████████



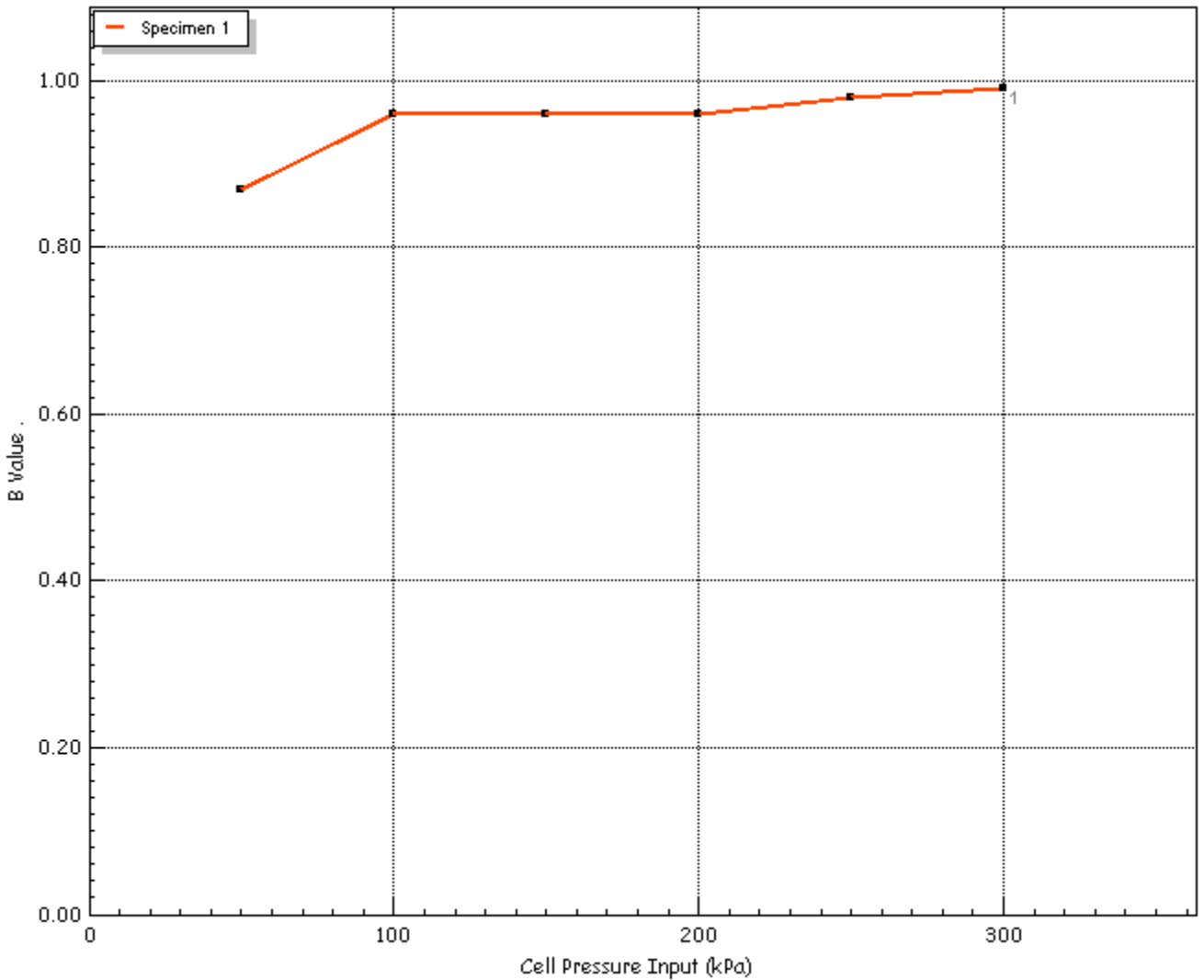
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	300
Pore Water Pressure Input	u_{pwp}	(kPa)	294
B Value	B	.	0.99



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 1	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH06	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	4.0	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

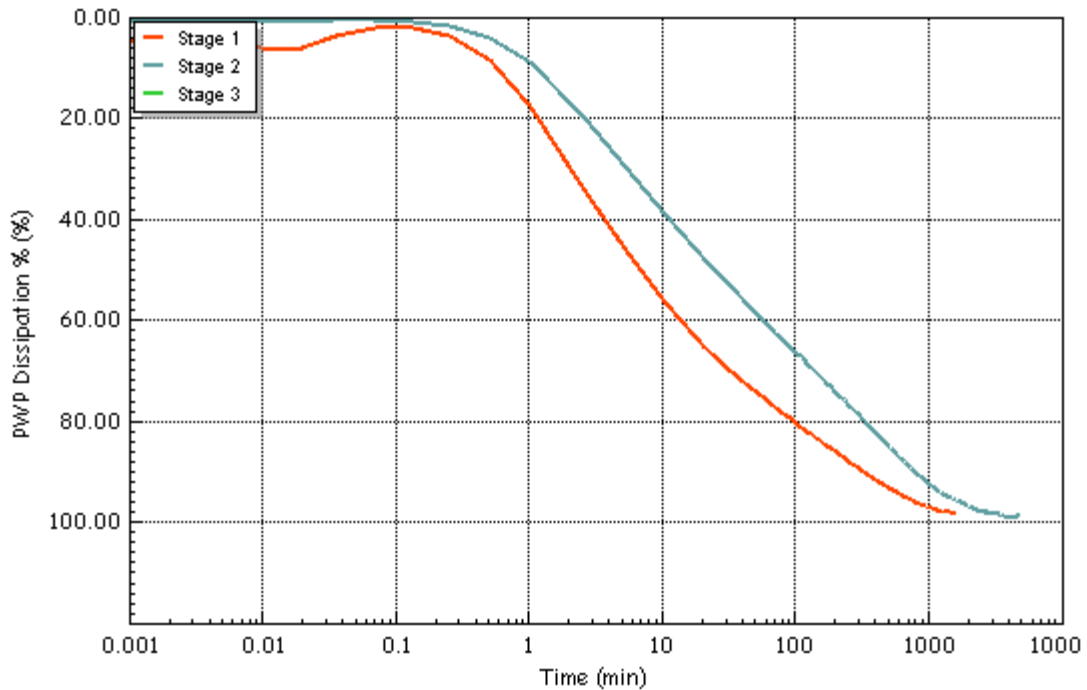
Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	340	380	473
Initial Back Pressure	u_{bi} (kPa)	300	300	313
Pore Water Pressure Input	u_{pwp} (kPa)	334	357	7
Drainage Method		Radial+One End		

Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	98.37	98.73	0.00
Volumetric Strain	$\epsilon_v\%$ (%)	2.35	2.43	0.00
Corrected Length	L_c (mm)	209.6	197.5	191.4
Corrected Area	A_c (cm ²)	85.88	88.89	91.73
Corrected Volume	V_c (cc)	1800.272	1755.534	1755.534
t100	t_{100} (min)	561.00	1172.16	27.84
Consolidation	c_v (m ² /year)	0.004	0.002	0.087
Compressibility	m_v (m ² /MN)	0.71	0.43	0.000
Test Time	t_F (h:m:s)	16:49:48	35:09:53	02:00:00
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.01038	0.00468	0.07974

Notes

Side Drains Used During Test



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 1	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH06	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	4.0	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

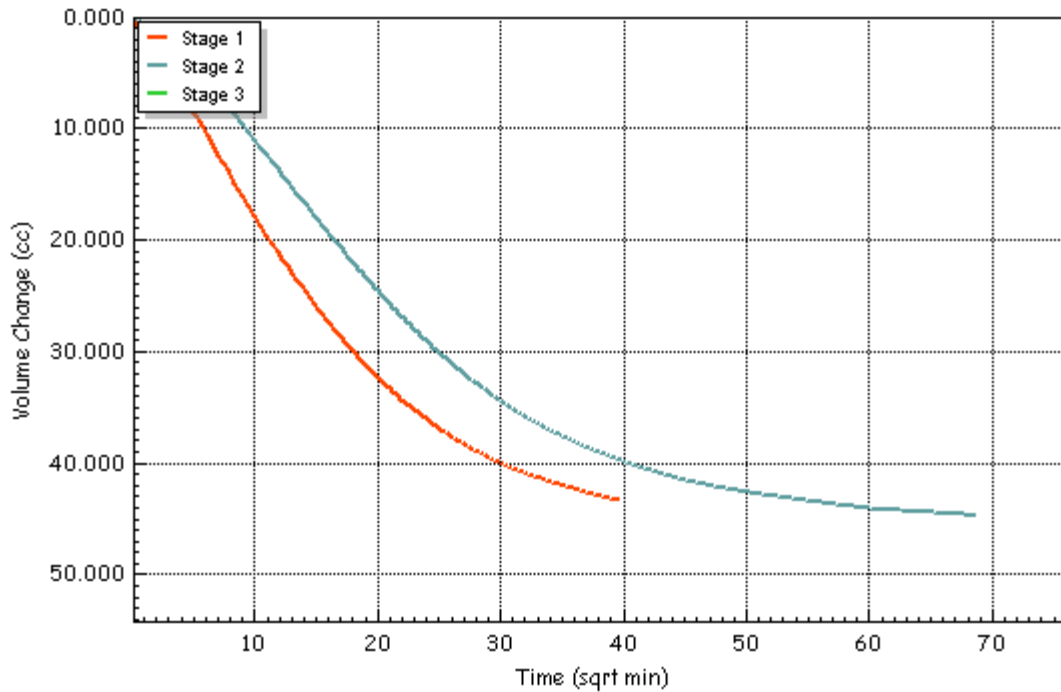
Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	340	380	473
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Shear Machine Speed	d_r	(mm/min)	0.01038	0.00468	0.07974

Notes

Side Drains Used During Test



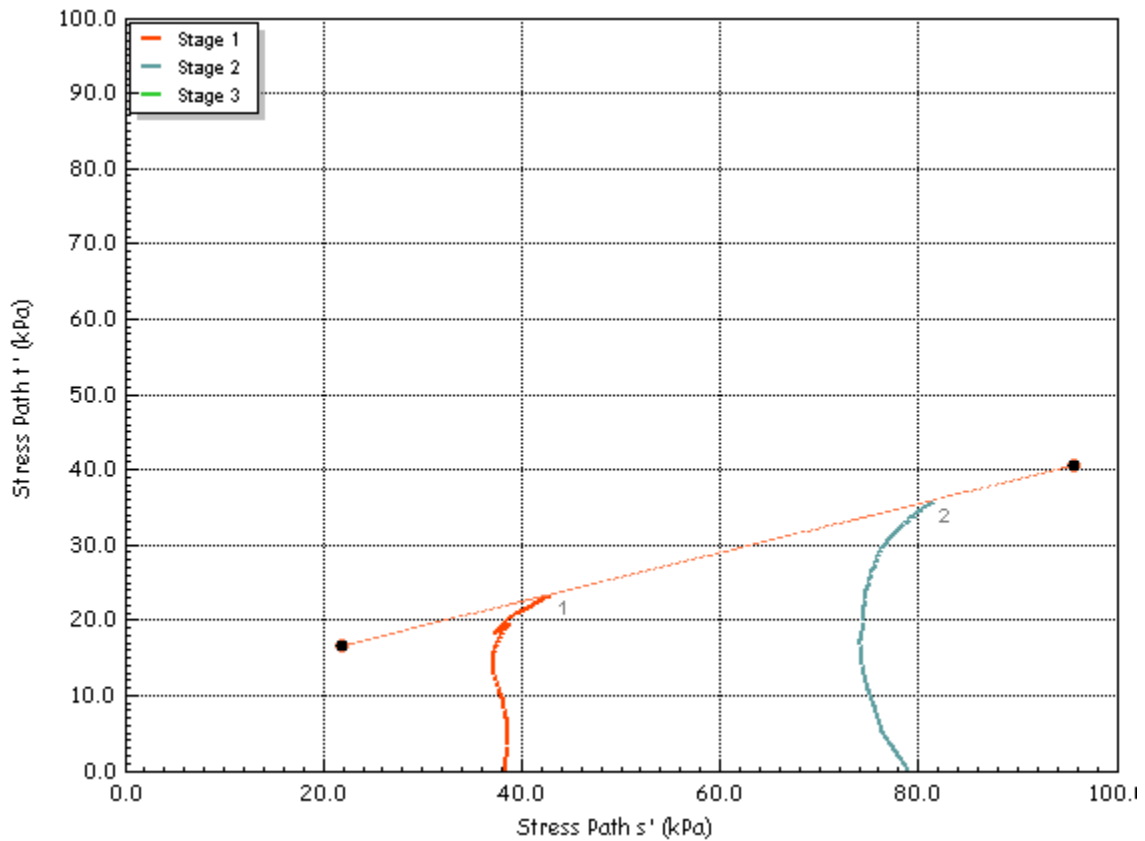
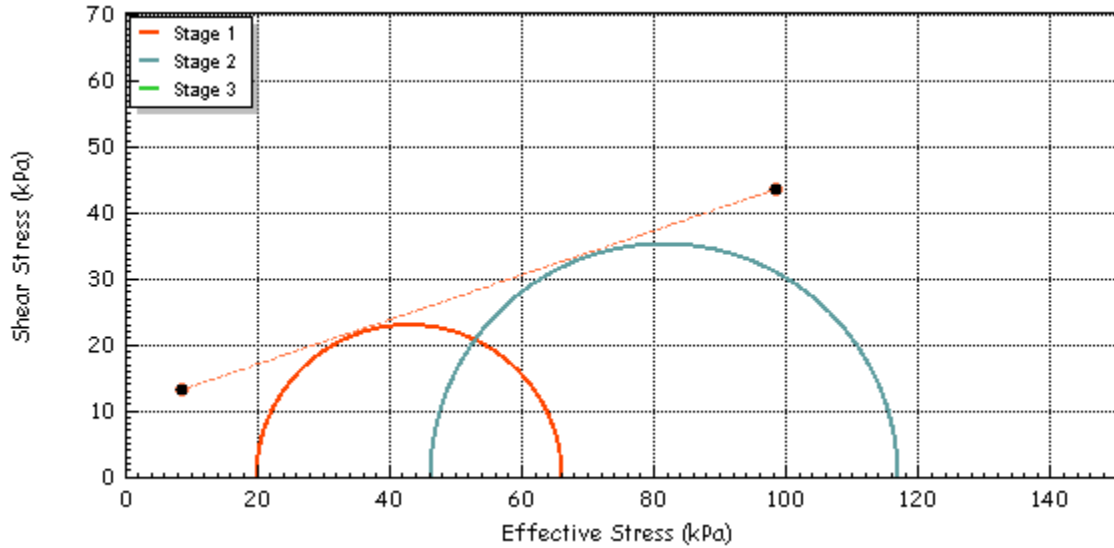
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	Database:	GEOSIT-151825\SQLEXPRESS2019 \ Effective	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH06	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	4.0	
	Operator	██████████	Checked	██████████	Approved

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	10.40	Effective Cohesion c'	(kPa)	10.09
Effective Friction ϕ'	(deg)	18.6	Effective Friction ϕ'	(deg)	19.0

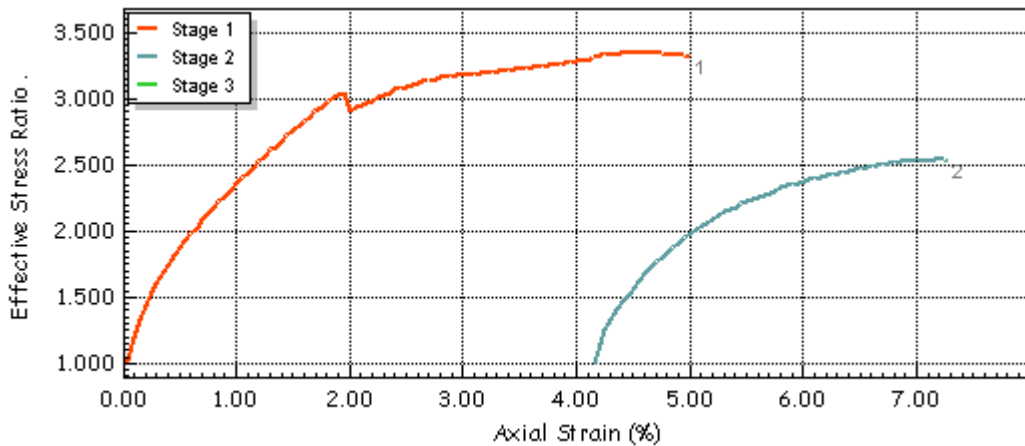
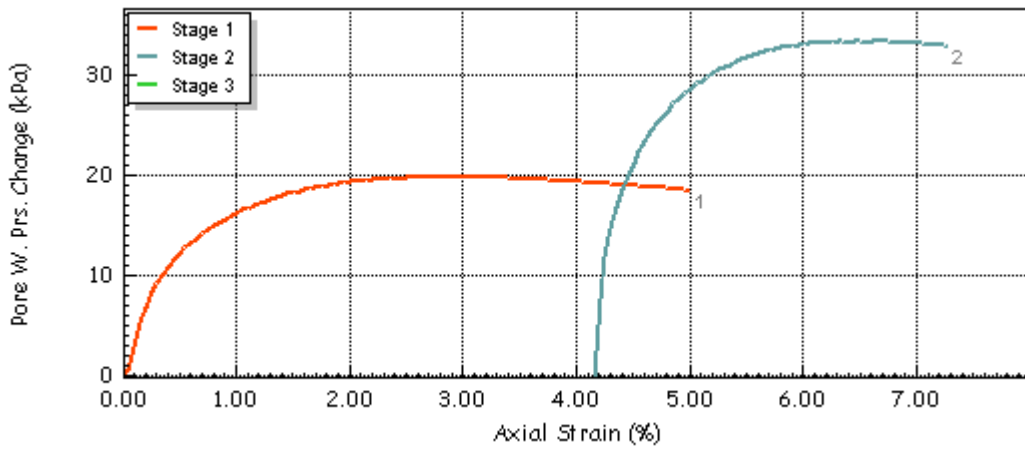
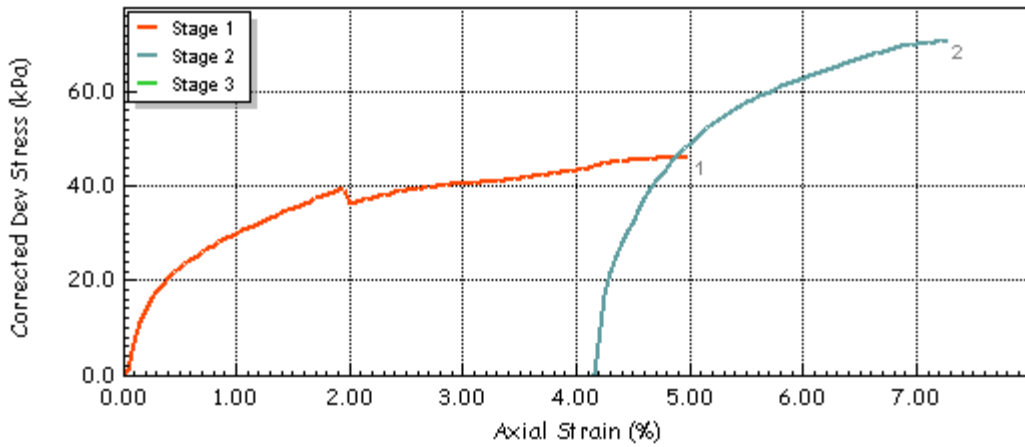


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 1	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH06	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	4.0	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

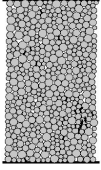


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 1	
	Database:	GEOSIT-151825\SQLEXPRESS2019 \ Effective	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH06	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	4.0	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained


Summary Report

Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">2.0</td> </tr> <tr> <td>Description</td> <td colspan="3">Brown Slightly Sandy, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.8</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.0</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3451.3</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.88</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	2.0			Description	Brown Slightly Sandy, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.8	Initial Sample Diameter	D_0	(mm)	105.0	Initial Sample Weight	W_0	(gr)	3451.3	Initial Bulk Density	ρ_0	(Mg/m ³)	1.88	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
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Initial Sample Weight	W_0	(gr)	3451.3																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.88																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	619	641	682	
Initial Back Pressure	U_{bi}	(kPa)	600	600	601	
Strain Rate	m_s	(mm/min)	0.04000	0.04000	0.04000	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	ω_i	(%)	30			
Initial Dry Density	ρ_{di}	(Mg/m ³)	1.45			
Initial Voids Ratio	e_i	.	0.831			
Initial Degree of Saturation	S_i	(%)	96			
B Value	B	.	0.99			

Final Conditions			Stage 1	2	3	4
Final Moisture	ω_f	(%)	29			
Final Dry Density	ρ_{df}	(Mg/m ³)	1.55			
Final Voids Ratio	e_f	.	0.709			
Final Degree of Saturation	S_f	(%)	100.0			
Failure Criteria	.	.	Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)	1.32	5.44	11.22	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)	36.2	45.4	63.9	
Minor Stress At Failure	σ_3'	(kPa)	11.4	25.0	49.3	
Major Stress At Failure	σ_1'	(kPa)	47.6	70.4	113.1	
Principal Stress At Failure	σ_1' / σ_3'		4.176	2.818	2.297	
PwP At Failure Criteria	u_f		607.8	616.0	632.9	

Notes				 Plastic
Side Drains Used During Test				
	1	2	3	
Side Drain Correction at Failure (kpa)	3.33	3.33	3.33	
Membrane Correction at Failure (kpa)	0.14	0.57	0.92	

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 13	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH07	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*



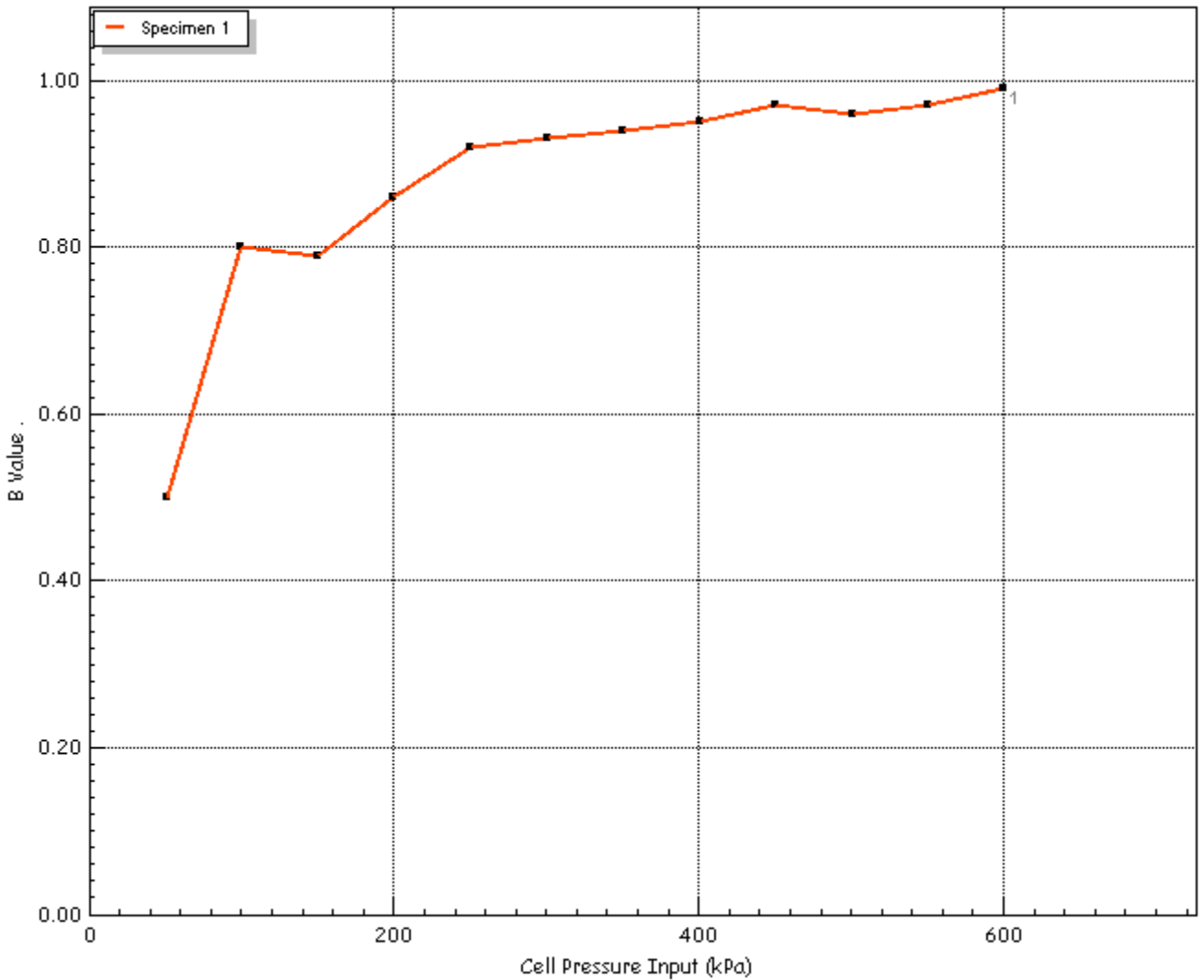
Effective Stress Triaxial Compression


Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	600
Pore Water Pressure Input	u_{pwp}	(kPa)	582
B Value	B	.	0.99



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 13	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH07	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

*

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	620	640	681
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	610	628	648
Drainage Method			Radial+One End		

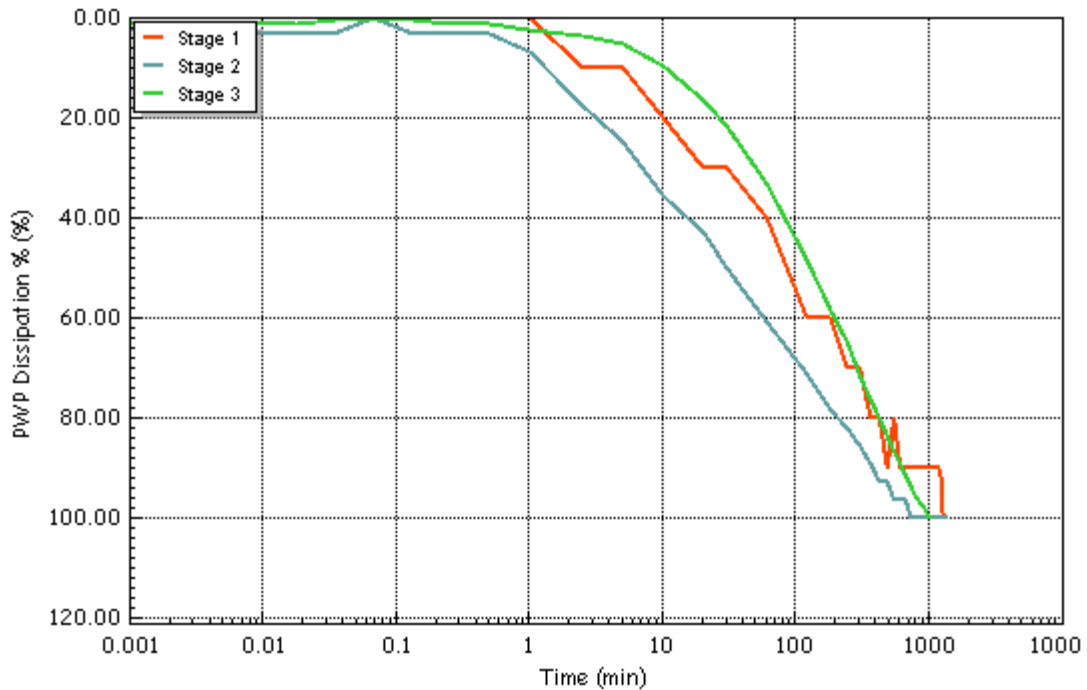
Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	0.46	1.45	4.79
Corrected Length	L_c	(mm)	211.5	207.7	195.9
Corrected Area	A_c	(cm ²)	86.32	86.63	87.39
Corrected Volume	V_c	(cc)	1825.521	1798.883	1711.079
t100	t_{100}	(min)	27.84	27.84	1380.30
Consolidation	c_v	(m ² /year)	0.082	0.082	0.002
Compressibility	m_v	(m ² /MN)	0.46	0.52	1.0
Test Time	t_F	(h:m:s)	02:00:00	02:00:00	41:24:32
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08811	0.08653	0.00394

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure (kpa)



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 13	
	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH07	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	620	640	681
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	610	628	648
Drainage Method			Radial+One End		

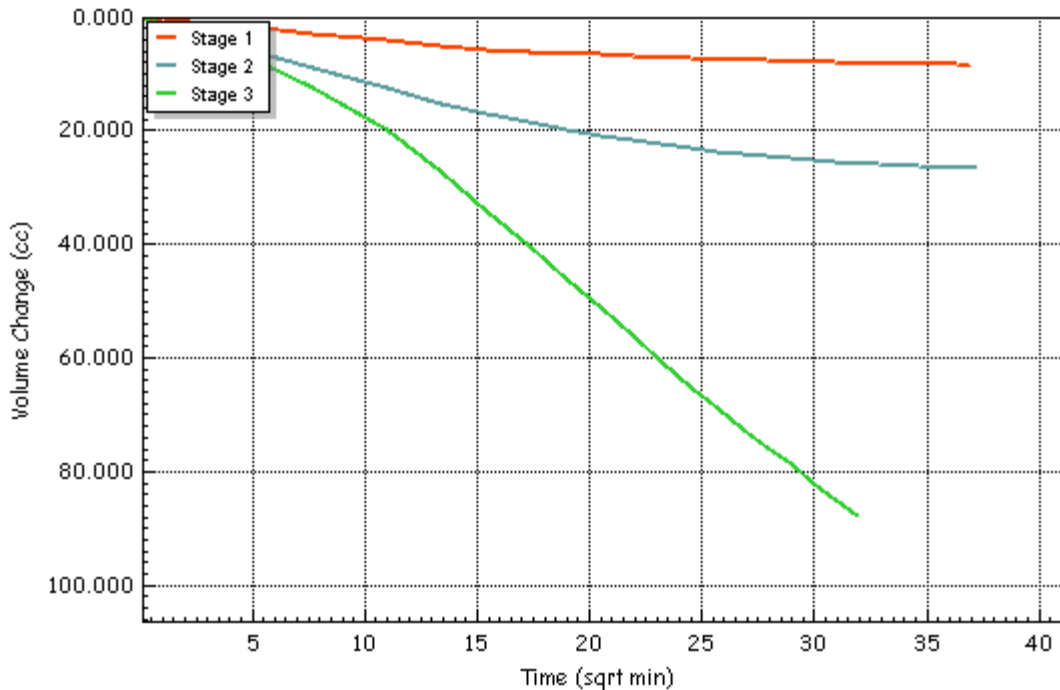
Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$	(%)	0.46	1.45	4.79
Corrected Length	L_c	(mm)	211.5	207.7	195.9
Corrected Area	A_c	(cm ²)	86.32	86.63	87.39
Corrected Volume	V_c	(cc)	1825.521	1798.883	1711.079
t100	t_{100}	(min)	27.84	27.84	1380.30
Consolidation	c_v	(m ² /year)	0.082	0.082	0.002
Compressibility	m_v	(m ² /MN)	0.46	0.52	1.0
Test Time	t_F	(h:m:s)	02:00:00	02:00:00	41:24:32
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08811	0.08653	0.00394

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure (kpa)



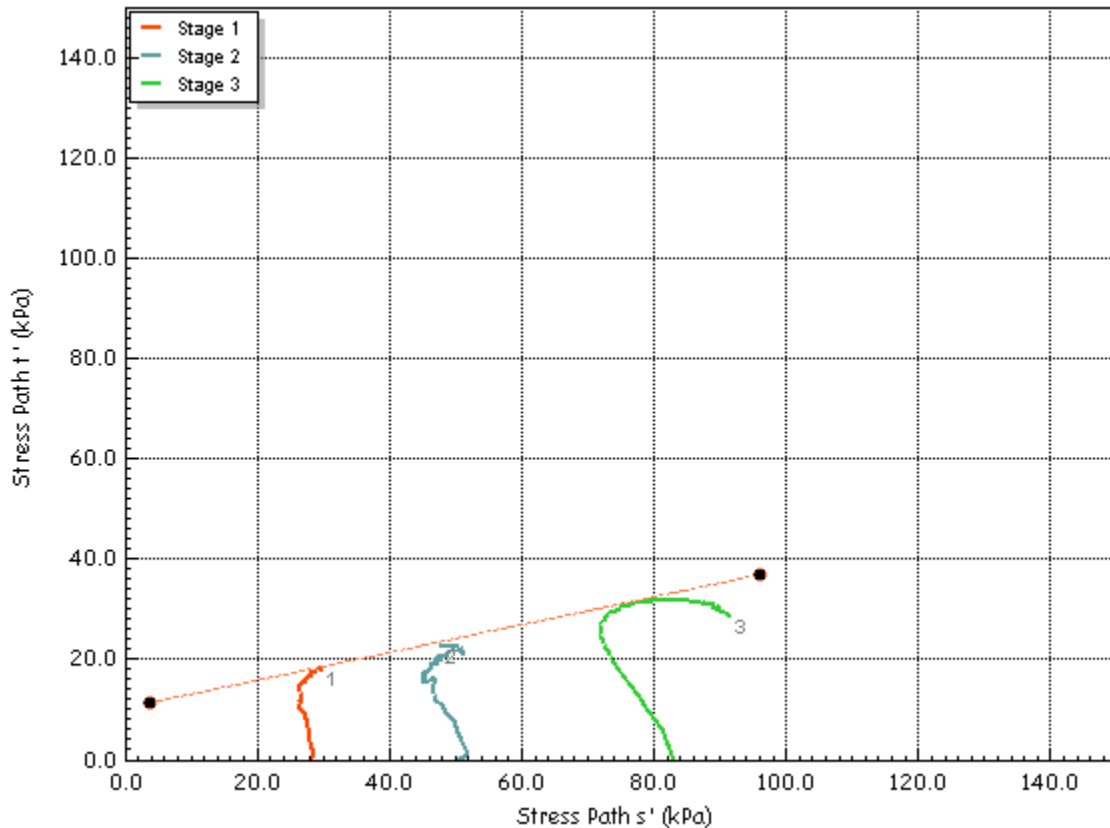
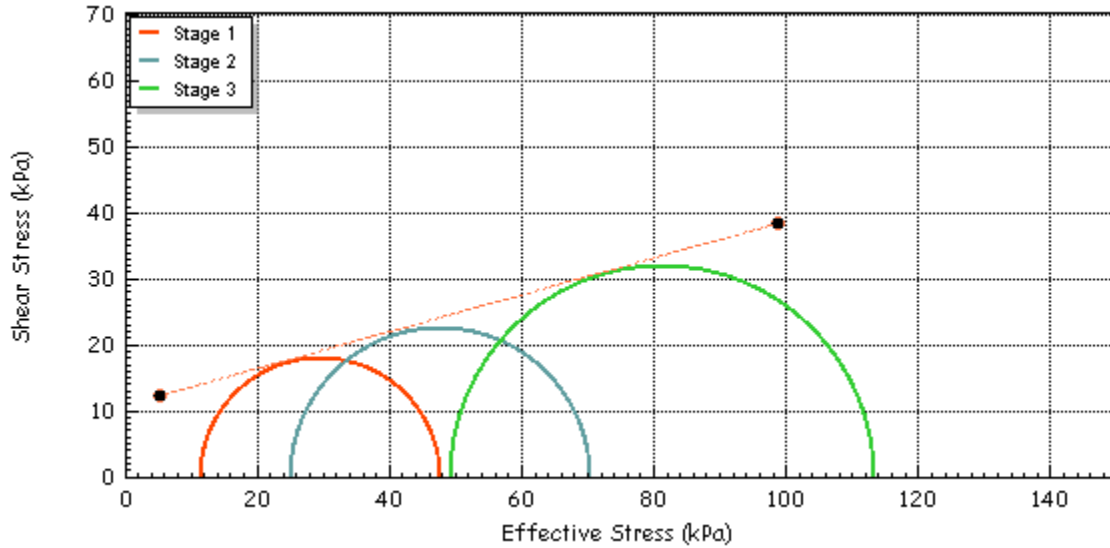
	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 13	
	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH07	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	10.72	Effective Cohesion c'	(kPa)	10.76
Effective Friction ϕ'	(deg)	15.6	Effective Friction ϕ'	(deg)	15.9

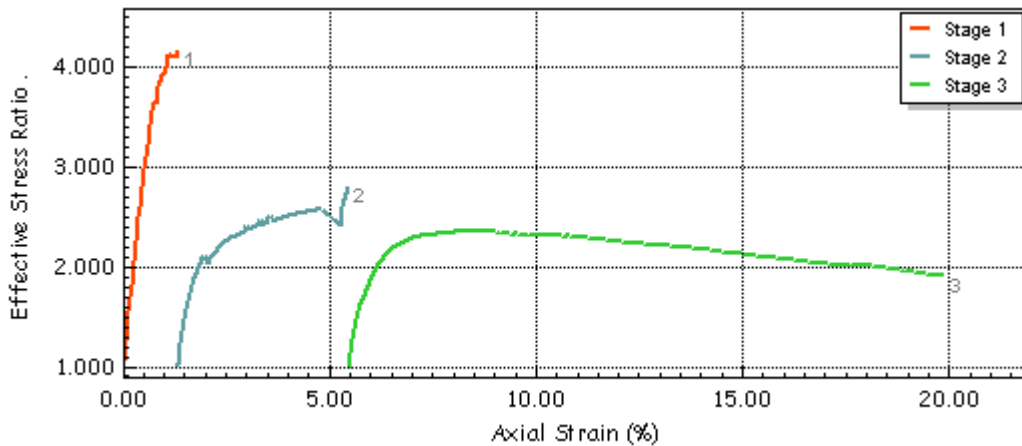
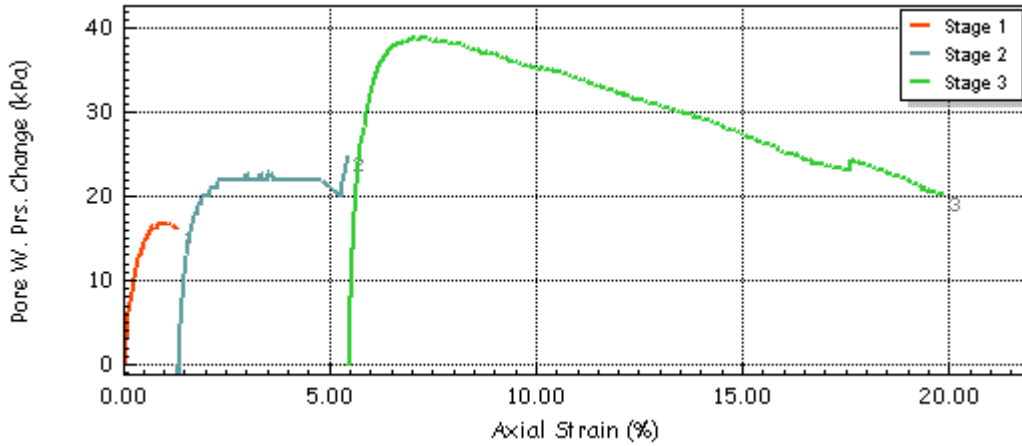
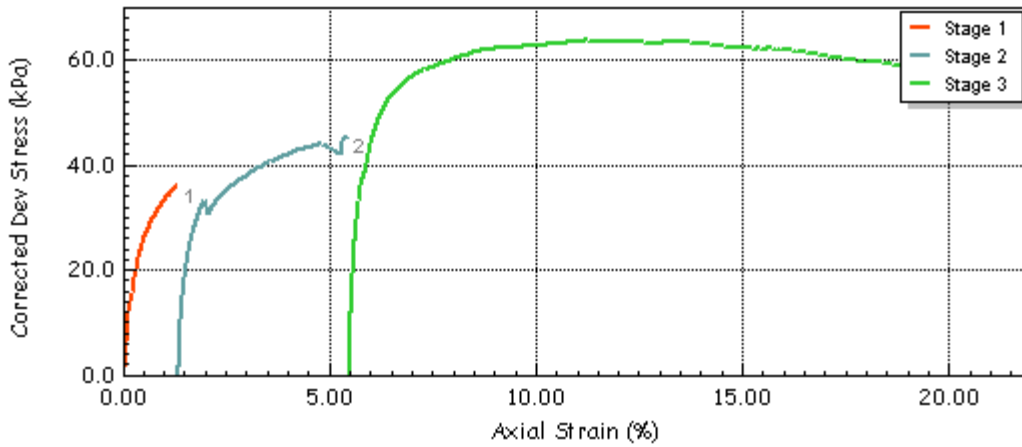


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 13	
	Database:	GSTL-152116\SQLXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH07	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

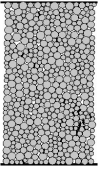


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 13	
	Database:	GSTL-152116\SQLEXPRESS2019 \ Effectives	Test Date	09/02/2023	
	Site Reference		Borehole	ATKRD_BH07	
	Jobfile	64154	Sample	2	
	Client	SOCOTEC	Depth	2.0	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report


Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">4.0-4.4</td> </tr> <tr> <td>Description</td> <td colspan="3">Greyish Brown, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>211.5</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.3</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3387.3</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.84</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	4.0-4.4			Description	Greyish Brown, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	211.5	Initial Sample Diameter	D_0	(mm)	105.3	Initial Sample Weight	W_0	(gr)	3387.3	Initial Bulk Density	ρ_0	(Mg/m ³)	1.84	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	4.0-4.4																																
Description	Greyish Brown, CLAY																																
Type	UT																																
Initial Sample Length	L_0	(mm)	211.5																														
Initial Sample Diameter	D_0	(mm)	105.3																														
Initial Sample Weight	W_0	(gr)	3387.3																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.84																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														

Initial Conditions		Stage 1	2	3	4
Initial Cell Pressure	σ_{3i} (kPa)	870	890	930	
Initial Back Pressure	U_{bi} (kPa)	850	850	850	
Strain Rate	m_s (mm/min)	0.04000	0.04000	0.04000	
Membrane Thickness	m_b (mm)	0.400			
Displacement Input	L_{IP} (mm)	CH 2			
Load Input	N_{IP} (N)	CH 4			
Pore Water Pressure Input	u_{pwp} (kPa)	CH 3			
Sample Volume	V (cc)	CH 6			
Initial Moisture	w_i (%)	36			
Initial Dry Density	ρ_{di} (Mg/m ³)	1.35			
Initial Voids Ratio	e_i	0.958			
Initial Degree of Saturation	S_i (%)	99			
B Value	B	0.96			

Final Conditions					
Final Moisture	w_f (%)	35			
Final Dry Density	ρ_{df} (Mg/m ³)	1.35			
Final Voids Ratio	e_f	0.958			
Final Degree of Saturation	S_f (%)	95.5			
Failure Criteria		Stage 1	2	3	4
Strain At Failure	ϵ_f (%)	1.94	4.88	7.77	
Stress At Failure	$(\sigma_1 - \sigma_3)$ (kPa)	30.4	38.0	47.1	
Minor Stress At Failure	σ_3' (kPa)	10.0	31.0	58.0	
Major Stress At Failure	σ_1' (kPa)	40.4	69.0	105.1	
Principal Stress At Failure	σ_1' / σ_3'	4.042	2.227	1.812	
PwP At Failure Criteria	u_f	860.0	860.0	873.0	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.32	3.32	3.32
Membrane Correction at Failure (kpa)	0.20	0.51	0.71


 Compound

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	01/01/0001	
	Site Reference		Borehole	ATKRD_BH10	
	Jobfile	64154	Sample	7	
	Client	SOCOTEC	Depth	4.0-4.4	
Operator	██████████	Checked	██████████	Approved	██████████



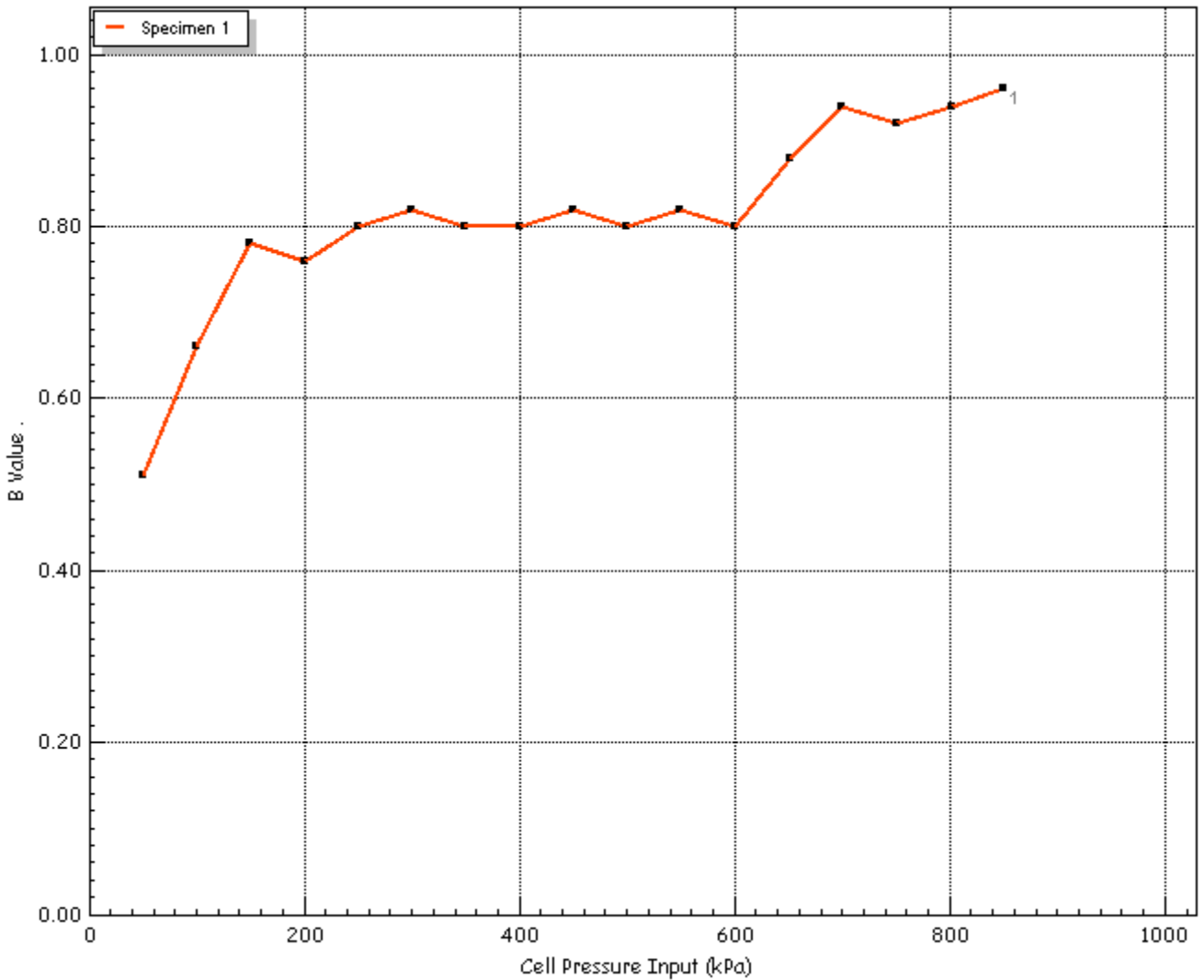
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	850
Pore Water Pressure Input	u_{pwp}	(kPa)	834
B Value	B	.	0.96



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	01/01/0001	
	Site Reference		Borehole	ATKRD_BH10	
	Jobfile	64154	Sample	7	
	Client	SOCOTEC	Depth	4.0-4.4	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	870	890	930
Initial Back Pressure	u_{bi}	(kPa)	850	850	850
Pore Water Pressure Input	u_{pwp}	(kPa)	5	5	5
Drainage Method			Radial+One End		

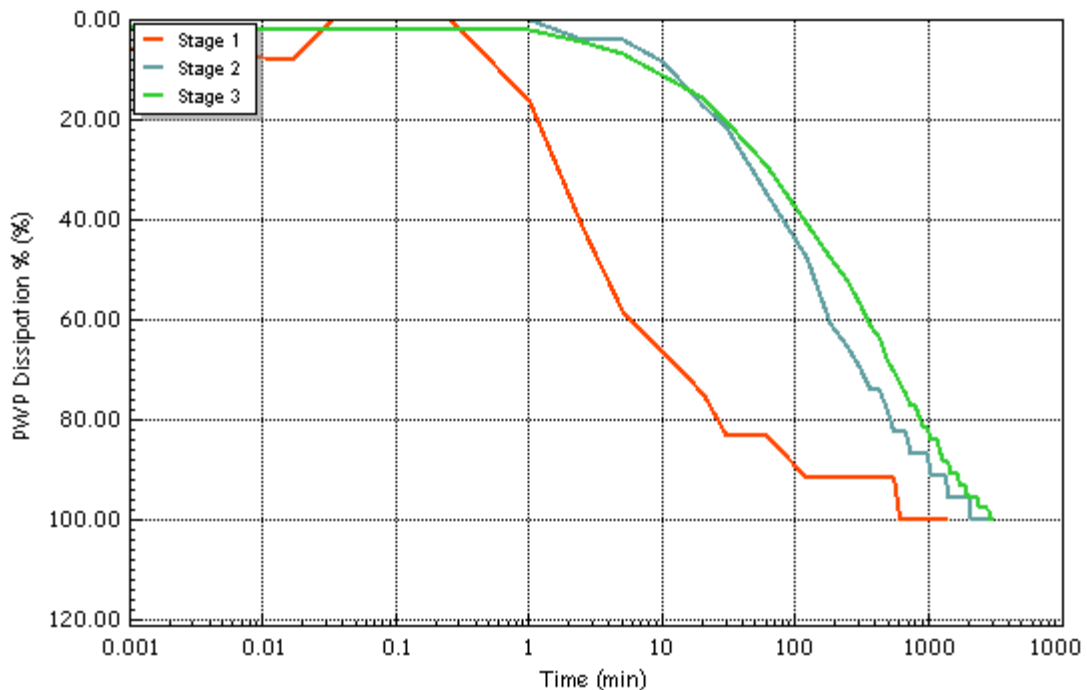
Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100	100	100
Volumetric Strain	$\epsilon_v\%$	(%)	0.00	0.00	0.00
Corrected Length	L_c	(mm)	211.5	203.7	201.3
Corrected Area	A_c	(cm ²)	87.09	90.40	91.49
Corrected Volume	V_c	(cc)	1841.861	1841.861	1841.861
t100	t_{100}	(min)	27.84	27.84	27.84
Consolidation	c_v	(m ² /year)	0.082	0.085	0.086
Compressibility	m_v	(m ² /MN)	0.000	0.000	0.000
Test Time	t_F	(h:m:s)	02:00:00	02:00:00	02:00:00
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08813	0.08489	0.08388

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure (kpa)



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	01/01/0001	
	Site Reference		Borehole	ATKRD_BH10	
	Jobfile	64154	Sample	7	
	Client	SOCOTEC	Depth	4.0-4.4	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	870	890	930
Initial Back Pressure	u_{bi}	(kPa)	850	850	850
Pore Water Pressure Input	u_{pwp}	(kPa)	5	5	5
Drainage Method			Radial+One End		

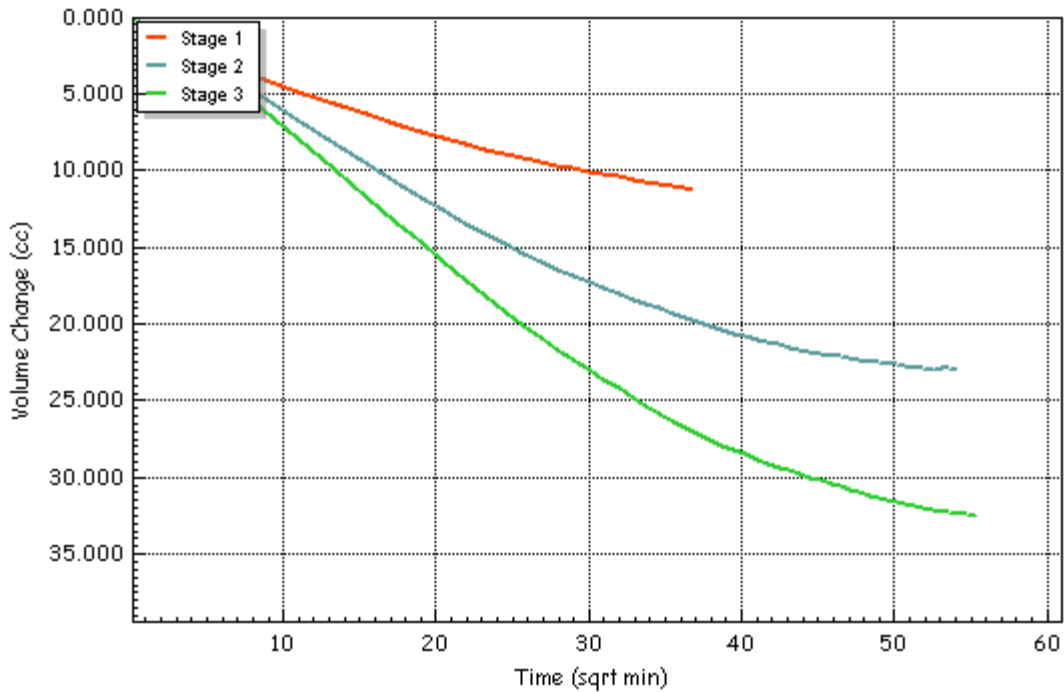
Final Conditions			Stage 1	2	3
PWP Dissipation %	$U\%$	(%)	100	100	100
Volumetric Strain	$\epsilon_v\%$	(%)	0.00	0.00	0.00
Corrected Length	L_c	(mm)	211.5	203.7	201.3
Corrected Area	A_c	(cm ²)	87.09	90.40	91.49
Corrected Volume	V_c	(cc)	1841.861	1841.861	1841.861
t100	t_{100}	(min)	27.84	27.84	27.84
Consolidation	c_v	(m ² /year)	0.082	0.085	0.086
Compressibility	m_v	(m ² /MN)	0.000	0.000	0.000
Test Time	t_F	(h:m:s)	02:00:00	02:00:00	02:00:00
Estimated Strain to Failure	$\epsilon\%$	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08813	0.08489	0.08388

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure (kpa)



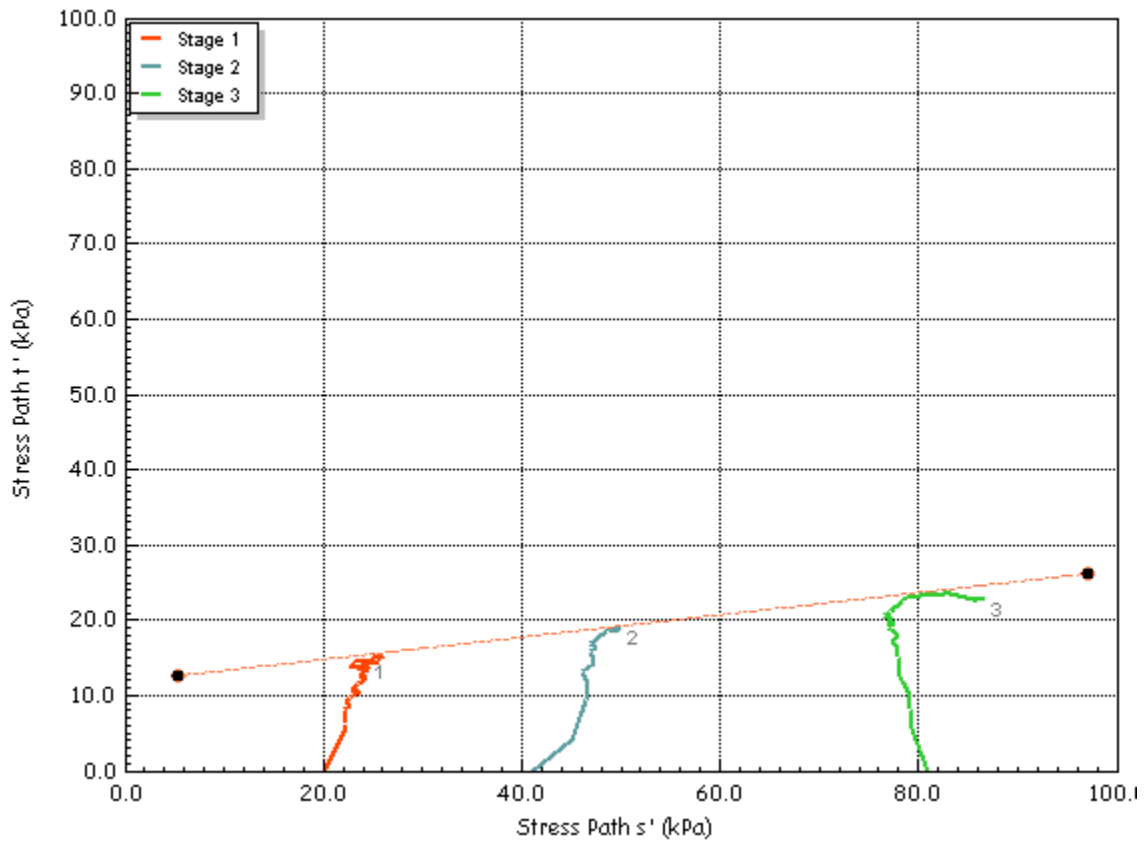
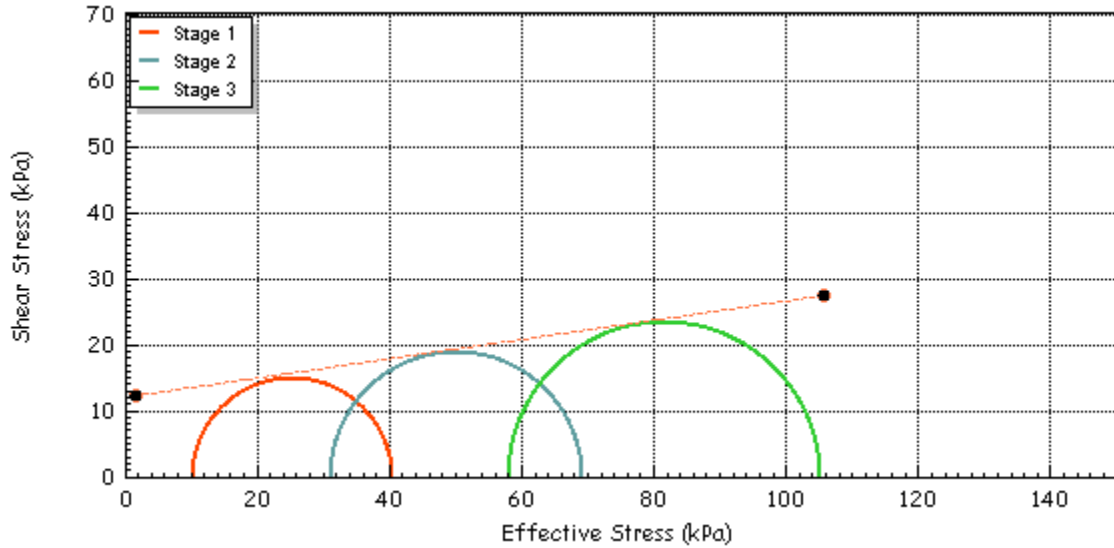
	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	01/01/0001	
	Site Reference		Borehole	ATKRD_BH10	
	Jobfile	64154	Sample	7	
	Client	SOCOTEC	Depth	4.0-4.4	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	11.91	Effective Cohesion c'	(kPa)	11.91
Effective Friction ϕ'	(deg)	8.5	Effective Friction ϕ'	(deg)	8.6

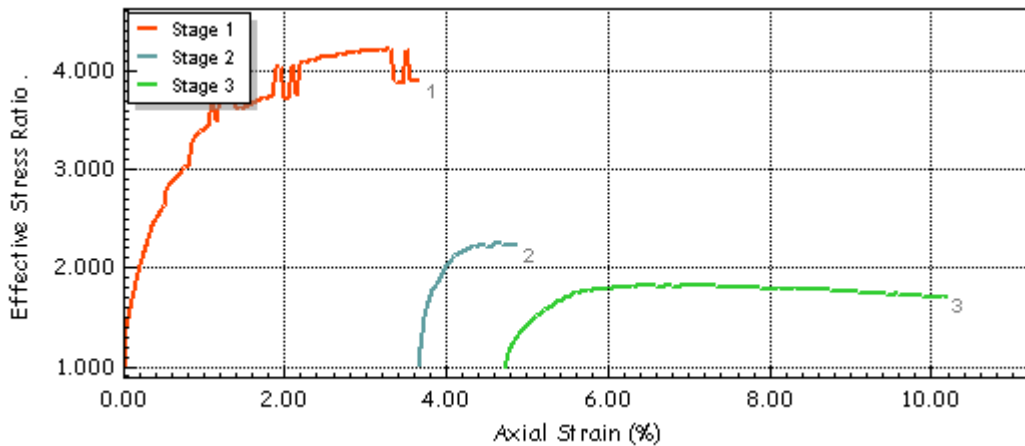
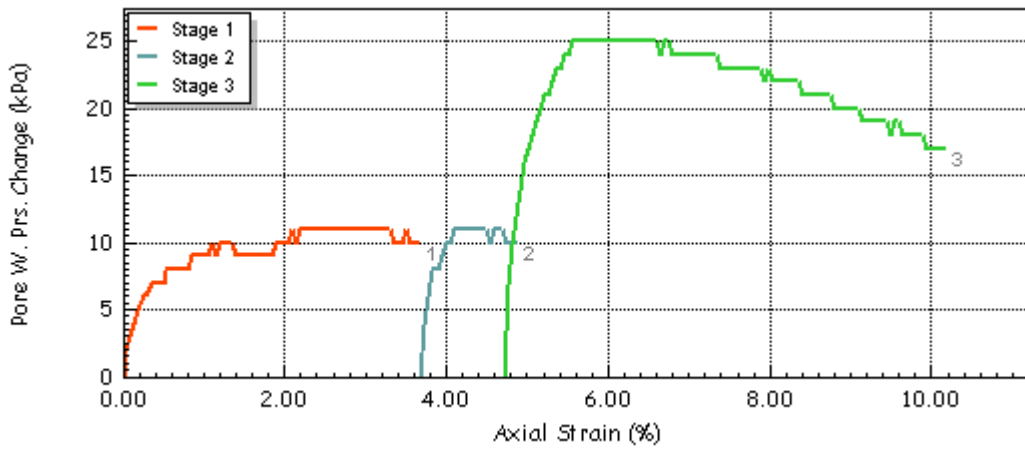
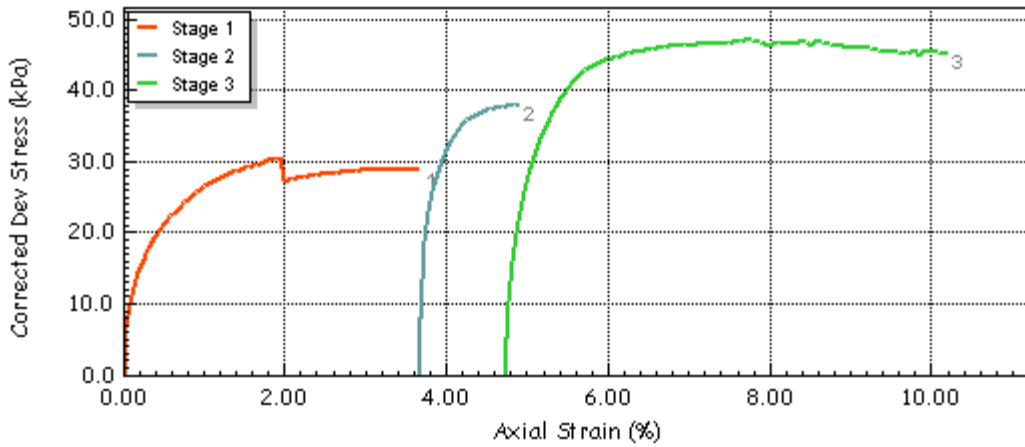



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	01/01/0001	
	Site Reference		Borehole	ATKRD_BH10	
	Jobfile	64154	Sample	7	
	Client	SOCOTEC	Depth	4.0-4.4	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

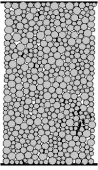


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 2	
	Database:	GEOSIT-151825\SQLXPRESS2019 \ Effective	Test Date	01/01/0001	
	Site Reference		Borehole	ATKRD_BH10	
	Jobfile	64154	Sample	7	
	Client	SOCOTEC	Depth	4.0-4.4	
Operator	██████████	Checked	██████████	Approved	██████████

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report


Sample Details  <i>sketch showing specimen location in original sample</i>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Depth</td> <td colspan="3">3.0-3.7</td> </tr> <tr> <td>Description</td> <td colspan="3">Brownish Grey, Slightly Sandy, CLAY</td> </tr> <tr> <td>Type</td> <td colspan="3">UT</td> </tr> <tr> <td>Initial Sample Length</td> <td>L_0</td> <td>(mm)</td> <td>212.1</td> </tr> <tr> <td>Initial Sample Diameter</td> <td>D_0</td> <td>(mm)</td> <td>105.5</td> </tr> <tr> <td>Initial Sample Weight</td> <td>W_0</td> <td>(gr)</td> <td>3615.1</td> </tr> <tr> <td>Initial Bulk Density</td> <td>ρ_0</td> <td>(Mg/m³)</td> <td>1.95</td> </tr> <tr> <td>Particle Density (Assumed)</td> <td>ρ_s</td> <td>(Mg/m³)</td> <td>2.65</td> </tr> </table>	Depth	3.0-3.7			Description	Brownish Grey, Slightly Sandy, CLAY			Type	UT			Initial Sample Length	L_0	(mm)	212.1	Initial Sample Diameter	D_0	(mm)	105.5	Initial Sample Weight	W_0	(gr)	3615.1	Initial Bulk Density	ρ_0	(Mg/m ³)	1.95	Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65
Depth	3.0-3.7																																
Description	Brownish Grey, Slightly Sandy, CLAY																																
Type	UT																																
Initial Sample Length	L_0	(mm)	212.1																														
Initial Sample Diameter	D_0	(mm)	105.5																														
Initial Sample Weight	W_0	(gr)	3615.1																														
Initial Bulk Density	ρ_0	(Mg/m ³)	1.95																														
Particle Density (Assumed)	ρ_s	(Mg/m ³)	2.65																														


Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	330	360	420	
Initial Back Pressure	U_{bi}	(kPa)	300	300	300	
Strain Rate	m_s	(mm/min)	0.07699	0.02761	0.01318	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	w_i	(%)	25			
Initial Dry Density	ρ_{di}	(Mg/m ³)	1.56			
Initial Voids Ratio	e_i	.	0.698			
Initial Degree of Saturation	S_i	(%)	95			
B Value	B	.	0.96			

Final Conditions			Stage 1	2	3	4
Final Moisture	w_f	(%)	26			
Final Dry Density	ρ_{df}	(Mg/m ³)	1.61			
Final Voids Ratio	e_f	.	0.645			
Final Degree of Saturation	S_f	(%)	100.0			
Failure Criteria	.	.	Max. Dev. Strain	Max. Dev. Strain	Max. Dev. Strain	
Strain At Failure	ϵ_f	(%)	3.81	5.08	8.49	
Stress At Failure	$(\sigma_1 - \sigma_3)$	(kPa)	83.2	102.9	159.1	
Minor Stress At Failure	σ_3'	(kPa)	10.7	27.0	69.5	
Major Stress At Failure	σ_1'	(kPa)	93.9	130.0	228.6	
Principal Stress At Failure	σ_1' / σ_3'		8.794	4.808	3.288	
PwP At Failure Criteria	u_f		319.4	334.1	351.4	

Notes			
Side Drains Used During Test			
	1	2	3
Side Drain Correction at Failure (kpa)	3.32	3.32	3.32
Membrane Correction at Failure (kpa)	0.40	0.54	0.75


 Compound

	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 19	
	Database:	GSTL-152117\SQLEXPRESS2019 \ Effectives	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH11	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	3.0-3.7	
Operator	*	Checked	*	Approved	*


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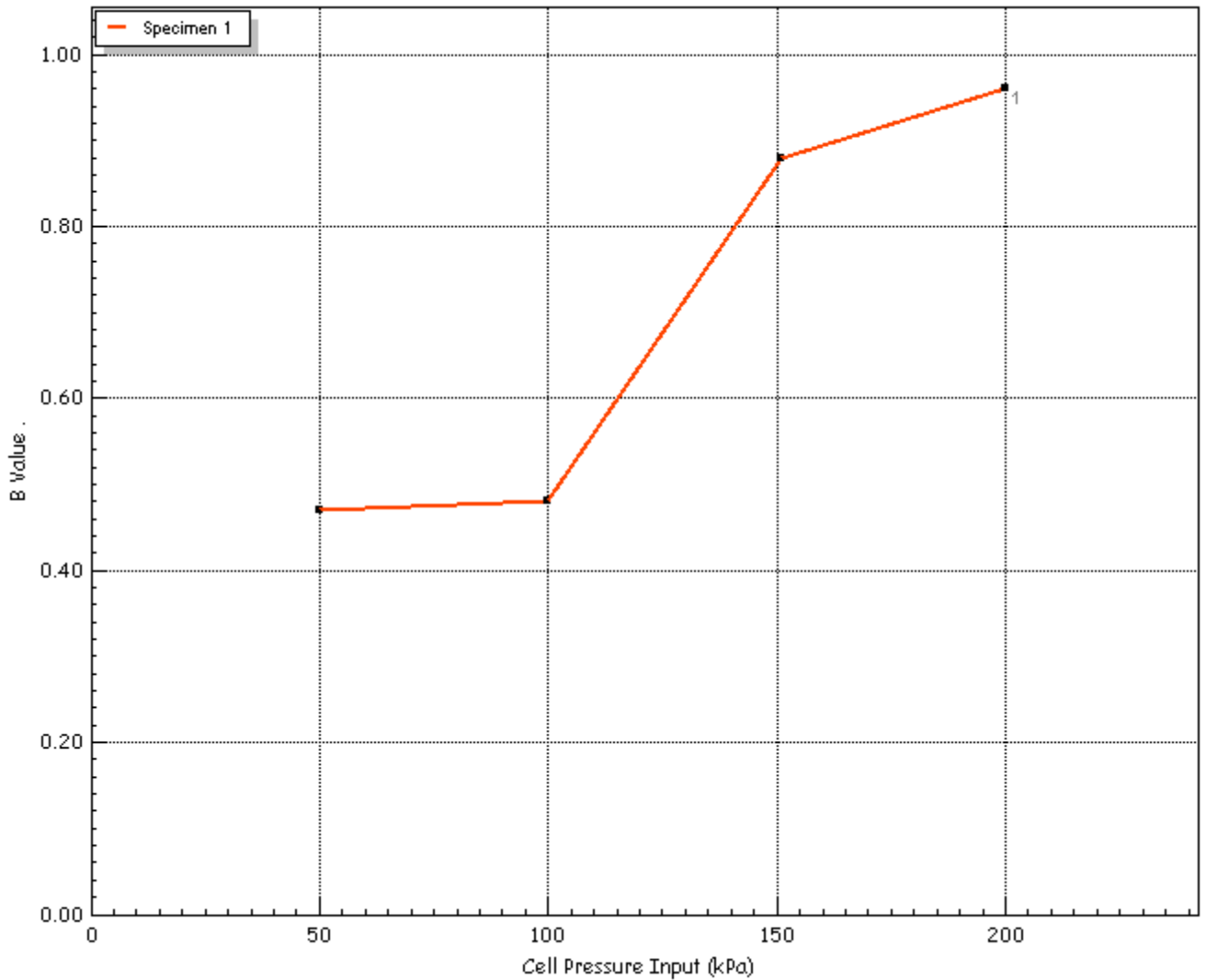
Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method at Constant Moisture Content

Cell Pressure Input	σ	(kPa)	200
Pore Water Pressure Input	u_{pwp}	(kPa)	181
B Value	B	.	0.96



	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 19	
	Database:	GSTL-152117\SQLEXPRESS2019 \ Effectives	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH11	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	3.0-3.7	
Operator	*	Checked	*	Approved	*

*

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	330	360	420
Initial Back Pressure	u_{bi} (kPa)	300	300	300
Pore Water Pressure Input	u_{pwp} (kPa)	304	329	366
Drainage Method		Radial+One End		

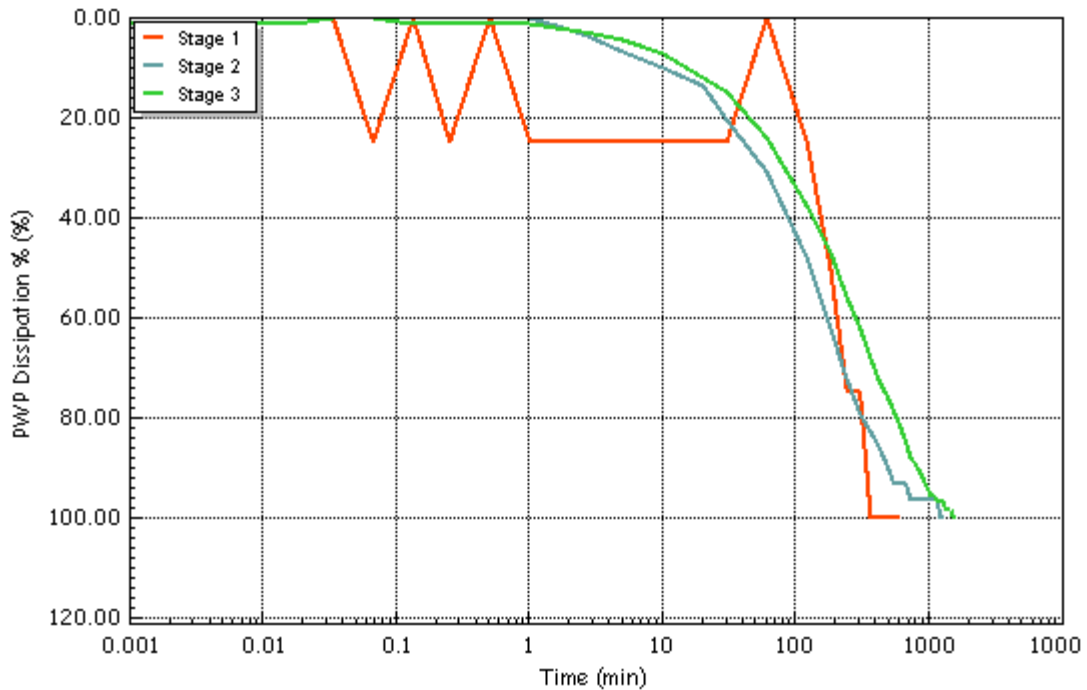
Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$ (%)	0.46	0.95	1.68
Corrected Length	L_c (mm)	211.8	203.1	197.4
Corrected Area	A_c (cm ²)	87.15	90.02	91.04
Corrected Volume	V_c (cc)	1845.565	1827.859	1796.644
t100	t_{100} (min)	76.40	204.25	416.04
Consolidation	c_v (m ² /year)	0.03	0.012	0.006
Compressibility	m_v (m ² /MN)	1.2	0.33	0.26
Test Time	t_F (h:m:s)	02:17:31	06:07:38	12:28:52
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.07699	0.02762	0.01318

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure (kpa)



GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 19	
	Database:	GSTL-152117\SQLXPRESS2019 \ Effectives	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH11	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	3.0-3.7	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

Initial Conditions		Stage 1	2	3
Initial Cell Pressure	σ_3 (kPa)	330	360	420
Initial Back Pressure	u_{bi} (kPa)	300	300	300
Pore Water Pressure Input	u_{pwp} (kPa)	304	329	366
Drainage Method		Radial+One End		

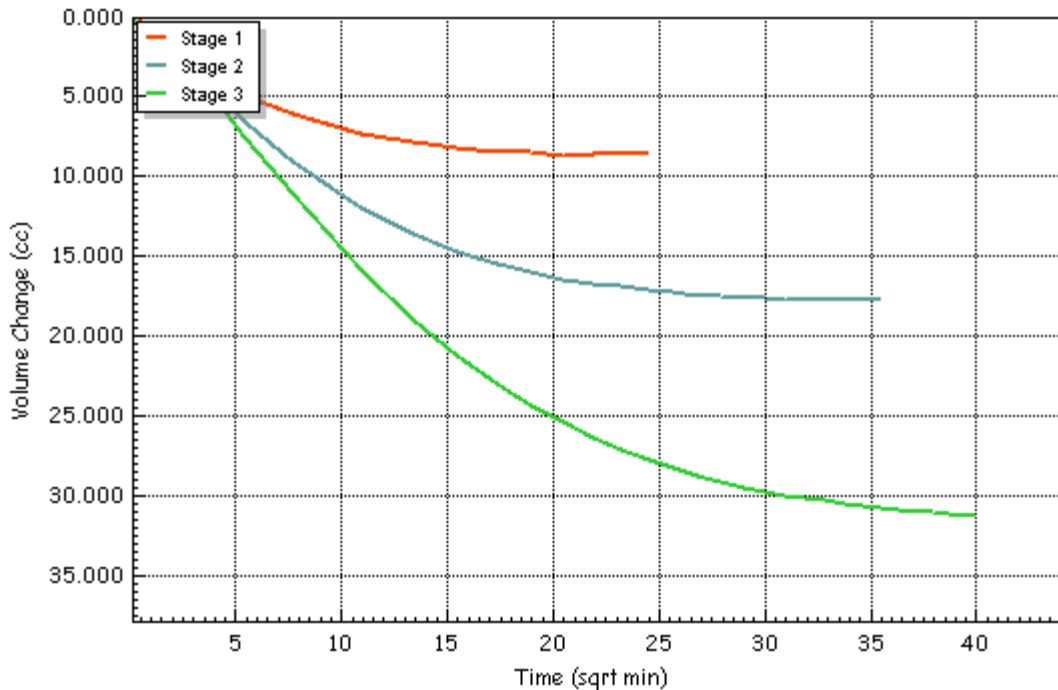
Final Conditions		Stage 1	2	3
PWP Dissipation %	$U\%$ (%)	100.00	100.00	100.00
Volumetric Strain	$\epsilon_v\%$ (%)	0.46	0.95	1.68
Corrected Length	L_c (mm)	211.8	203.1	197.4
Corrected Area	A_c (cm ²)	87.15	90.02	91.04
Corrected Volume	V_c (cc)	1845.565	1827.859	1796.644
t100	t_{100} (min)	76.40	204.25	416.04
Consolidation	c_v (m ² /year)	0.03	0.012	0.006
Compressibility	m_v (m ² /MN)	1.2	0.33	0.26
Test Time	t_F (h:m:s)	02:17:31	06:07:38	12:28:52
Estimated Strain to Failure	$\epsilon\%$ (%)	5.0	5.0	5.0
Shear Machine Speed	d_r (mm/min)	0.07699	0.02762	0.01318

Notes

Side Drains Used During Test

Side Drain Correction at Failure (kpa)

Membrane Correction at Failure (kpa)



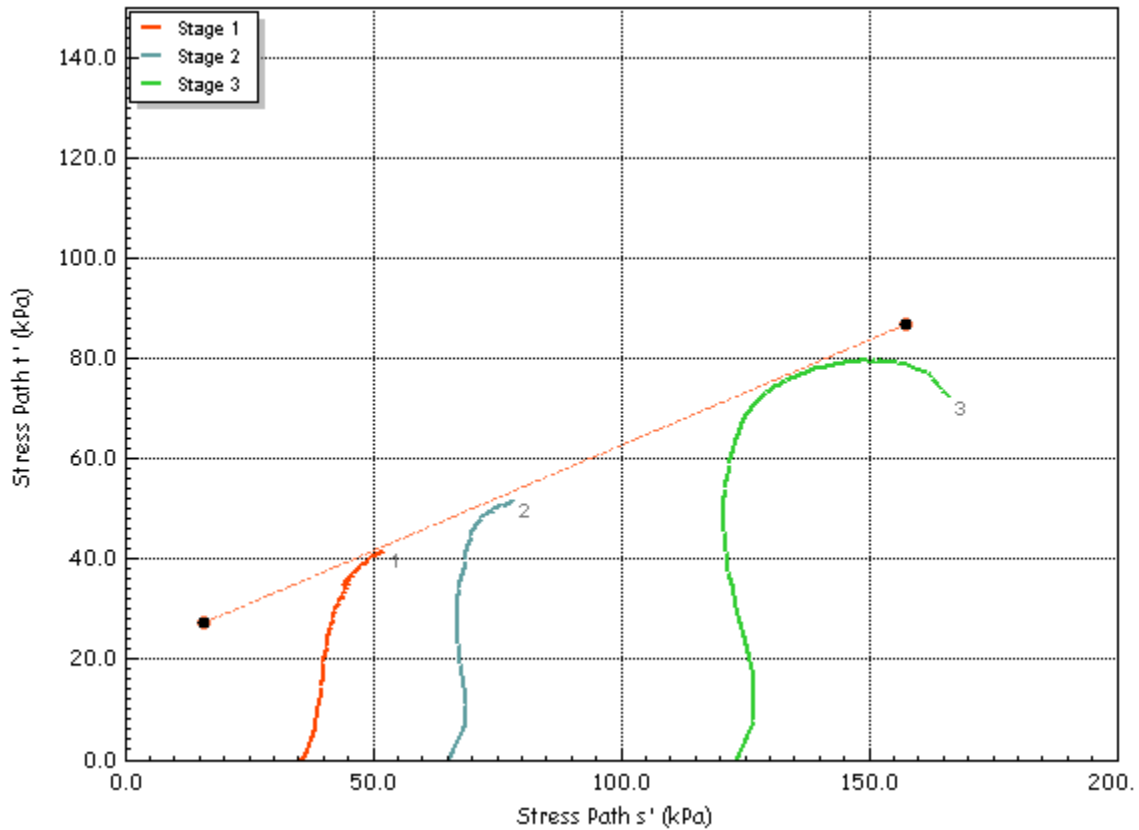
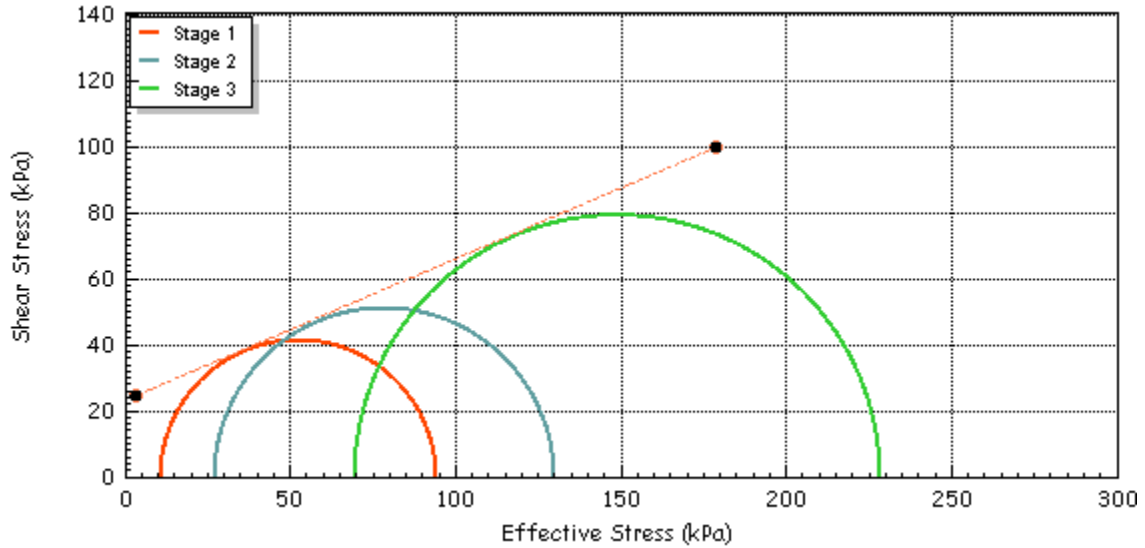
	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 19	
	Database:	GSTL-152117\SQLXPRESS2019 \ Effectives	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH11	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	3.0-3.7	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective Cohesion c'	(kPa)	23.44	Effective Cohesion c'	(kPa)	22.80
Effective Friction ϕ'	(deg)	23.2	Effective Friction ϕ'	(deg)	24.8

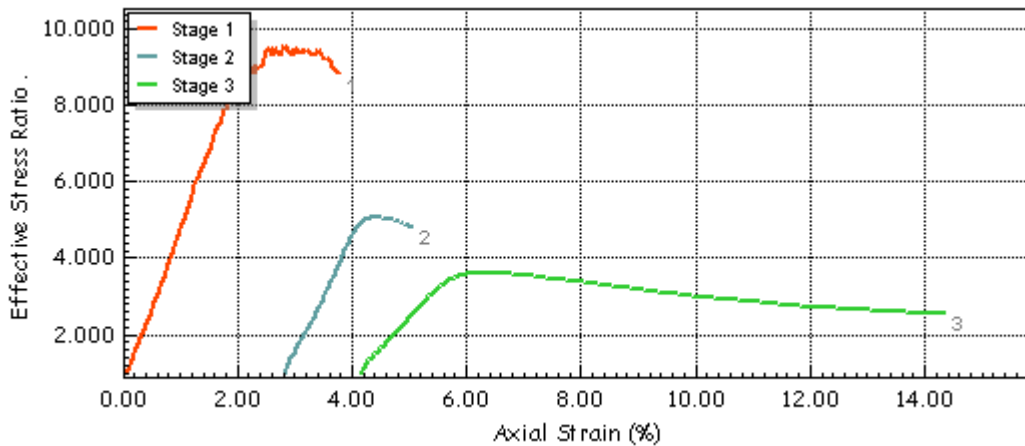
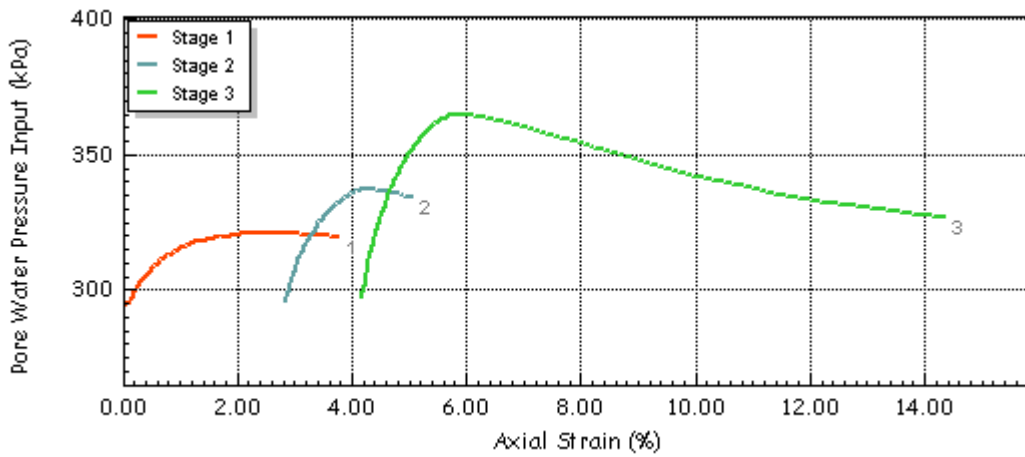
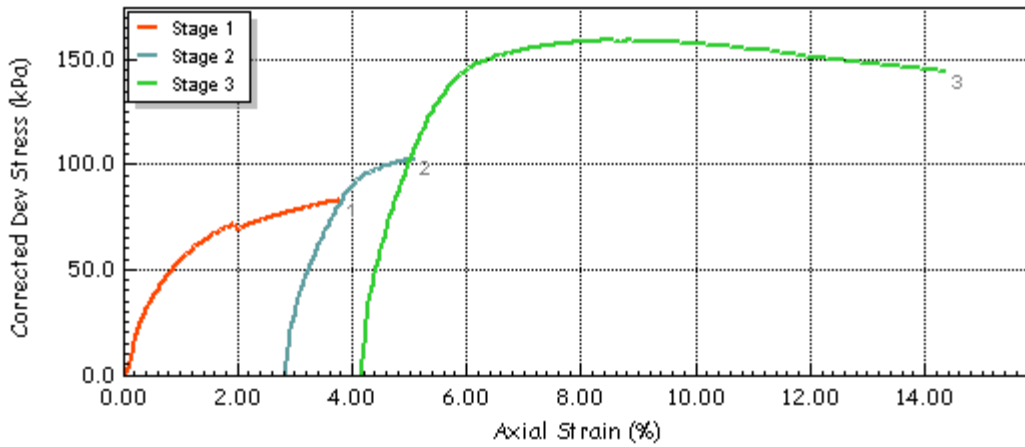


	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 19	
	Database:	GSTL-152117\SQLXPRESS2019 \ Effectives	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH11	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	3.0-3.7	
Operator	*	Checked	*	Approved	*

Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots



GSTL	Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Cell 19	
	Database:	GSTL-152117\SQLXPRESS2019 \ Effectives	Test Date	15/02/2023	
	Site Reference		Borehole	ATKRD_BH11	
	Jobfile	64154	Sample	1	
	Client	SOCOTEC	Depth	3.0-3.7	
Operator	*	Checked	*	Approved	*

DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH03
 Sample No 104
 Depth (m) 2.30
 Sample Type D

Description:

Brown slightly gravelly CLAY.

Specimen Details

Natural water content	%	27.0
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.85
Outer Radius	mm	49.99
Initial height	mm	5.18
Initial water content	%	27.0
Initial bulk density	Mg/m ³	1.80
Initial dry density	Mg/m ³	1.42

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	8.2	12.1	21.7
Final mean linear displacement	mm	23.0	24.1	20.9

Final Conditions

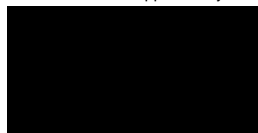
Final water content	%	40.2
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	13
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Notes

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DIRECT SHEAR TEST – RING SHEAR

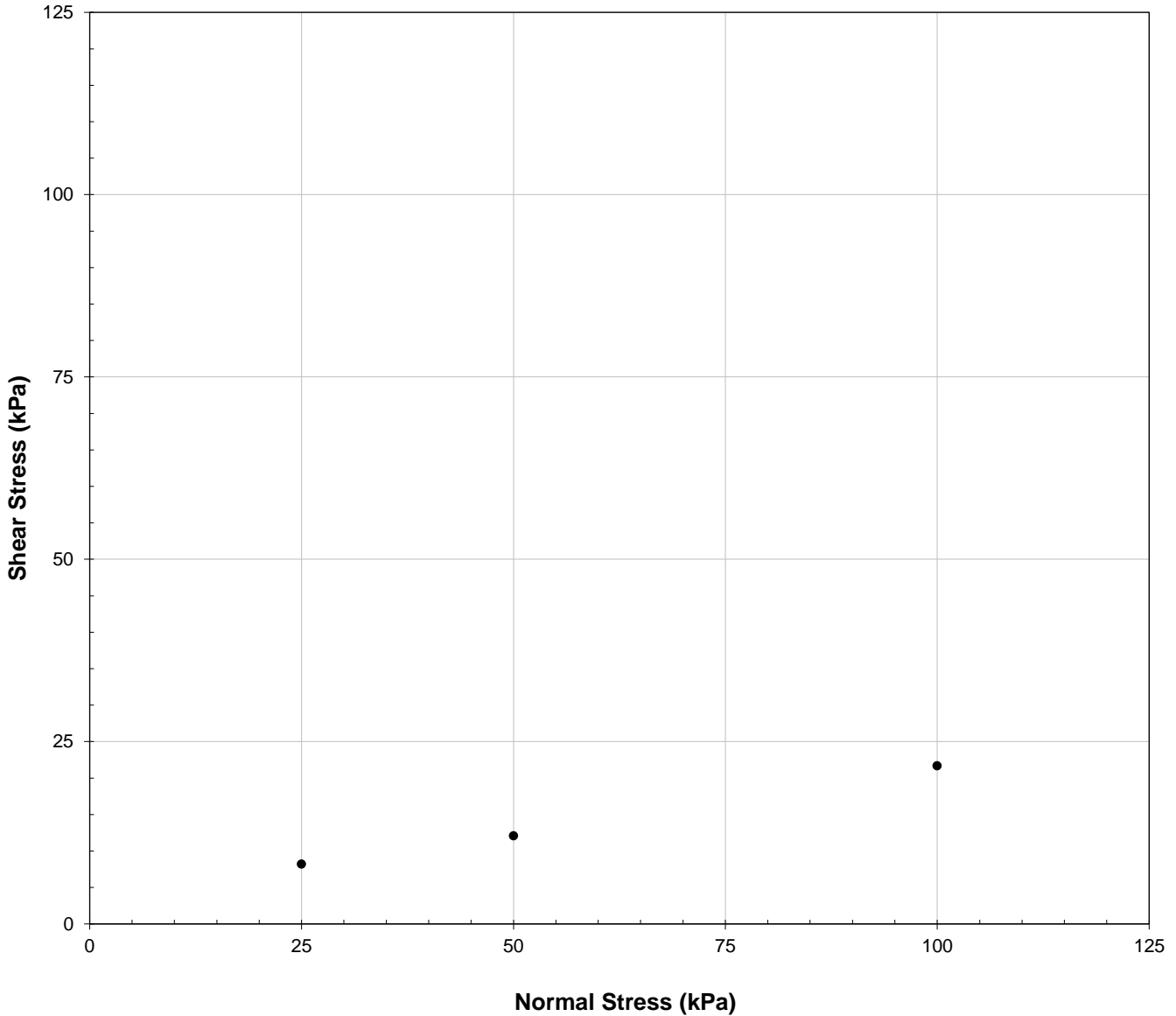
(ring shear apparatus)

Borehole No ATK_BH03
Sample No 104
Depth (m) 2.30
Sample Type D


Description:

Brown slightly gravelly CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 13.0$

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DIRECT SHEAR TEST – RING SHEAR

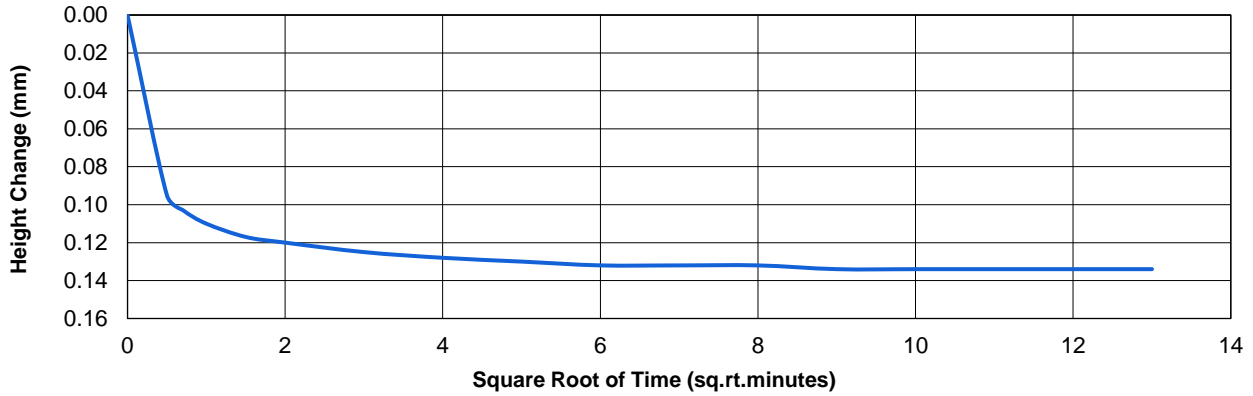
(ring shear apparatus)

Borehole No	ATK_BH03
Sample No	104
Depth (m)	2.30
Sample Type	D

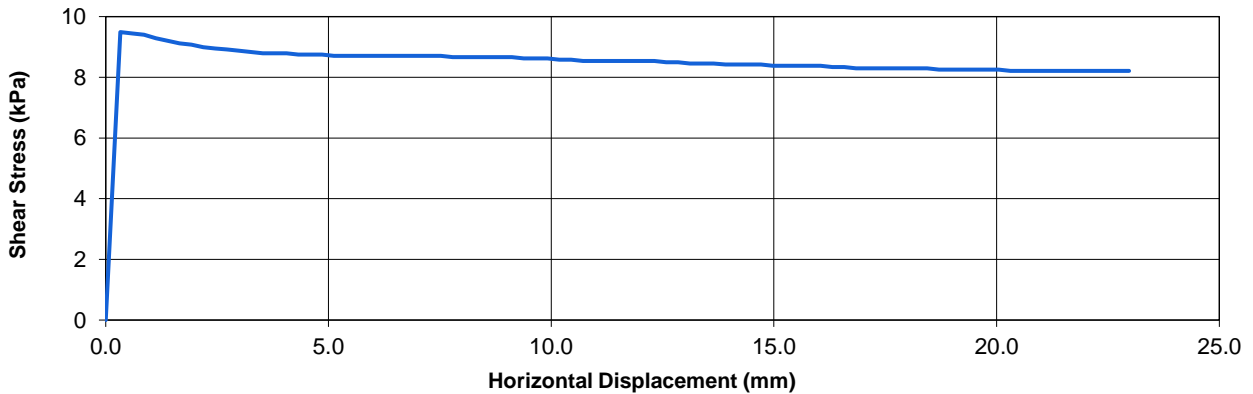
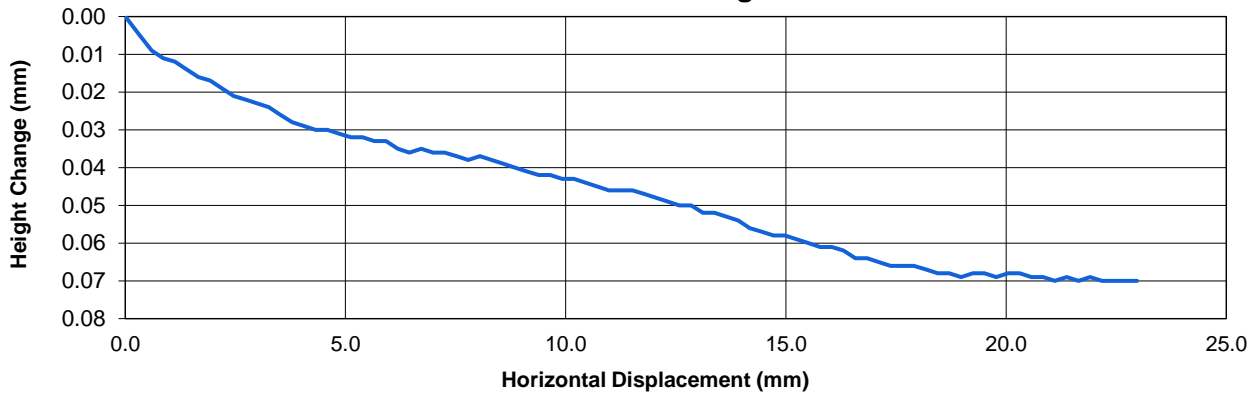
Description:
Brown slightly gravelly CLAY.

Specimen: 1

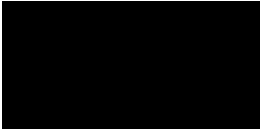
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

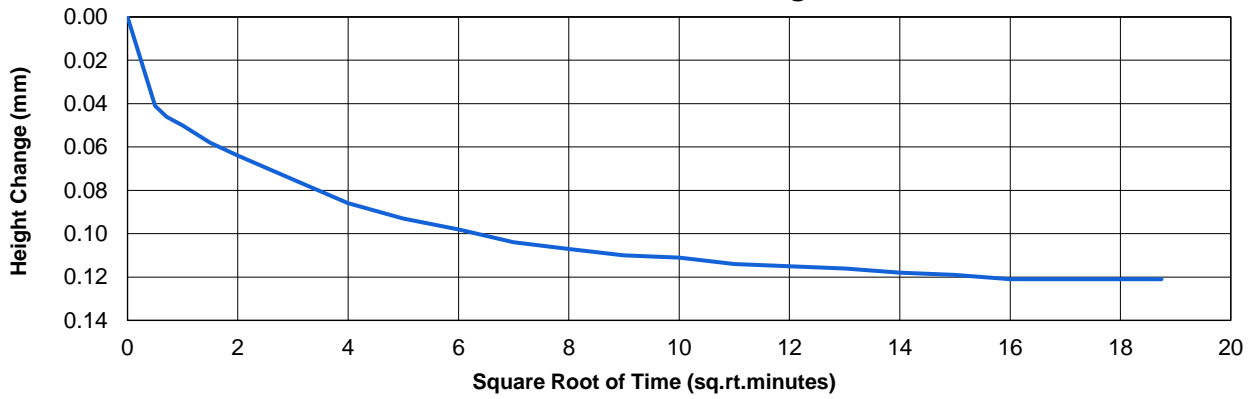
(ring shear apparatus)

Borehole No	ATK_BH03
Sample No	104
Depth (m)	2.30
Sample Type	D

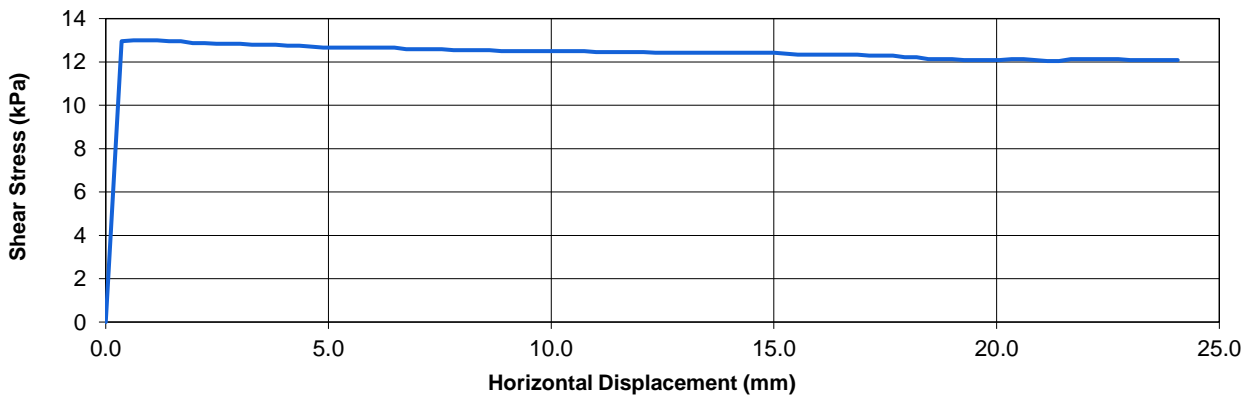
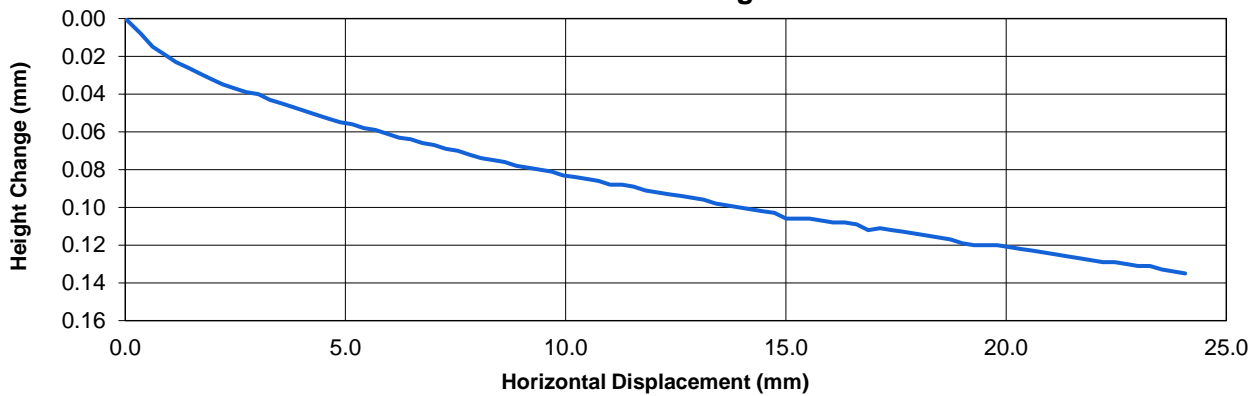
Description:
Brown slightly gravelly CLAY.

Specimen: 2

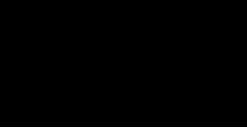
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

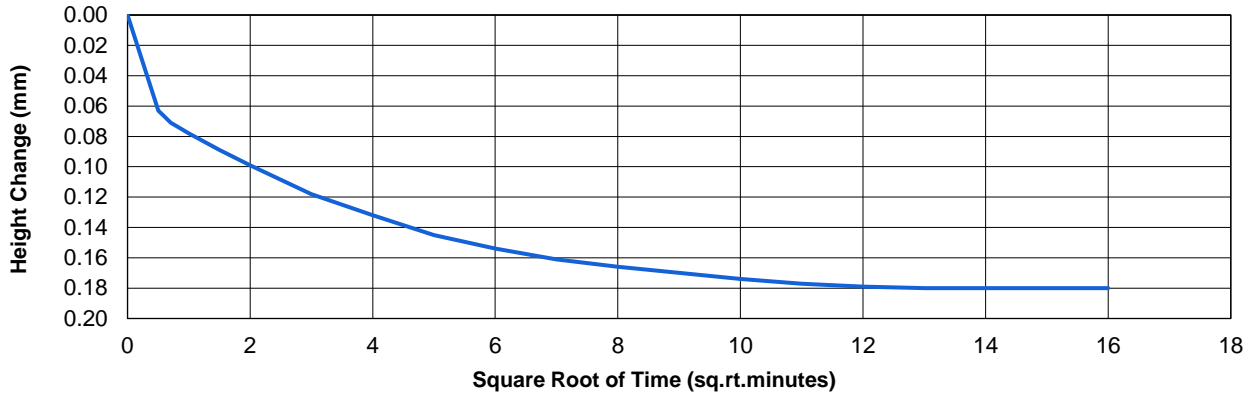
(ring shear apparatus)

Borehole No	ATK_BH03
Sample No	104
Depth (m)	2.30
Sample Type	D

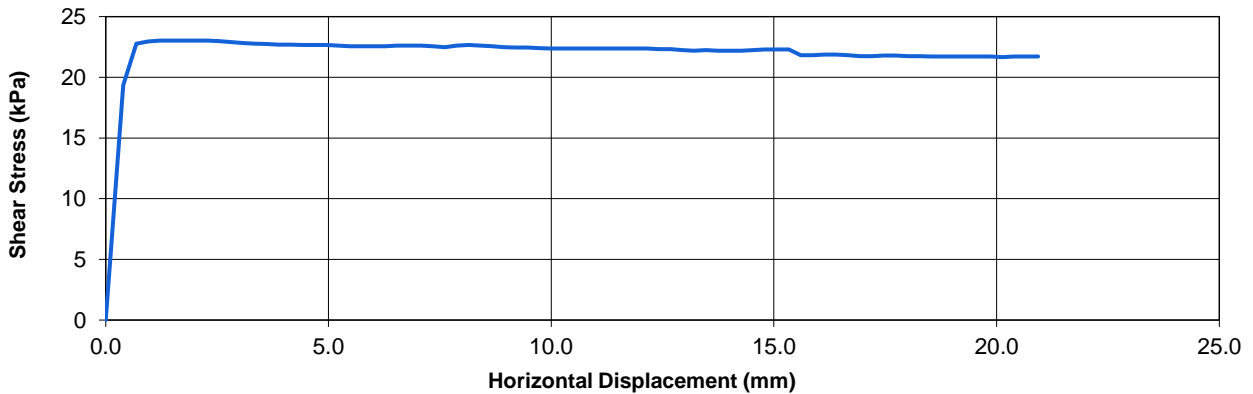
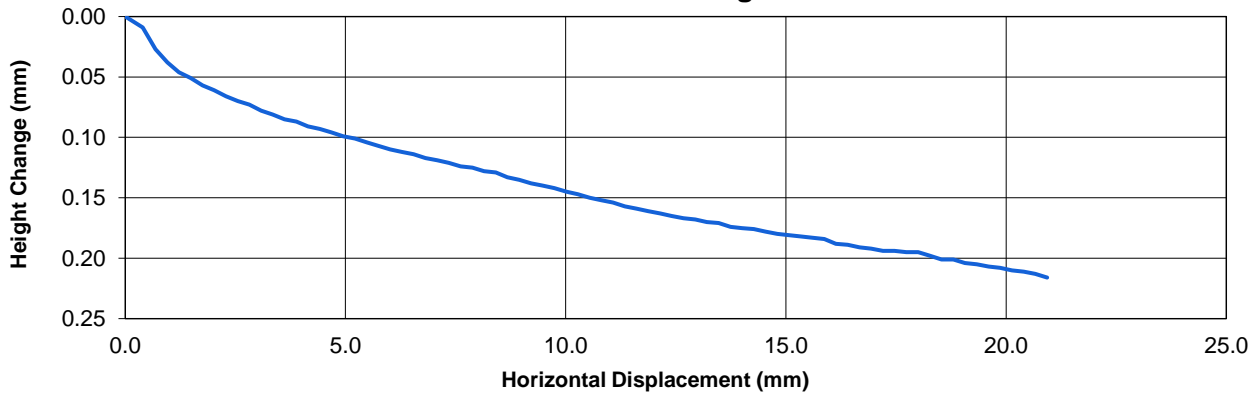
Description:
Brown slightly gravelly CLAY.

Specimen: 3

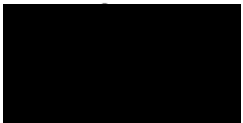
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH05
 Sample No 1.3
 Depth (m) 1.30
 Sample Type D

Description:

Grey mottled brown slightly gravelly CLAY.

Specimen Details

Natural water content	%	27.7
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.85
Outer Radius	mm	49.99
Initial height	mm	5.18
Initial water content	%	27.7
Initial bulk density	Mg/m ³	1.94
Initial dry density	Mg/m ³	1.52

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	10	20	40
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	10	20	40
Duration	day(s)	3	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	2.7	4.9	8.7
Final mean linear displacement	mm	68.8	20.0	20.7

Final Conditions

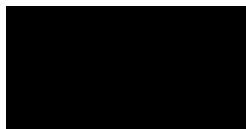
Final water content	%	32.2
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	13
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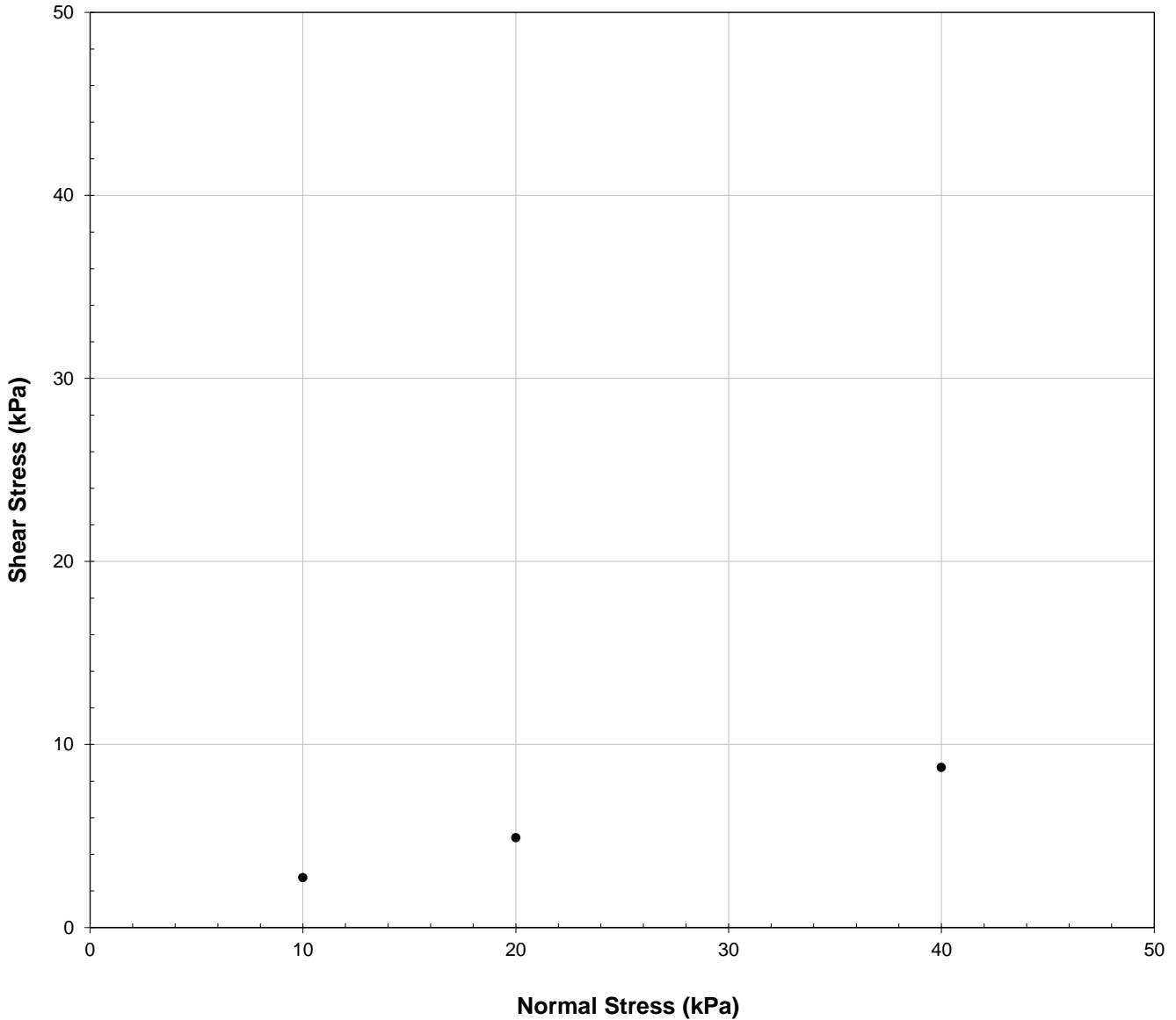
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_BH05
Sample No	1.3
Depth (m)	1.30
Sample Type	D

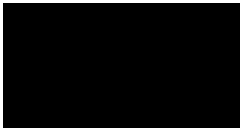
Description:
 Grey mottled brown slightly gravelly CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 13.0$

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DIRECT SHEAR TEST – RING SHEAR

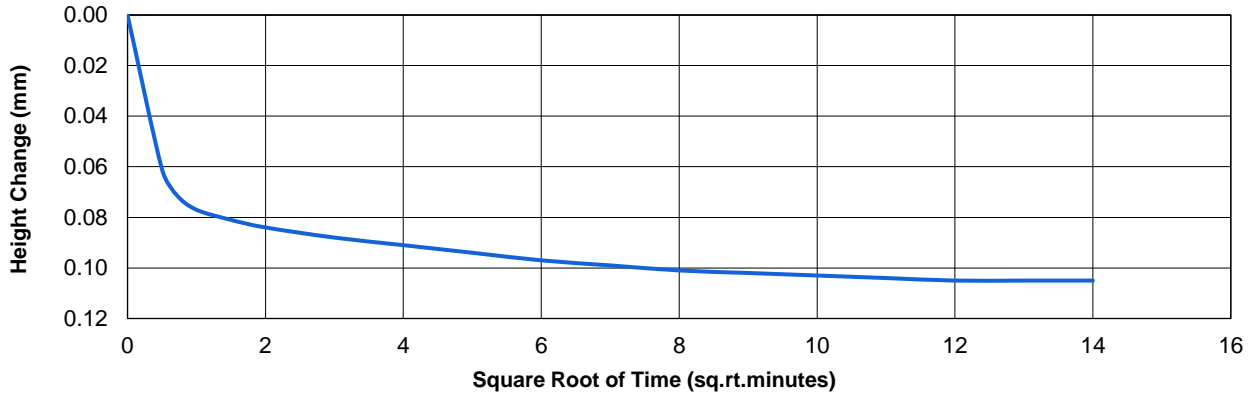
(ring shear apparatus)

Borehole No	ATK_BH05
Sample No	1.3
Depth (m)	1.30
Sample Type	D

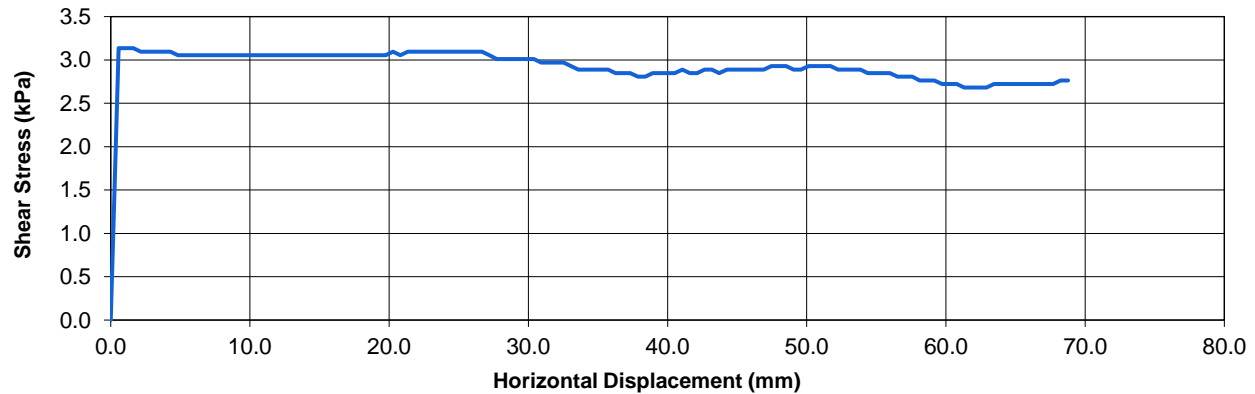
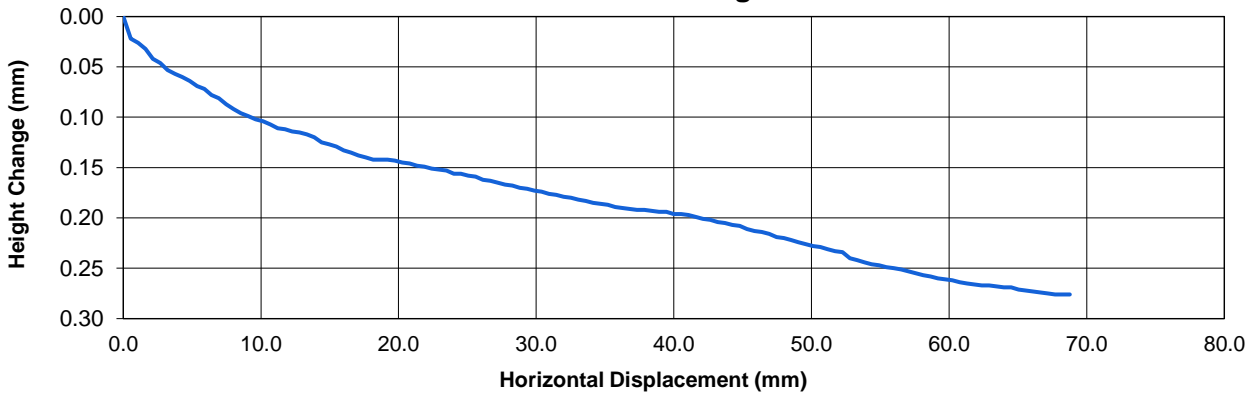
Description:
 Grey mottled brown slightly gravelly CLAY.

Specimen: 1


Consolidation Stage



Shear Stage



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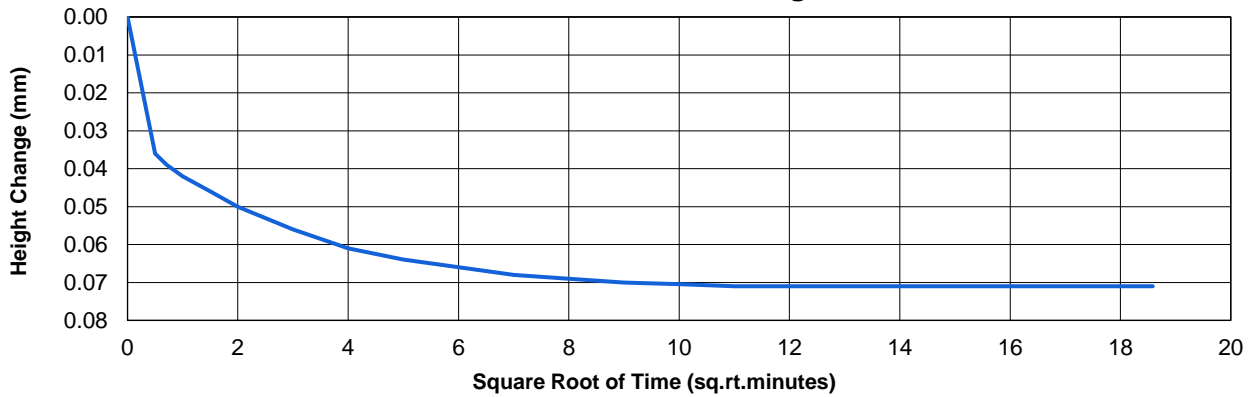
(ring shear apparatus)

Borehole No	ATK_BH05
Sample No	1.3
Depth (m)	1.30
Sample Type	D

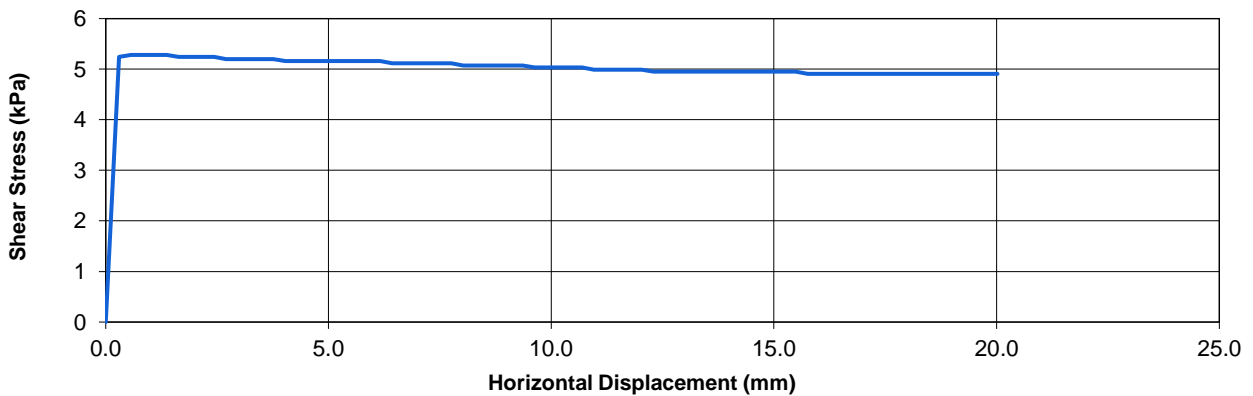
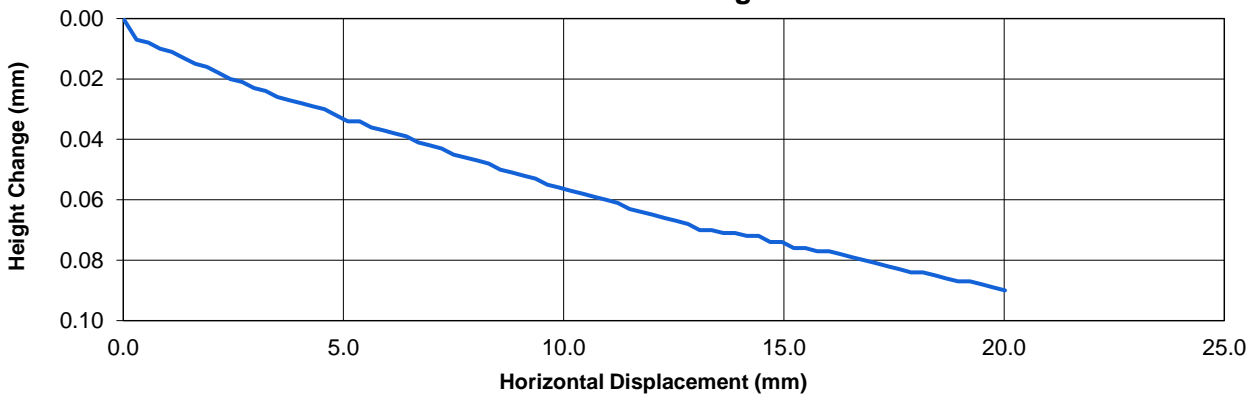
Description:
Grey mottled brown slightly gravelly CLAY.

Specimen: 2


Consolidation Stage



Shear Stage



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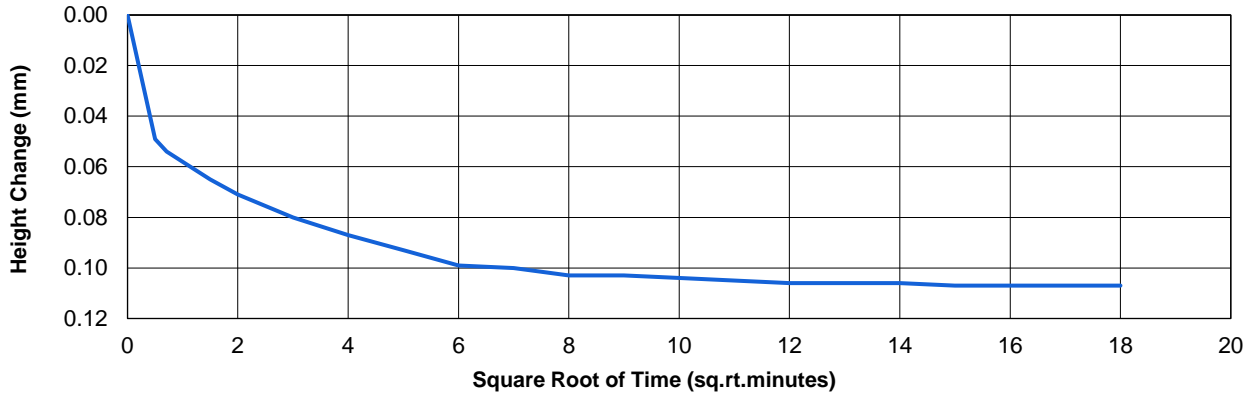
(ring shear apparatus)

Borehole No	ATK_BH05
Sample No	1.3
Depth (m)	1.30
Sample Type	D

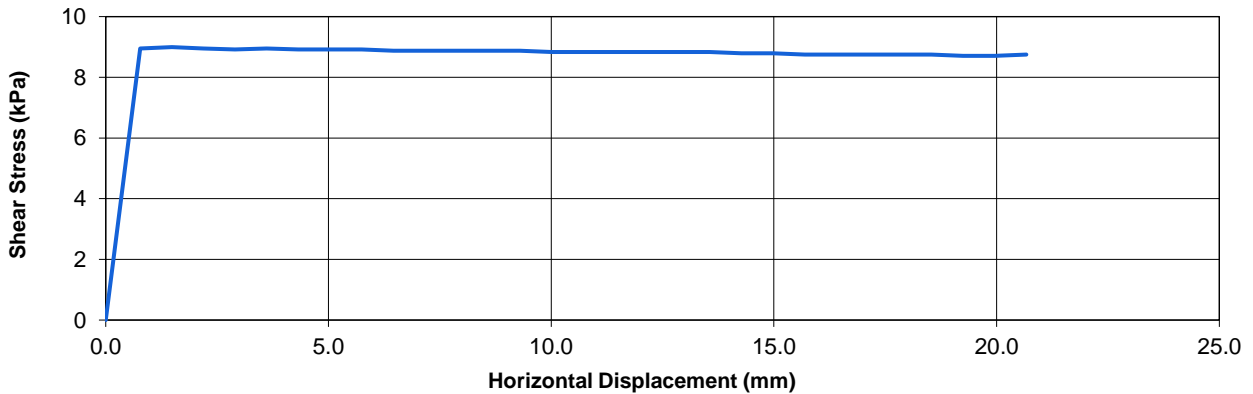
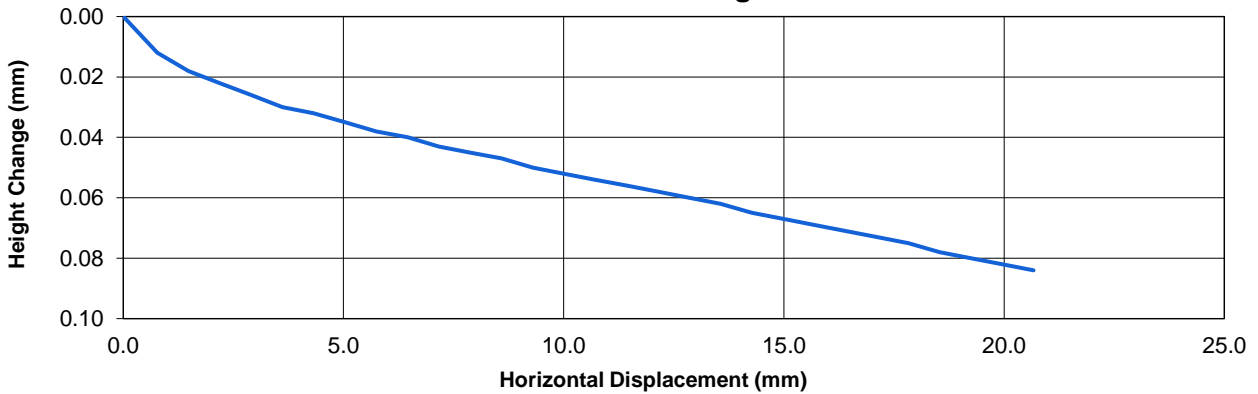
Description:
Grey mottled brown slightly gravelly CLAY.


Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH13
 Sample No 2.4
 Depth (m) 2.00
 Sample Type UT

Description:

Grey mottled brown CLAY.

Specimen Details

Natural water content	%	46.8
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.93
Outer Radius	mm	49.94
Initial height	mm	4.88
Initial water content	%	46.8
Initial bulk density	Mg/m ³	1.81
Initial dry density	Mg/m ³	1.23

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	20	40	80
Duration	day(s)	3	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	4.4	7.0	12.2
Final mean linear displacement	mm	68.8	20.0	20.7

Final Conditions

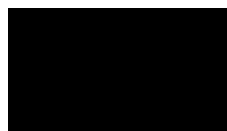
Final water content	%	47.0
---------------------	---	------

Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	9
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Notes

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DIRECT SHEAR TEST – RING SHEAR

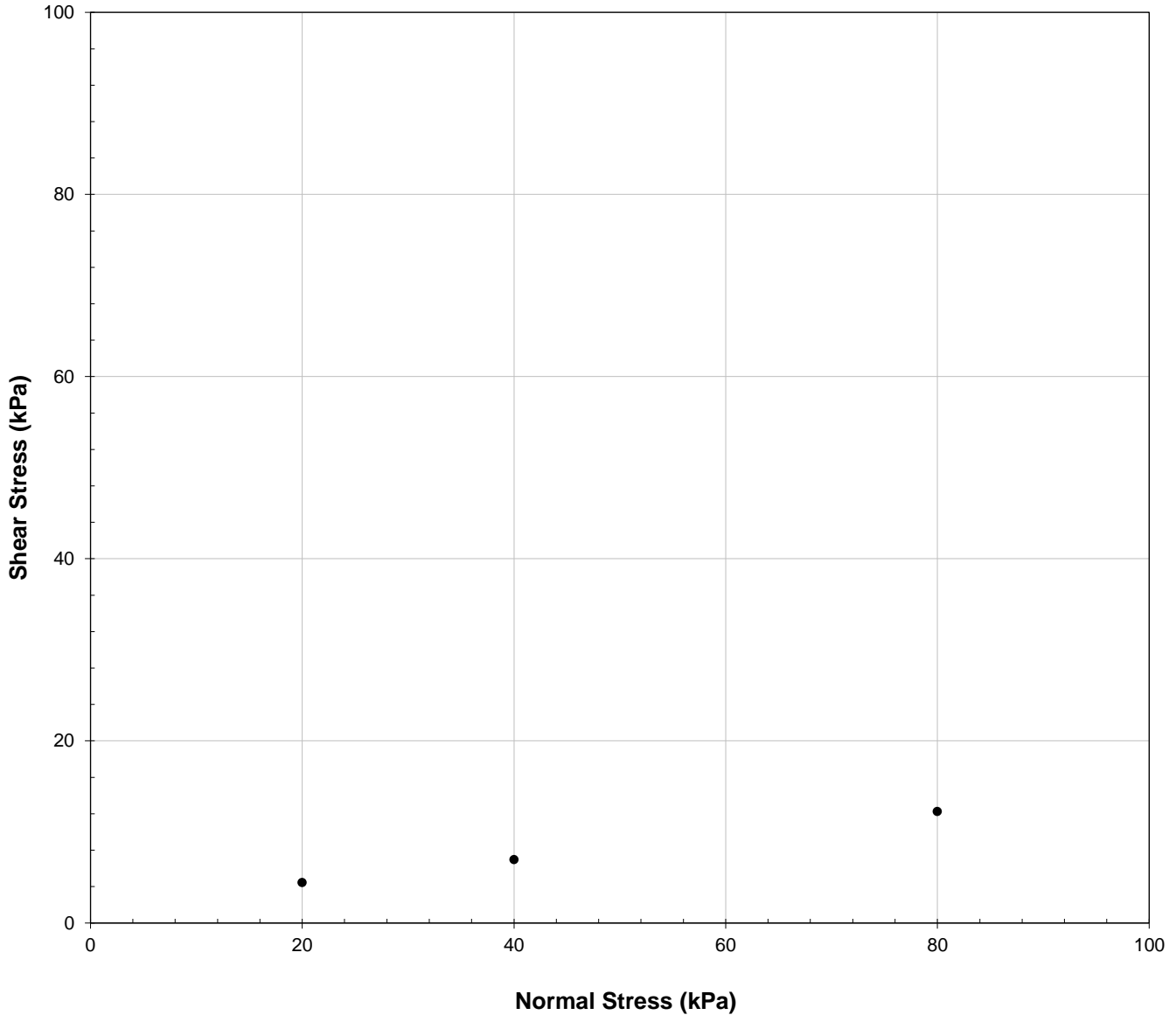
(ring shear apparatus)

Borehole No	ATK_BH13
Sample No	2.4
Depth (m)	2.00
Sample Type	UT

Description:

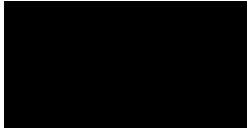
Grey mottled brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 9.0$

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DIRECT SHEAR TEST – RING SHEAR

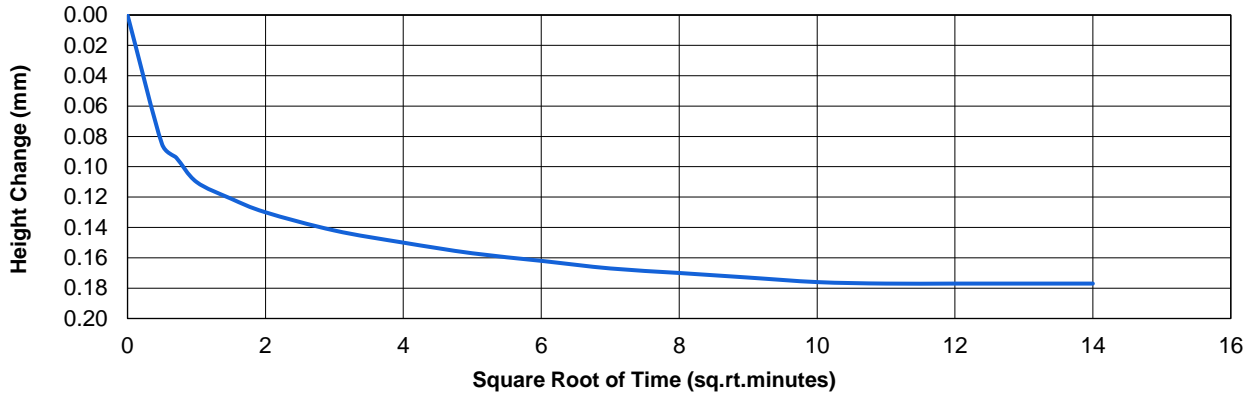
(ring shear apparatus)

Borehole No	ATK_BH13
Sample No	2.4
Depth (m)	2.00
Sample Type	UT

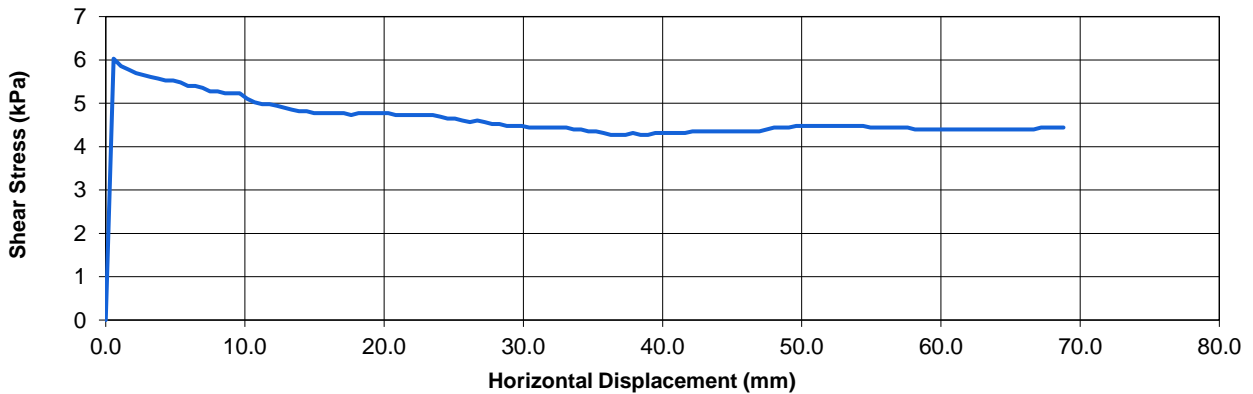
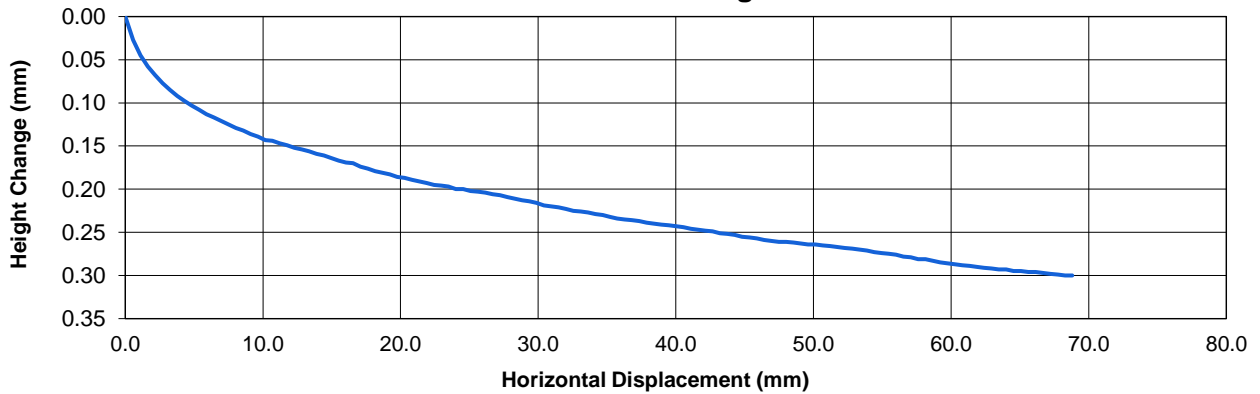
Description:
Grey mottled brown CLAY.

Specimen: 1

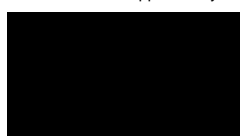
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

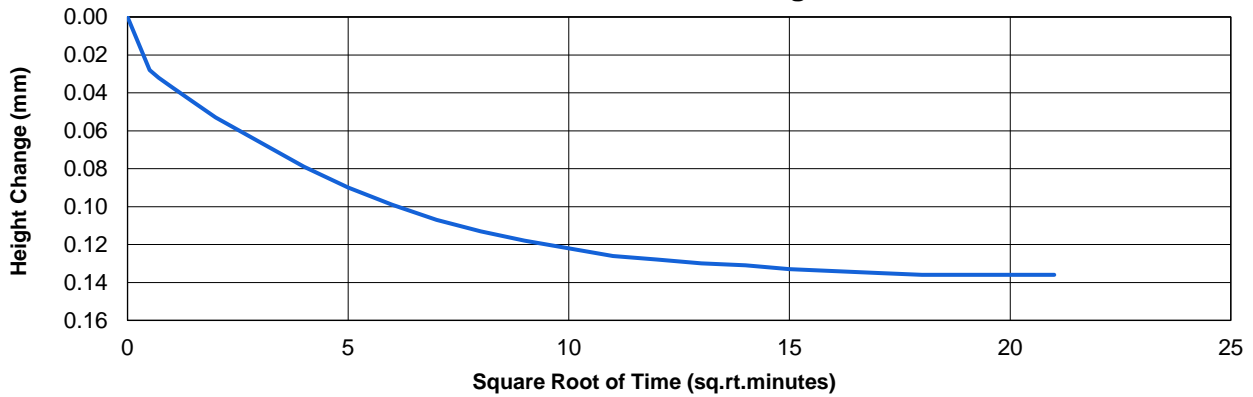
(ring shear apparatus)

Borehole No	ATK_BH13
Sample No	2.4
Depth (m)	2.00
Sample Type	UT

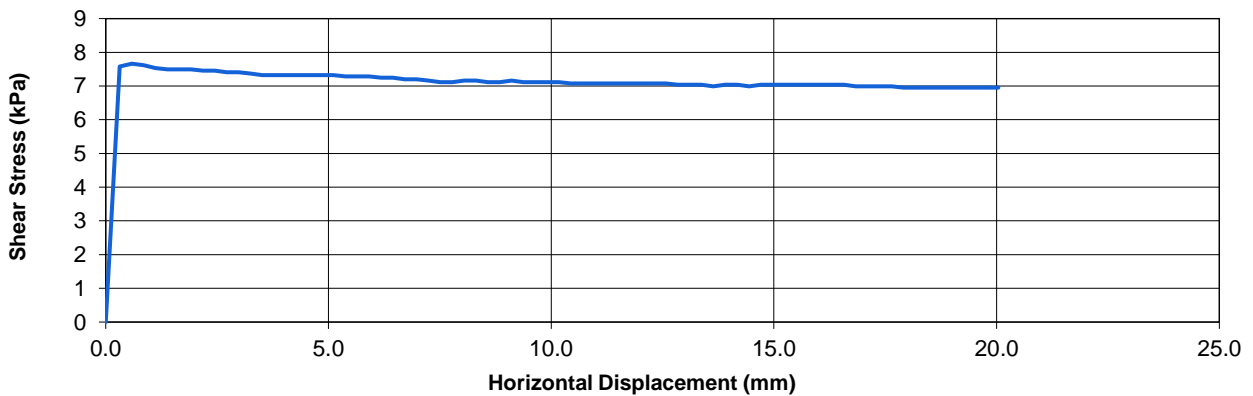
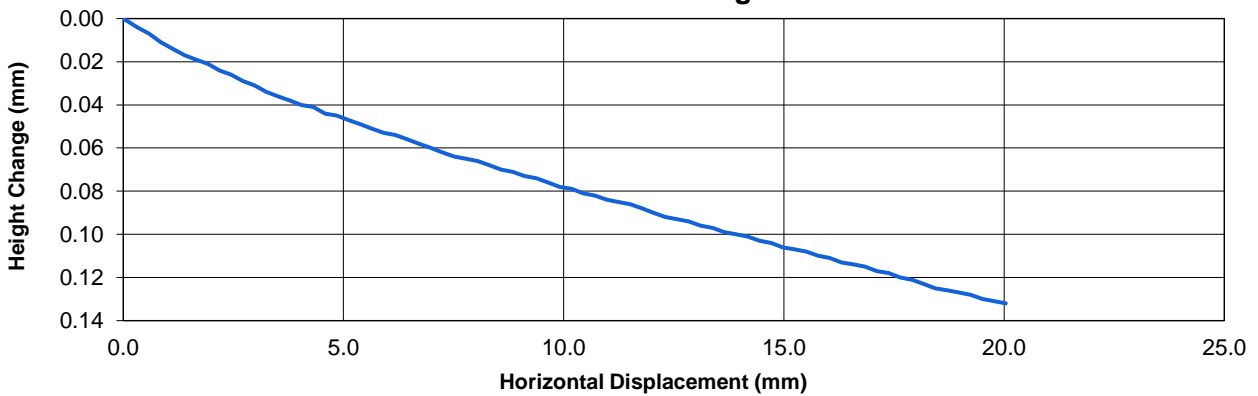
Description:
Grey mottled brown CLAY.

Specimen: 2

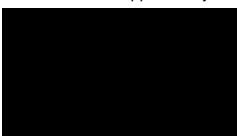
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

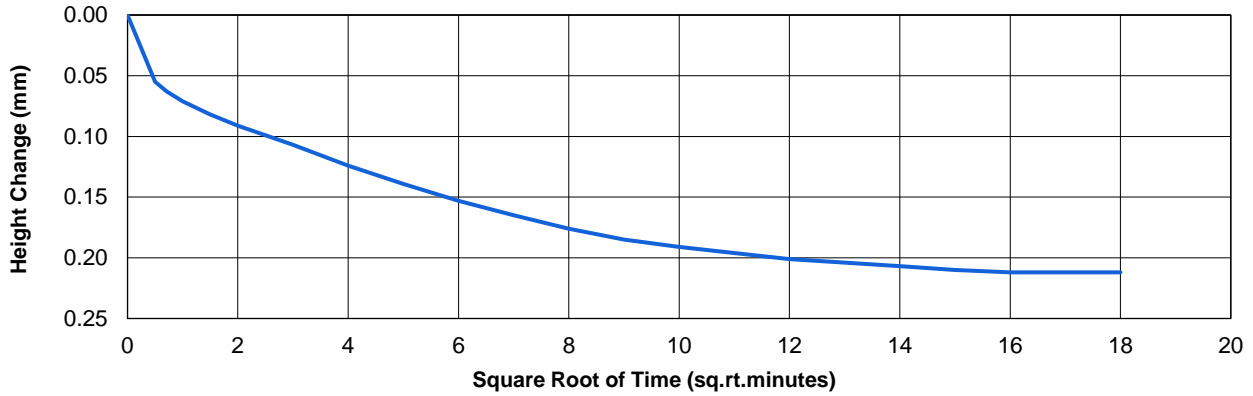
(ring shear apparatus)

Borehole No	ATK_BH13
Sample No	2.4
Depth (m)	2.00
Sample Type	UT

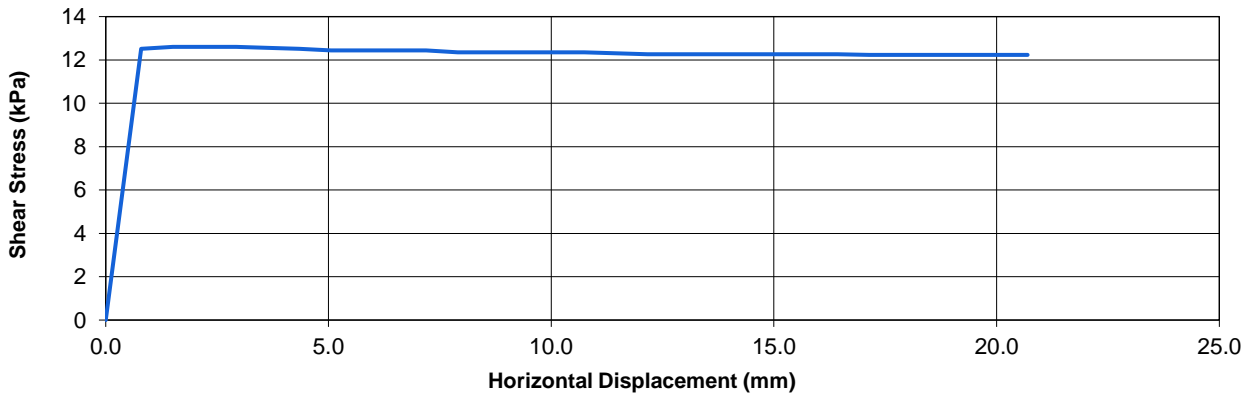
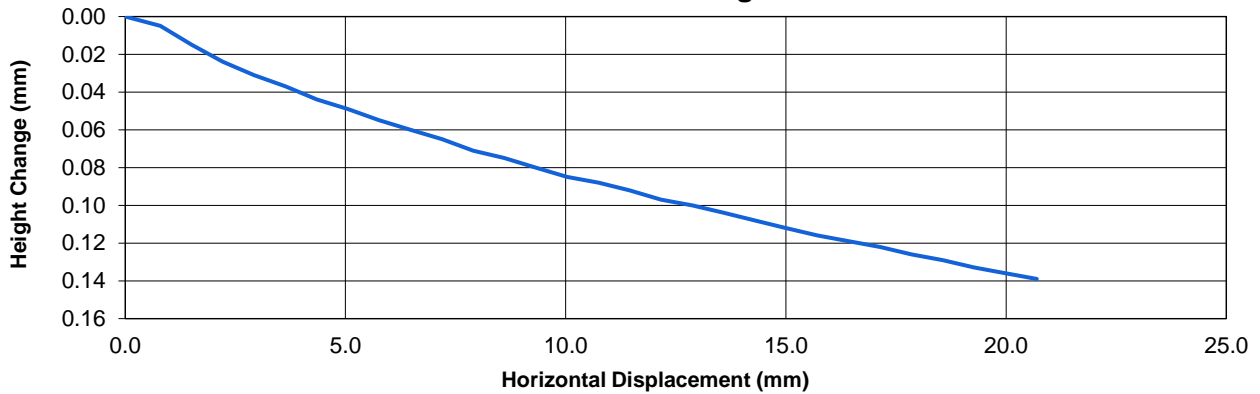
Description:
Grey mottled brown CLAY.

Specimen: 3

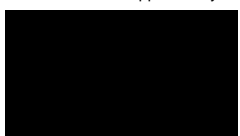
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH14
 Sample No 104
 Depth (m) 2.50
 Sample Type D

Description:

Yellowish brown CLAY.

Specimen Details

Natural water content	%	48.0
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.93
Outer Radius	mm	49.94
Initial height	mm	4.88
Initial water content	%	48.0
Initial bulk density	Mg/m ³	1.73
Initial dry density	Mg/m ³	1.17

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.4	9.2	16.0
Final mean linear displacement	mm	23.0	24.1	20.9

Final Conditions

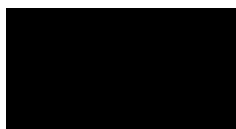
Final water content	%	47.1
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	12
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Notes

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DIRECT SHEAR TEST – RING SHEAR

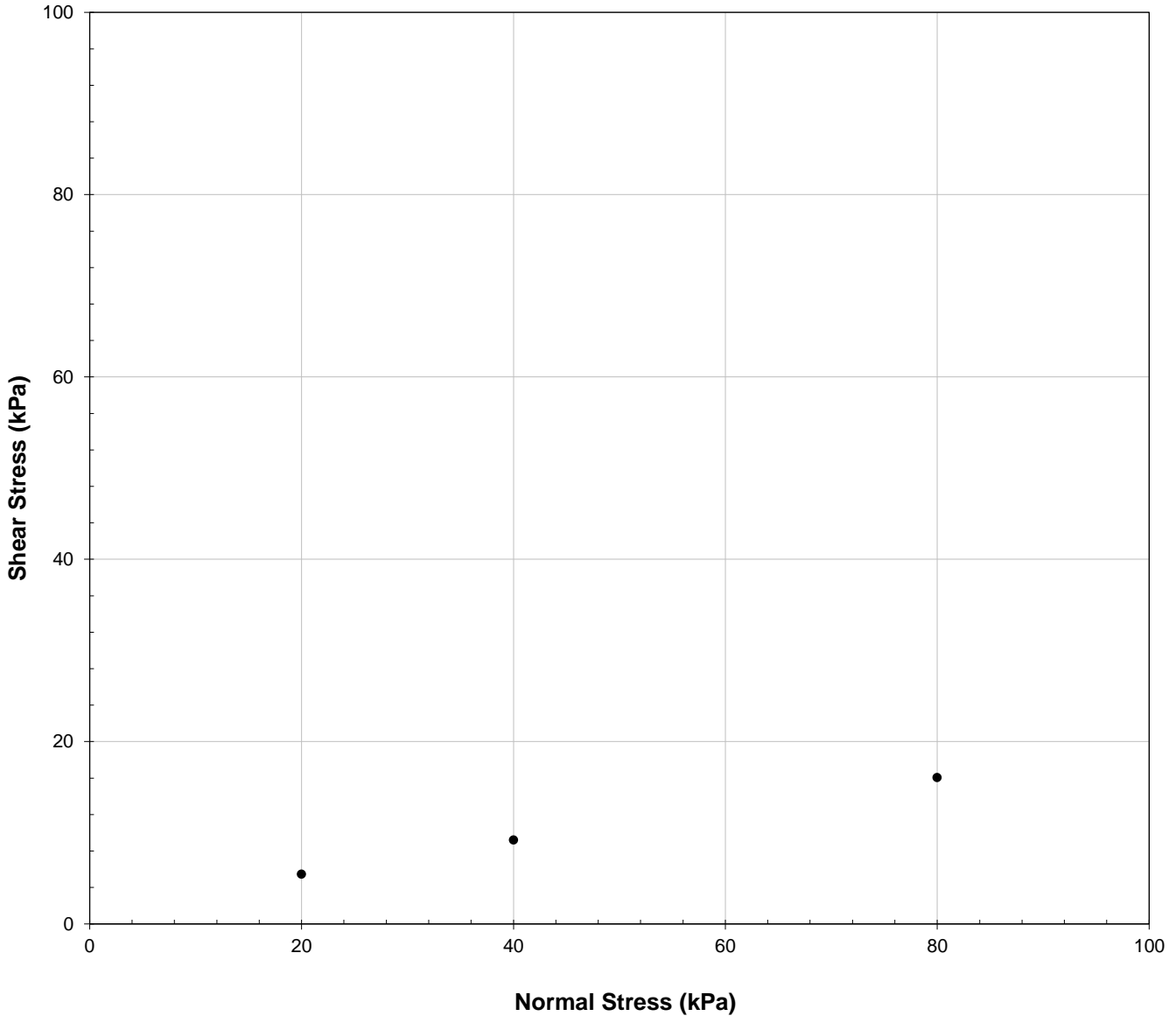
(ring shear apparatus)

Borehole No	ATK_BH14
Sample No	104
Depth (m)	2.50
Sample Type	D

Description:

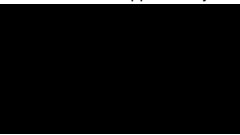
Yellowish brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 12.0$

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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

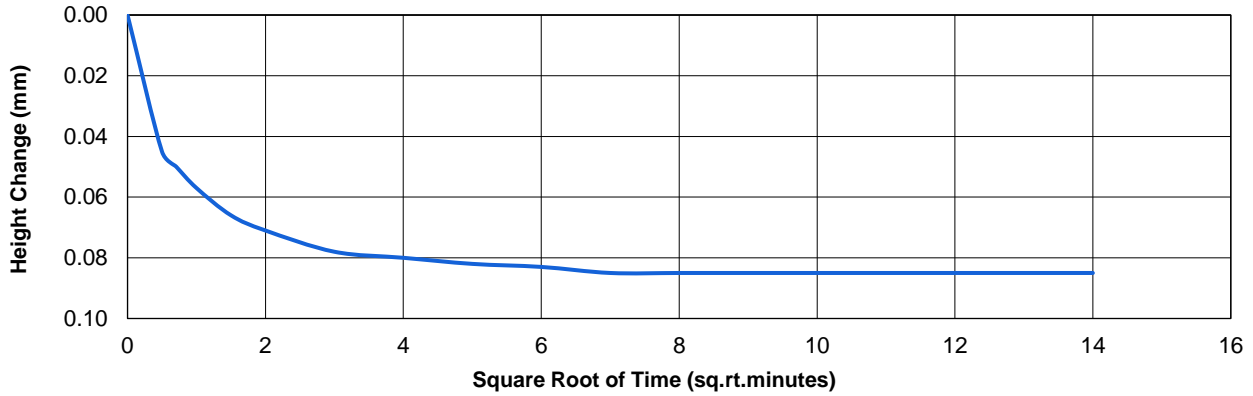
Borehole No	ATK_BH14
Sample No	104
Depth (m)	2.50
Sample Type	D

Description:

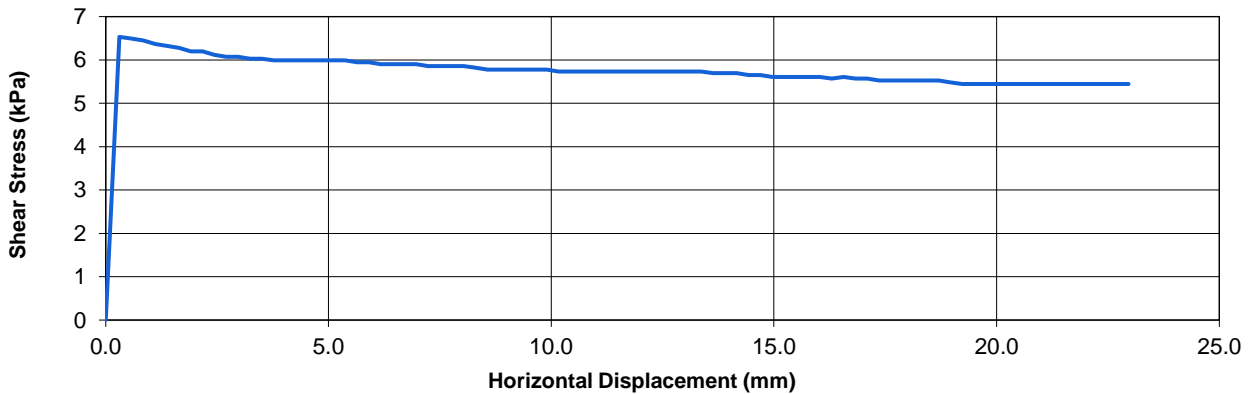
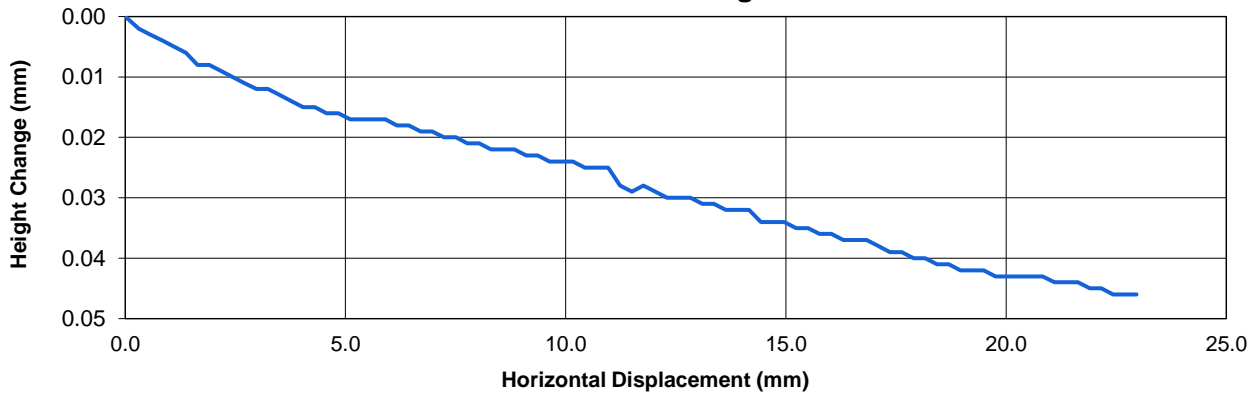
Yellowish brown CLAY.

Specimen: 1

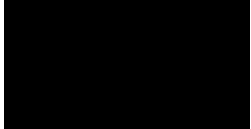
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

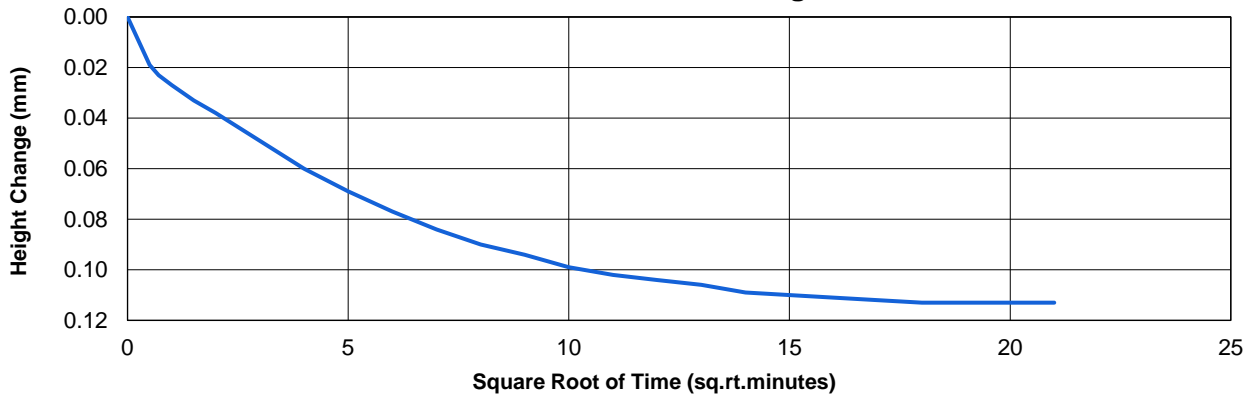
Borehole No	ATK_BH14
Sample No	104
Depth (m)	2.50
Sample Type	D

Description:

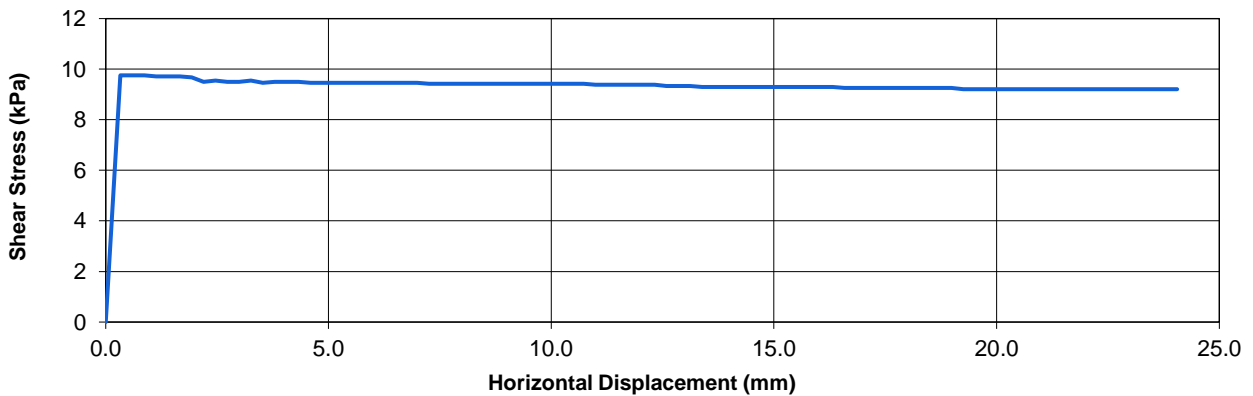
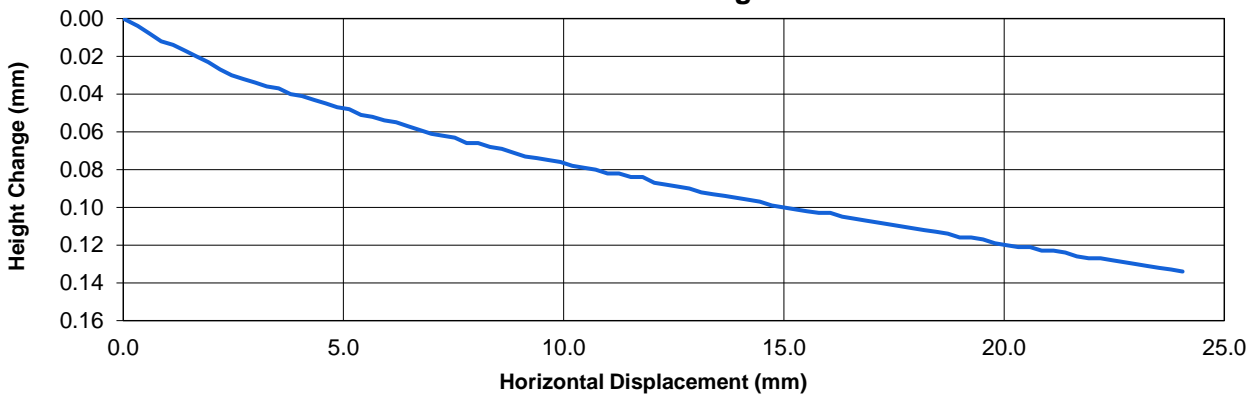
Yellowish brown CLAY.

Specimen: 2

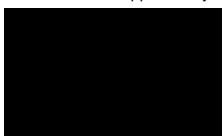
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

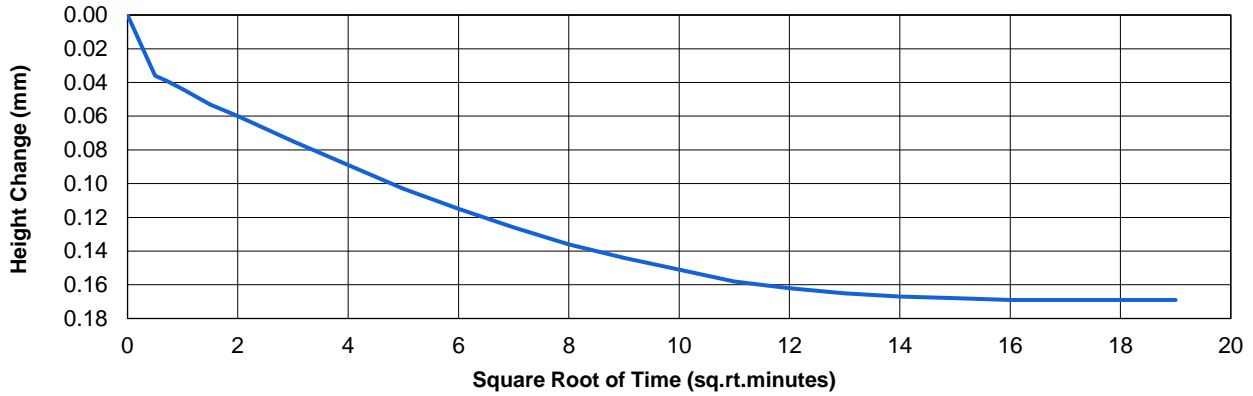
(ring shear apparatus)

Borehole No	ATK_BH14
Sample No	104
Depth (m)	2.50
Sample Type	D

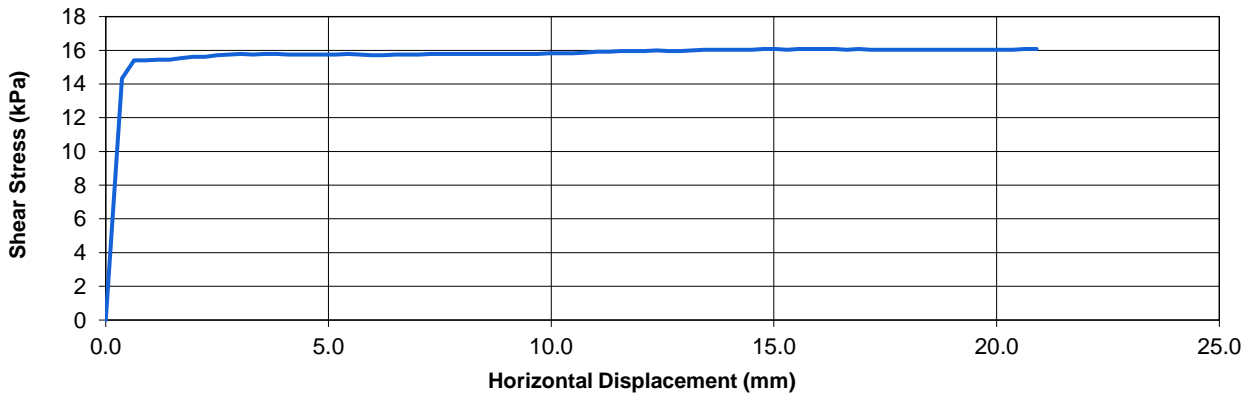
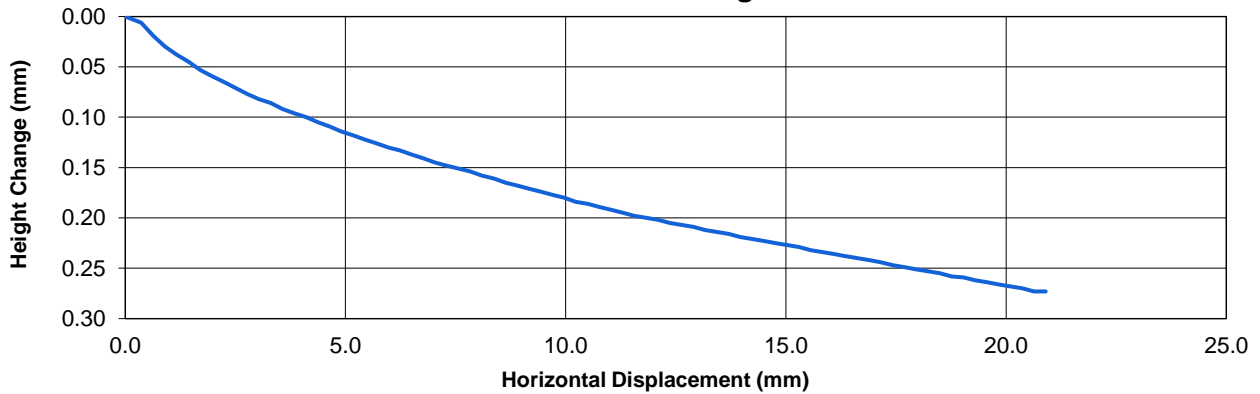
Description:
Yellowish brown CLAY.


Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH16
 Sample No 102
 Depth (m) 0.50
 Sample Type CS

Description:

Grey mottled orangish brown CLAY.

Specimen Details

Natural water content	%	34.5
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	35.02
Outer Radius	mm	49.99
Initial height	mm	4.89
Initial water content	%	34.5
Initial bulk density	Mg/m ³	1.87
Initial dry density	Mg/m ³	1.39

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	10	20	40
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	10	20	40
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	2.5	4.1	6.7
Final mean linear displacement	mm	23.0	24.3	20.9

Final Conditions

Final water content	%	44.3
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	10
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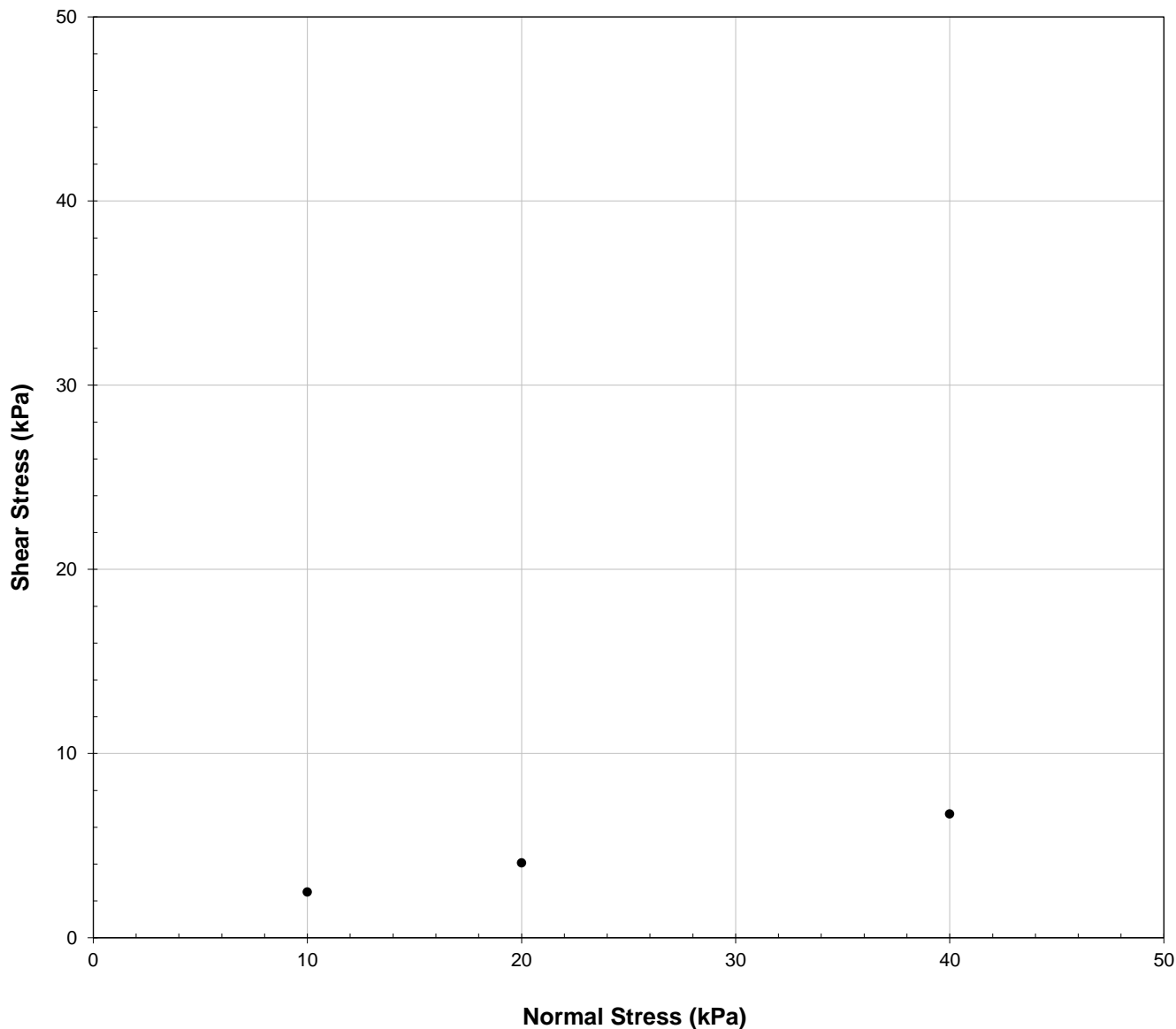
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_BH16
Sample No	102
Depth (m)	0.50
Sample Type	CS


Description:
 Grey mottled orangish brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 10.0$

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DIRECT SHEAR TEST – RING SHEAR

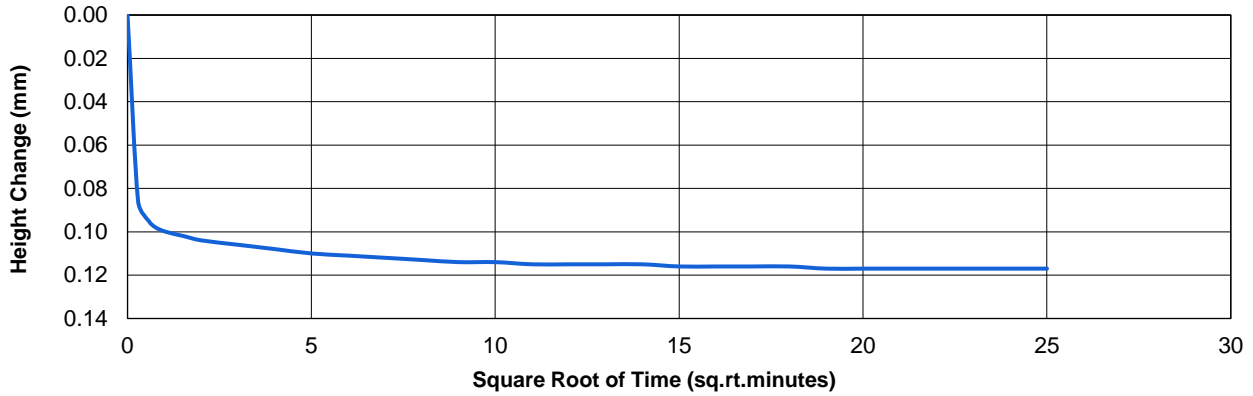
(ring shear apparatus)

Borehole No	ATK_BH16
Sample No	102
Depth (m)	0.50
Sample Type	CS

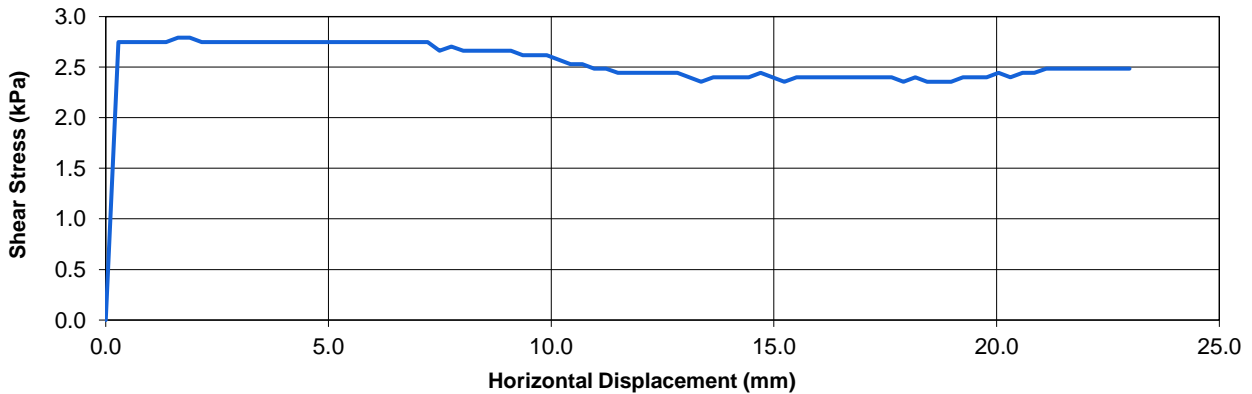
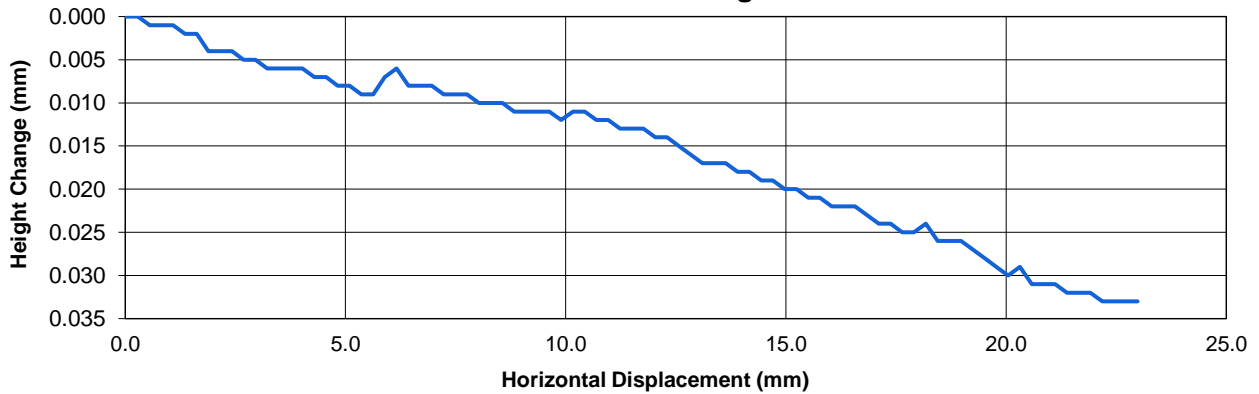
Description:
 Grey mottled orangish brown CLAY.

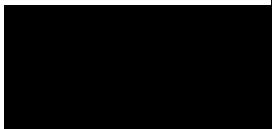
Specimen: 1

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

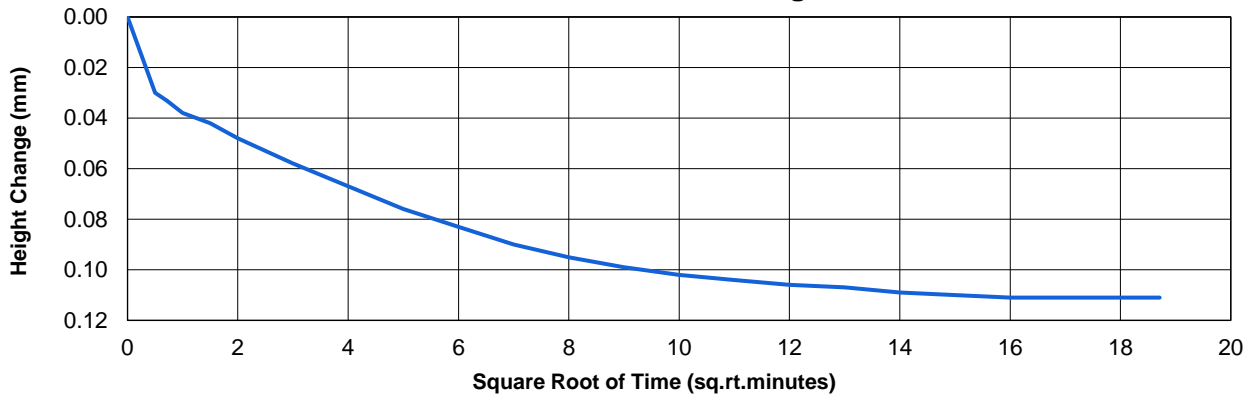
(ring shear apparatus)

Borehole No	ATK_BH16
Sample No	102
Depth (m)	0.50
Sample Type	CS

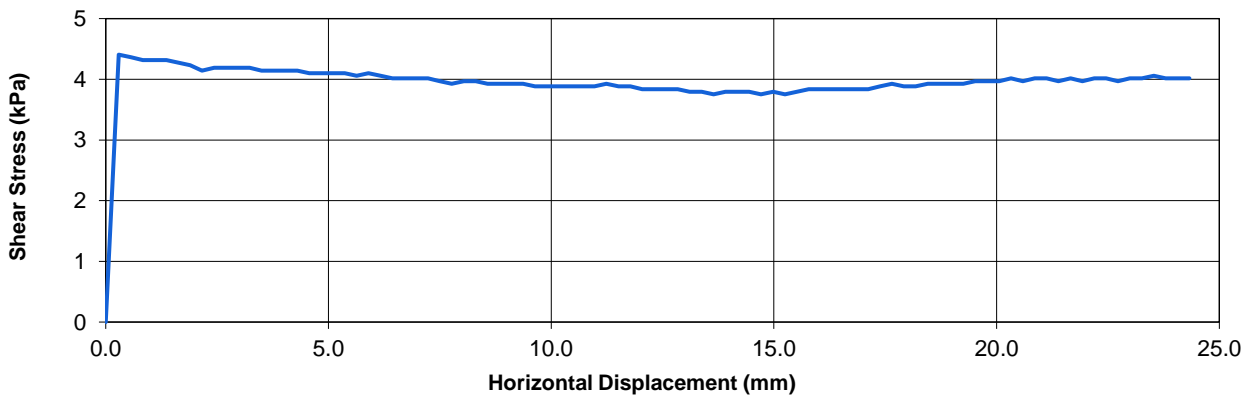
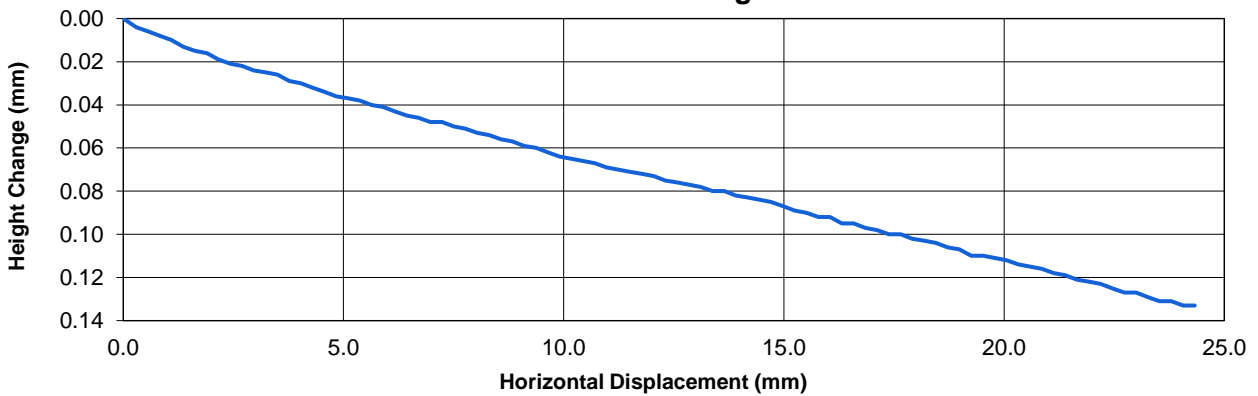
Description:
 Grey mottled orangish brown CLAY.

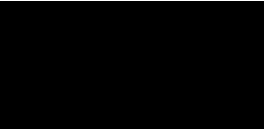
Specimen: 2

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

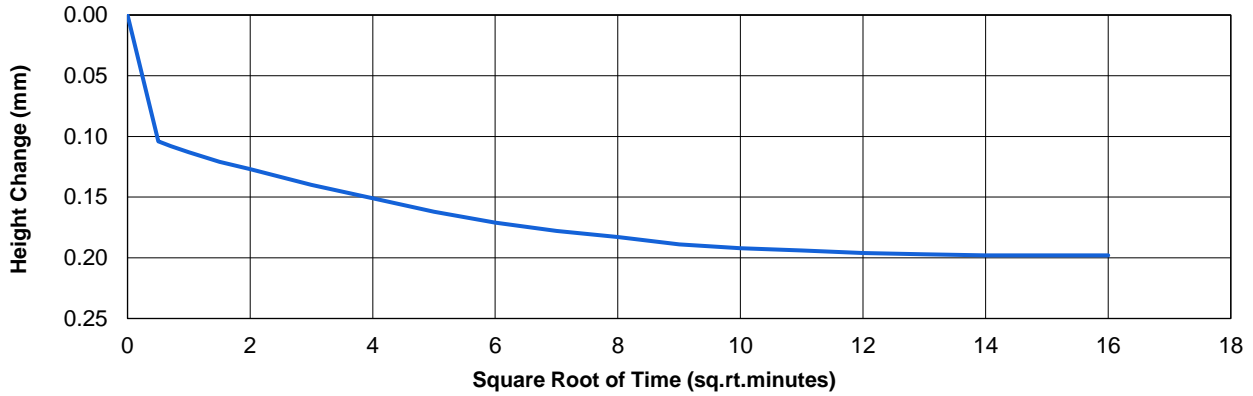
Borehole No	ATK_BH16
Sample No	102
Depth (m)	0.50
Sample Type	CS

Description:

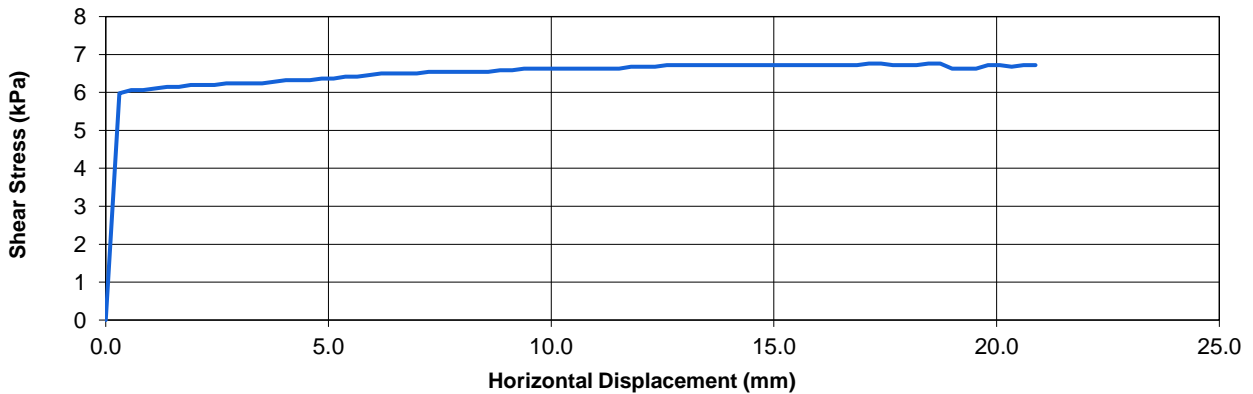
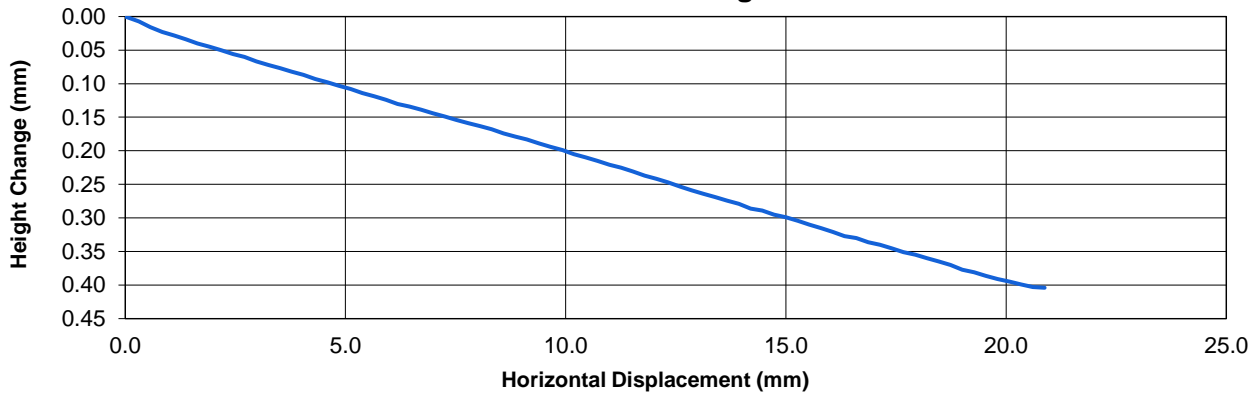
Grey mottled orangish brown CLAY.

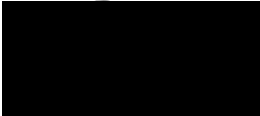
Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP03
 Sample No 11
 Depth (m) 2.50
 Sample Type D

Description:

Brown mottled grey CLAY.

Specimen Details

Natural water content	%	25.5
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.93
Outer Radius	mm	49.94
Initial height	mm	4.88
Initial water content	%	29.2
Initial bulk density	Mg/m ³	1.95
Initial dry density	Mg/m ³	1.51

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	3	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.3	9.4	16.8
Final mean linear displacement	mm	68.3	21.9	21.4

Final Conditions

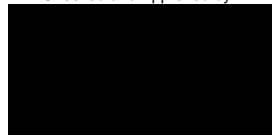
Final water content	%	34.2
---------------------	---	------

Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	10
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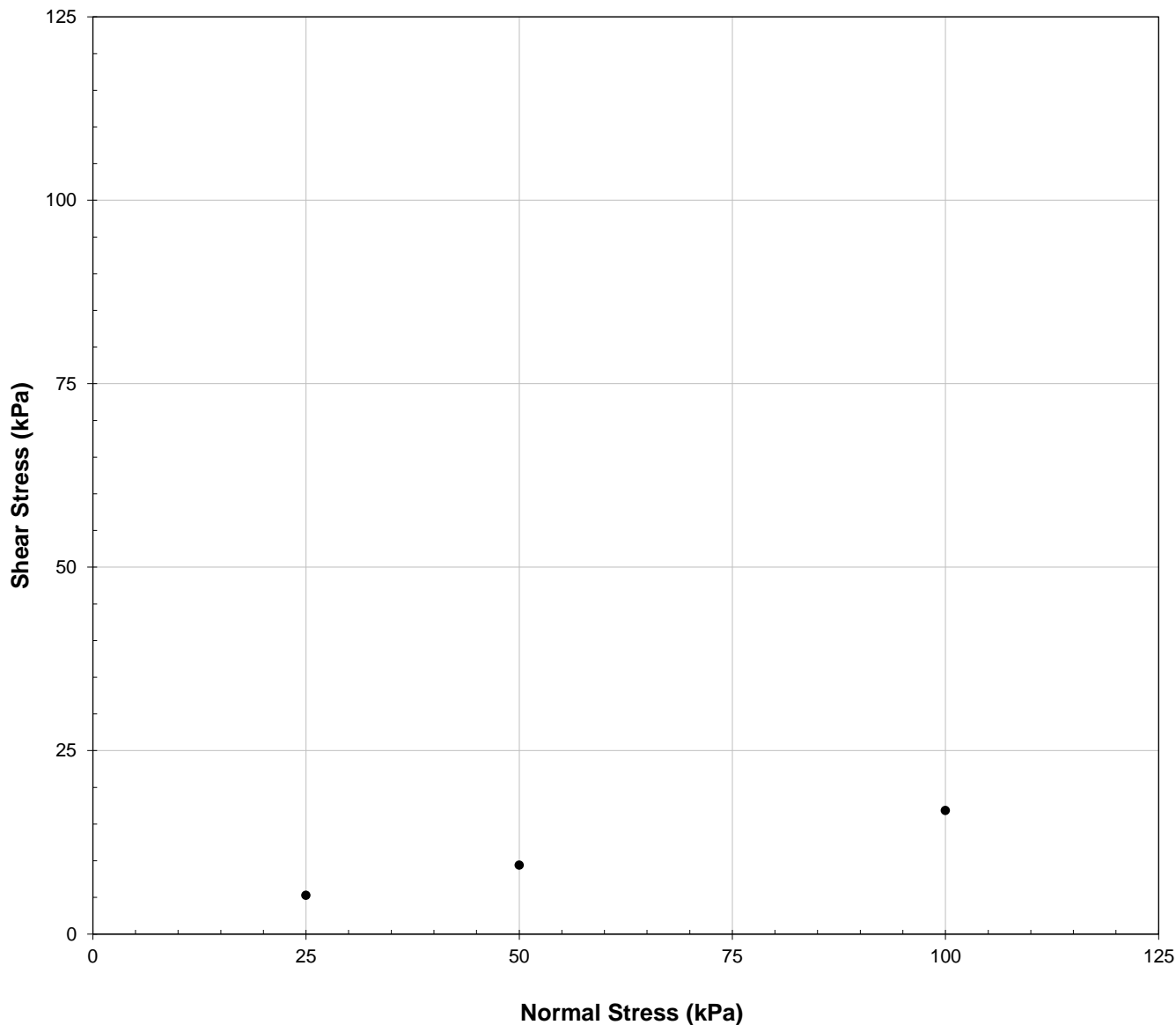
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_TP03
Sample No	11
Depth (m)	2.50
Sample Type	D

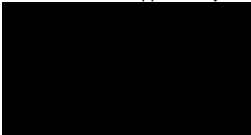
Description:
Brown mottled grey CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 10.0$

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DIRECT SHEAR TEST – RING SHEAR

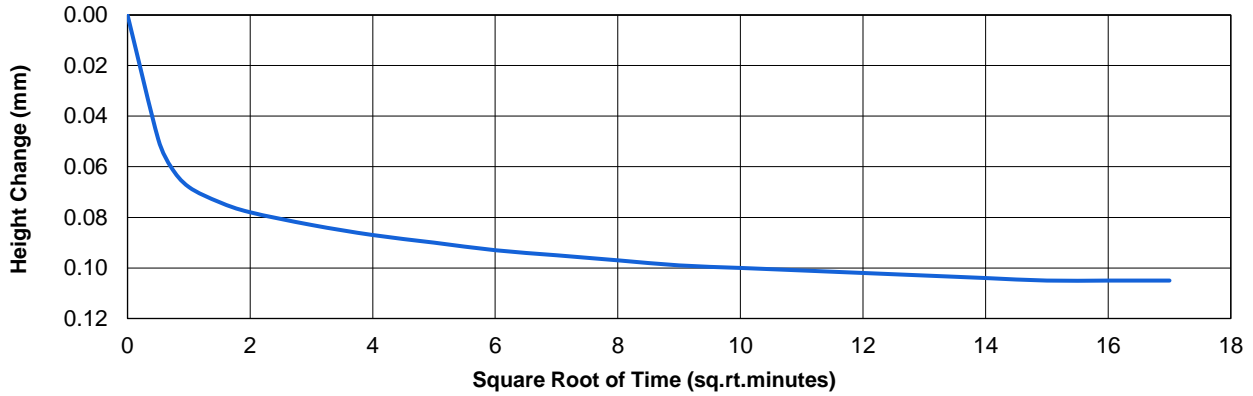
(ring shear apparatus)

Borehole No	ATK_TP03
Sample No	11
Depth (m)	2.50
Sample Type	D

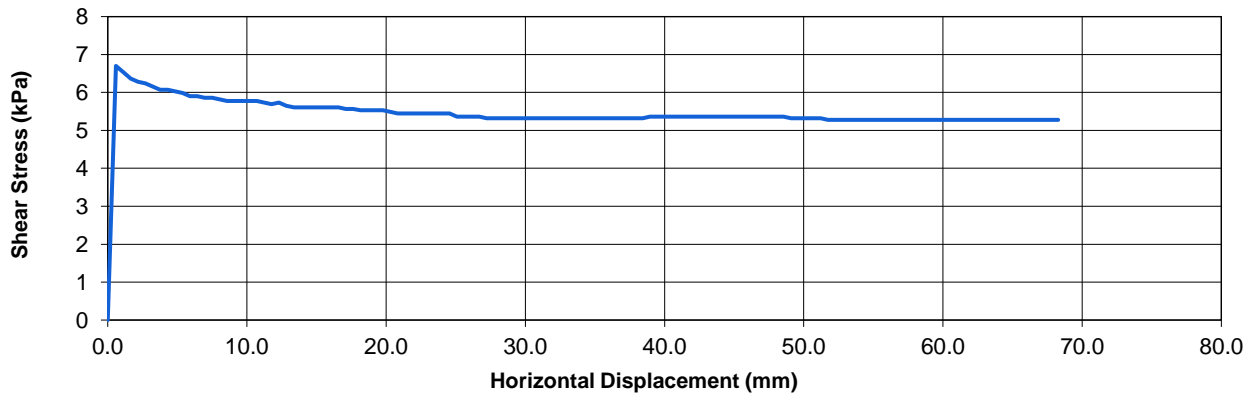
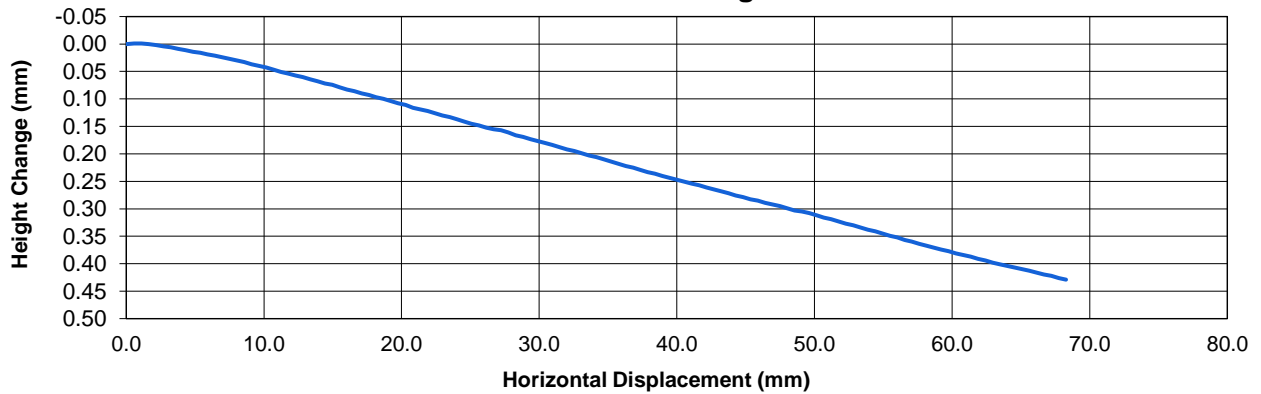
Description:
Brown mottled grey CLAY.

Specimen: 1

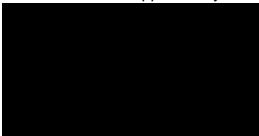
Consolidation Stage



Shear Stage



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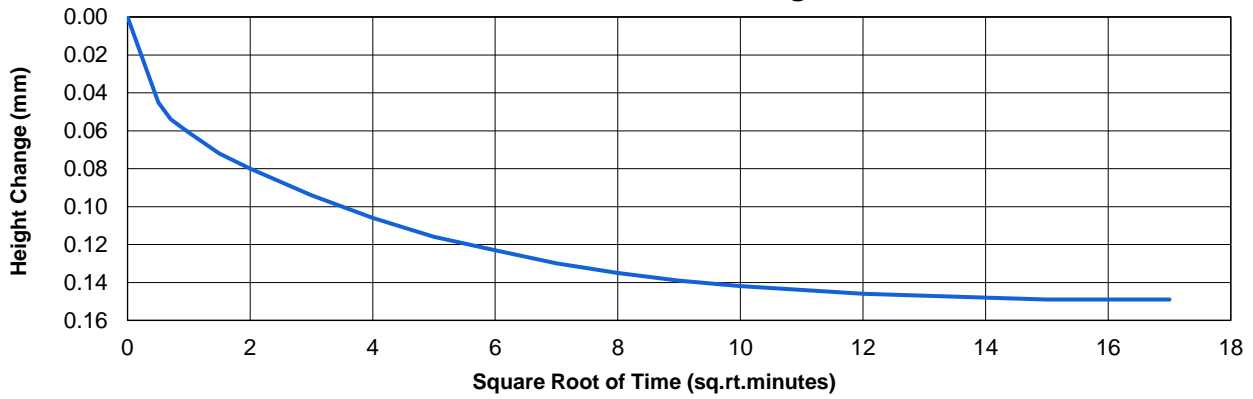
(ring shear apparatus)

Borehole No	ATK_TP03
Sample No	11
Depth (m)	2.50
Sample Type	D

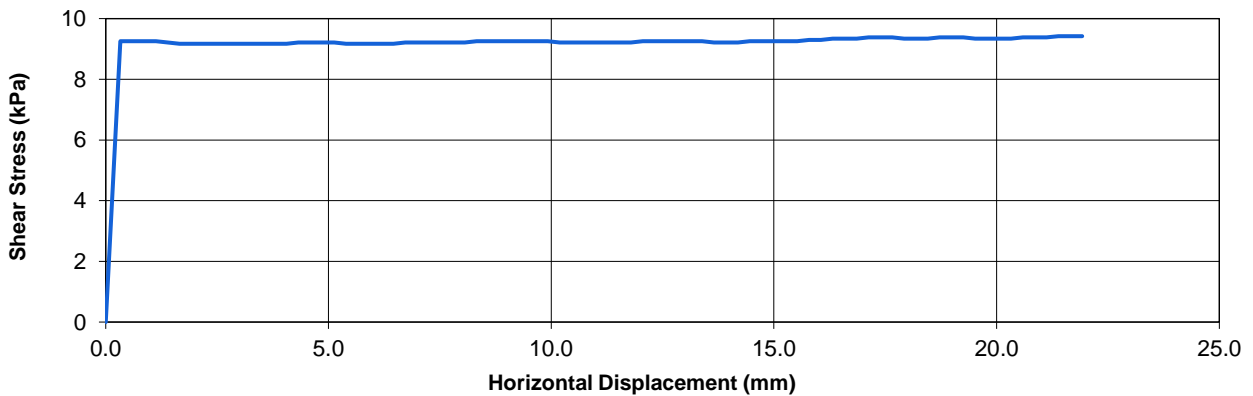
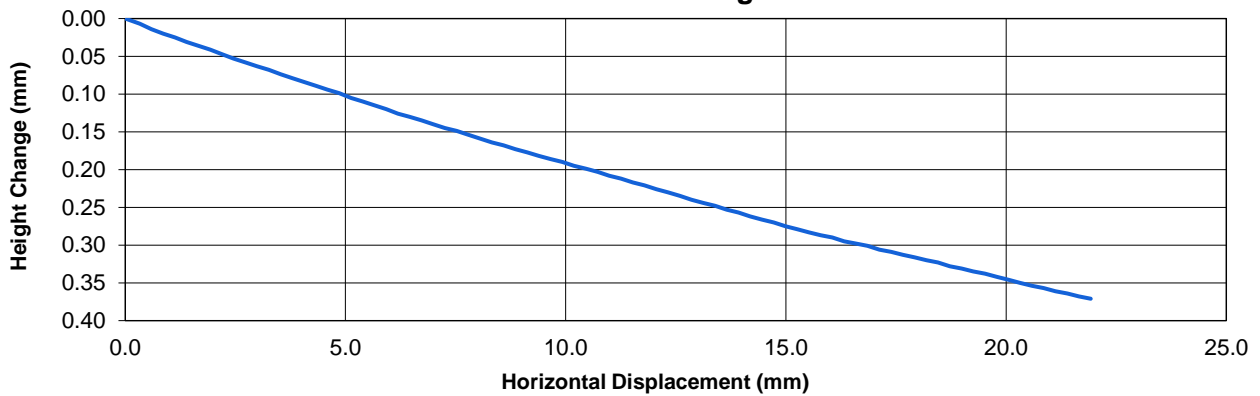
Description:
Brown mottled grey CLAY.

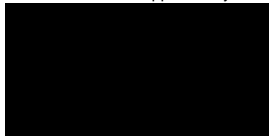
Specimen: 2

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

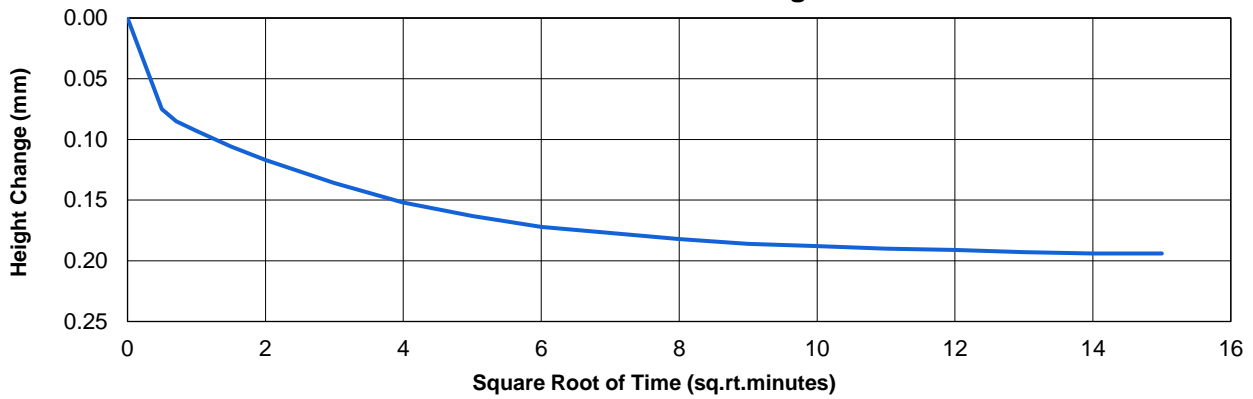
(ring shear apparatus)

Borehole No	ATK_TP03
Sample No	11
Depth (m)	2.50
Sample Type	D

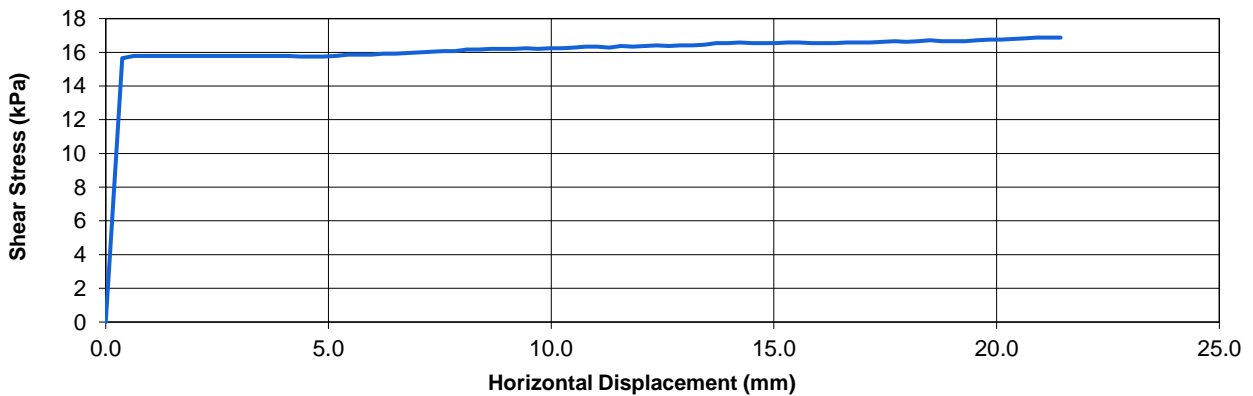
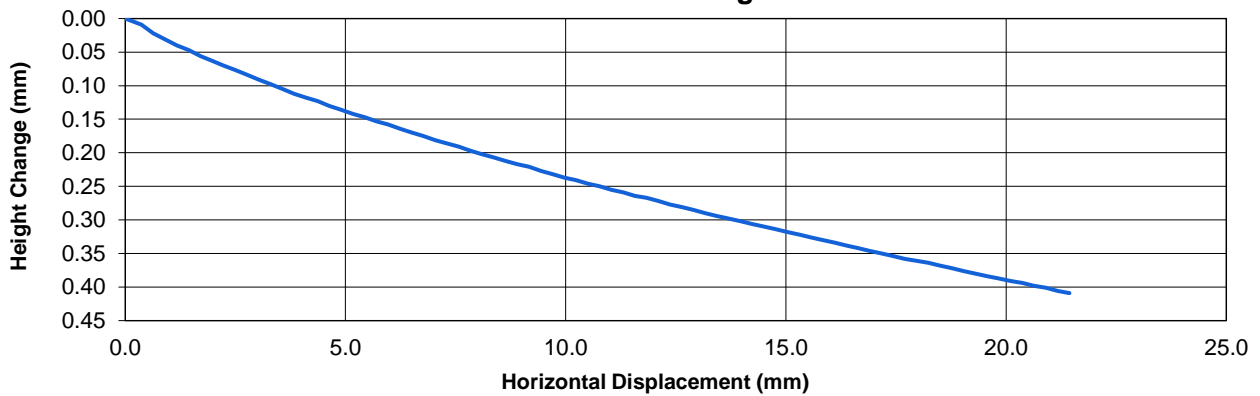
Description:
Brown mottled grey CLAY.

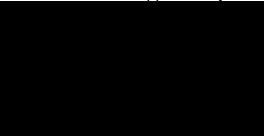
Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP04
 Sample No 12
 Depth (m) 2.55
 Sample Type D

Description:

Brown CLAY.

Specimen Details

Natural water content	%	42.4
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.85
Outer Radius	mm	49.99
Initial height	mm	5.18
Initial water content	%	42.4
Initial bulk density	Mg/m ³	1.75
Initial dry density	Mg/m ³	1.23

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	3	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	6.8	9.9	17.0
Final mean linear displacement	mm	68.3	22.2	21.4

Final Conditions

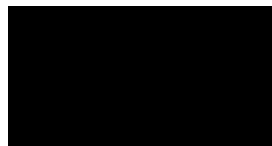
Final water content	%	47.4
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	10
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DIRECT SHEAR TEST – RING SHEAR

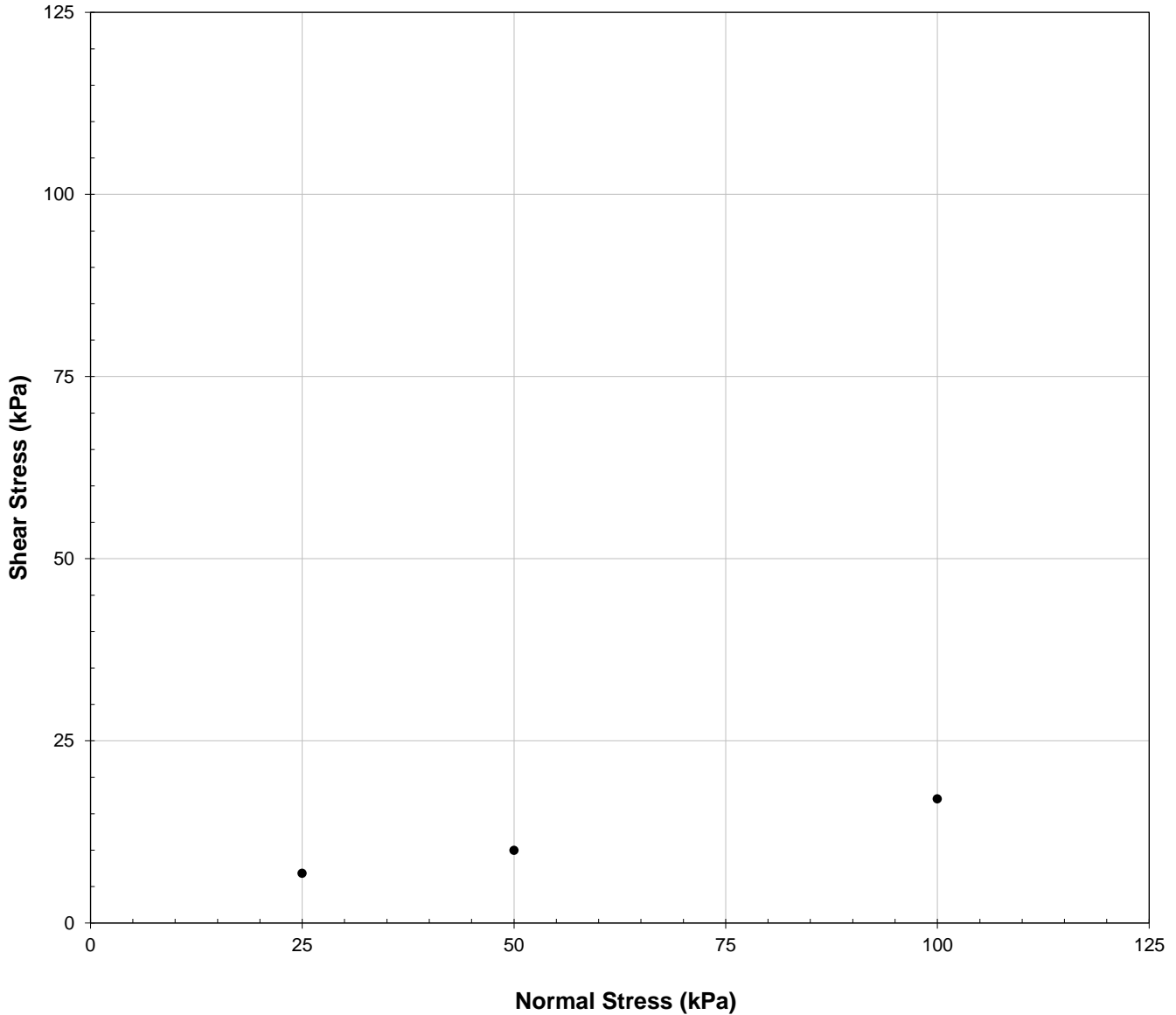
(ring shear apparatus)

Borehole No ATK_TP04
Sample No 12
Depth (m) 2.55
Sample Type D

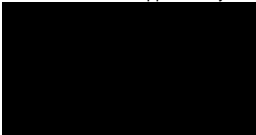
Description:

Brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 10.0$

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DIRECT SHEAR TEST – RING SHEAR

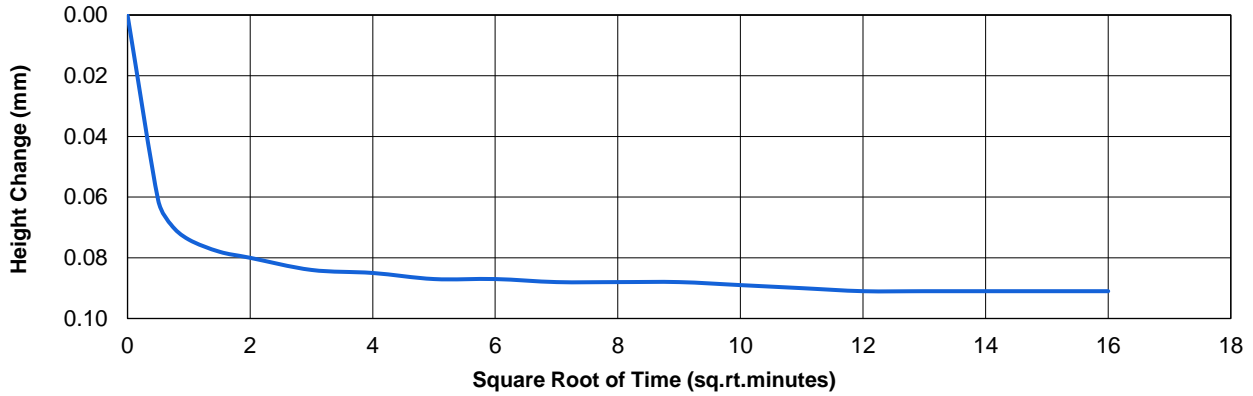
(ring shear apparatus)

Borehole No	ATK_TP04
Sample No	12
Depth (m)	2.55
Sample Type	D

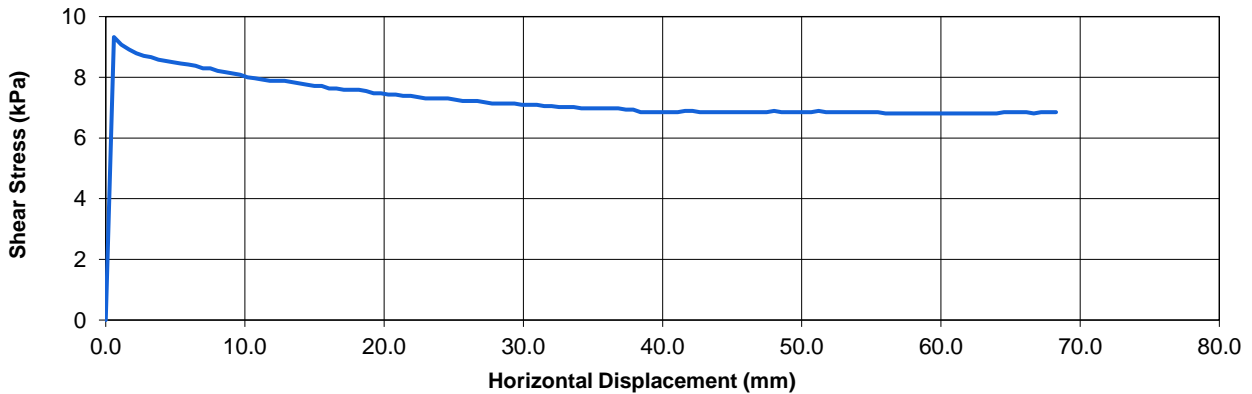
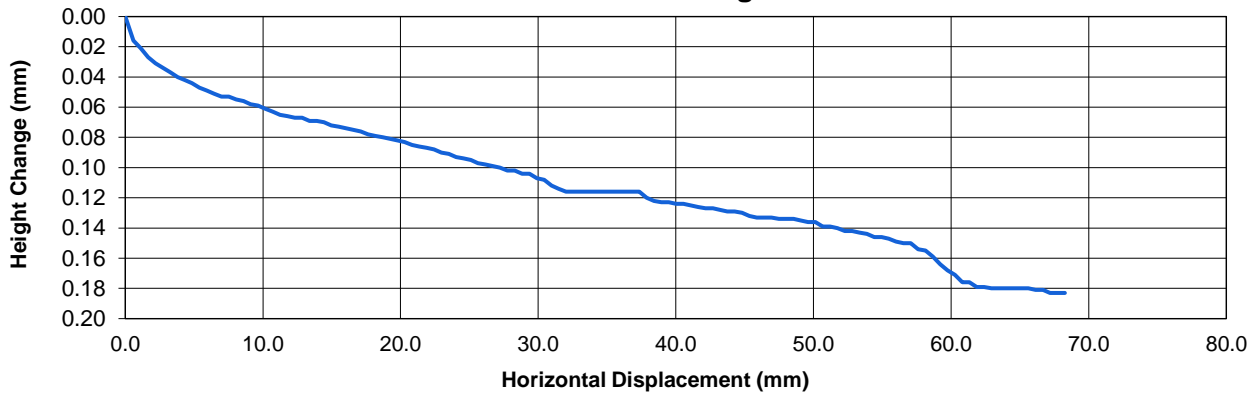
Description:
Brown CLAY.

Specimen: 1

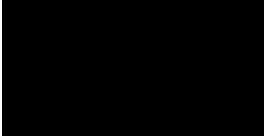
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

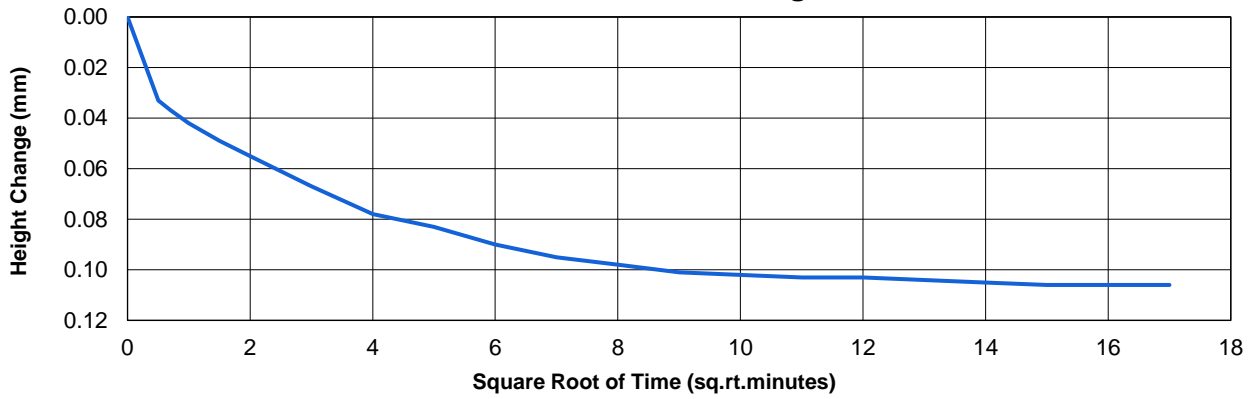
(ring shear apparatus)

Borehole No	ATK_TP04
Sample No	12
Depth (m)	2.55
Sample Type	D

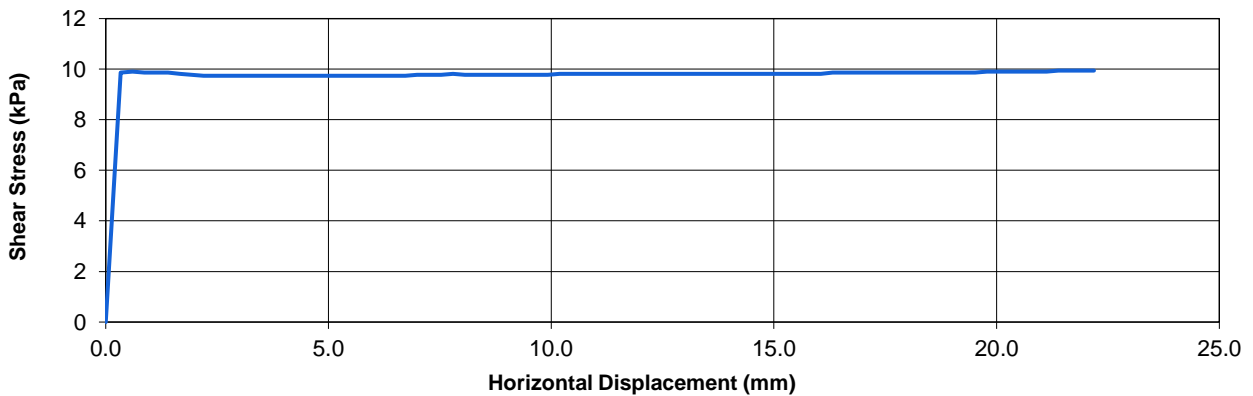
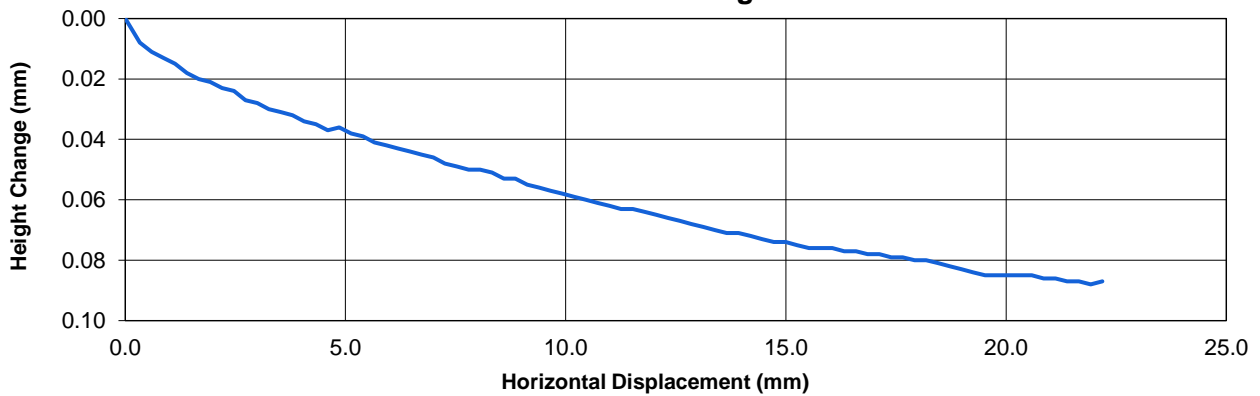
Description:
Brown CLAY.

Specimen: 2

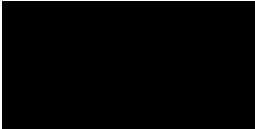
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

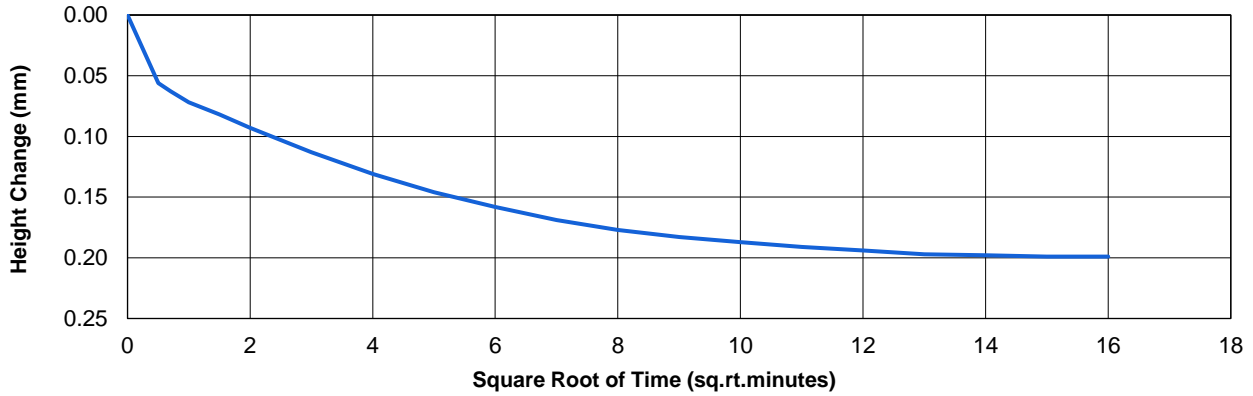
Borehole No	ATK_TP04
Sample No	12
Depth (m)	2.55
Sample Type	D

Description:

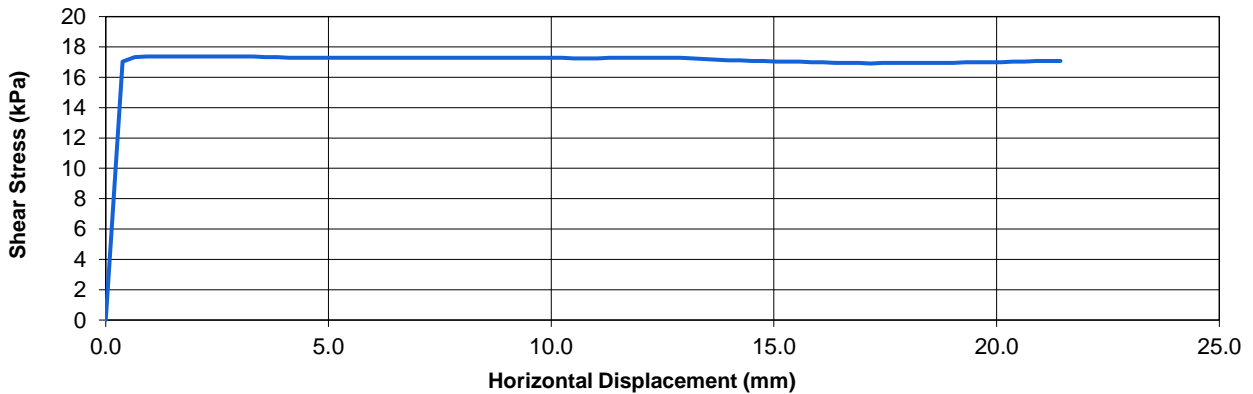
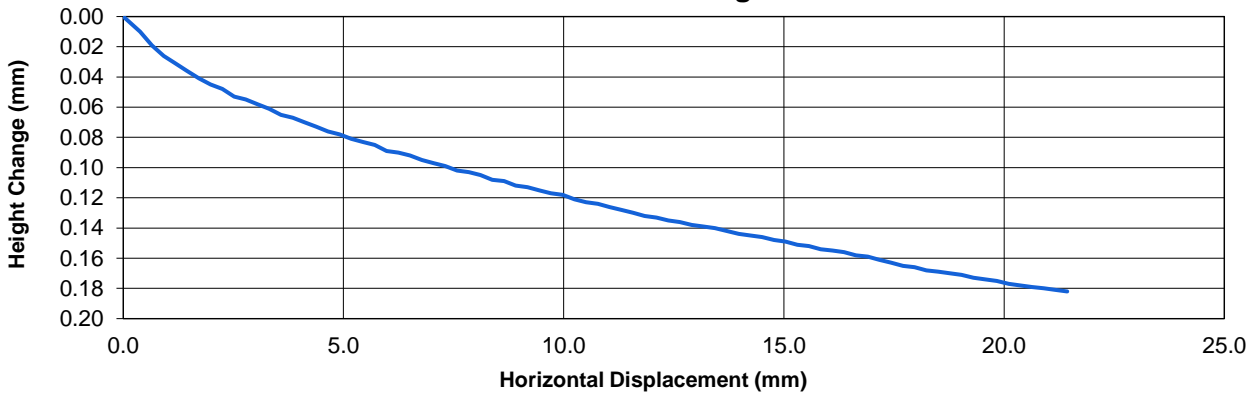
Brown CLAY.

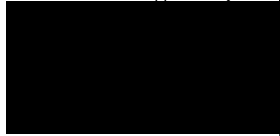
Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP06
 Sample No D11
 Depth (m) 2.50
 Sample Type D

Description:

Brown mottled grey CLAY.

Specimen Details

Natural water content	%	34.6
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	35.02
Outer Radius	mm	49.99
Initial height	mm	4.89
Initial water content	%	34.6
Initial bulk density	Mg/m ³	1.85
Initial dry density	Mg/m ³	1.37

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	3	1	1
Residual Conditions:				
Rate of angular displacement	degs/min	0.024	0.024	0.24
Residual shear stress	kPa	6.8	10.2	17.9
Final mean linear displacement	mm	68.4	22.0	213.8

Final Conditions

Final water content	%	39.4
---------------------	---	------

Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	10.5
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Notes

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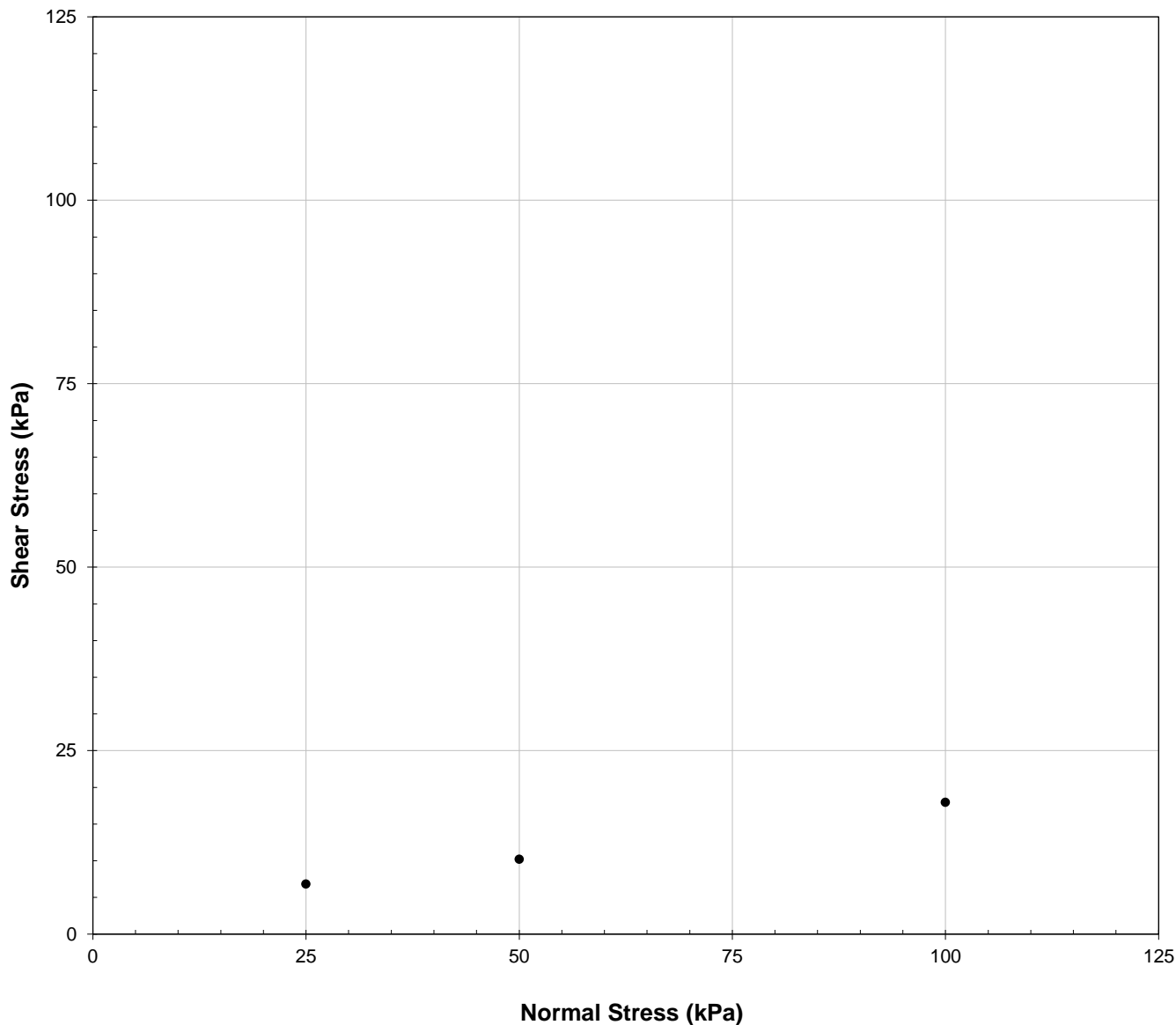
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_TP06
Sample No	D11
Depth (m)	2.50
Sample Type	D

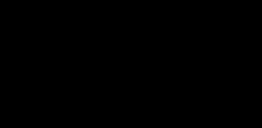
Description:
Brown mottled grey CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 10.5$

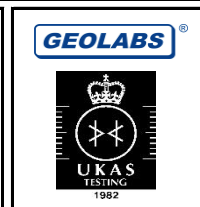
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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

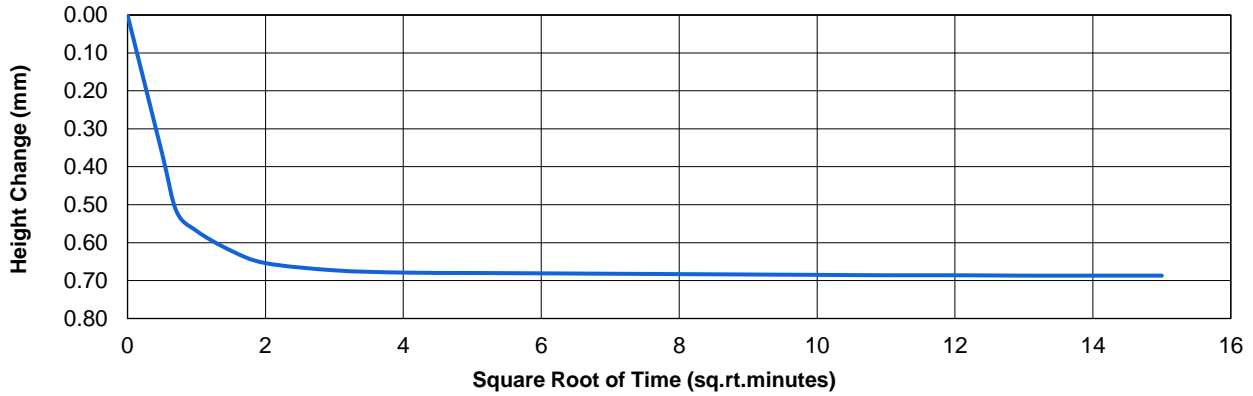
Borehole No	ATK_TP06
Sample No	D11
Depth (m)	2.50
Sample Type	D

Description:

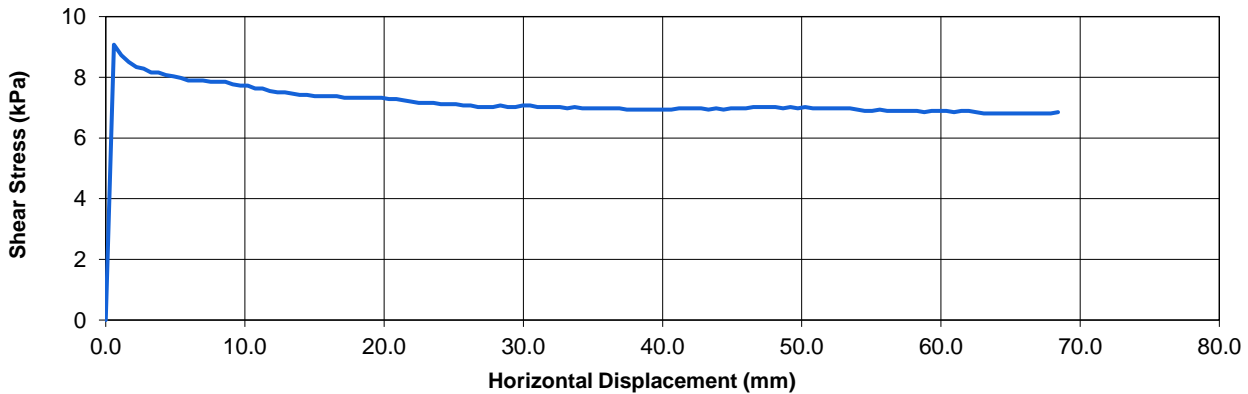
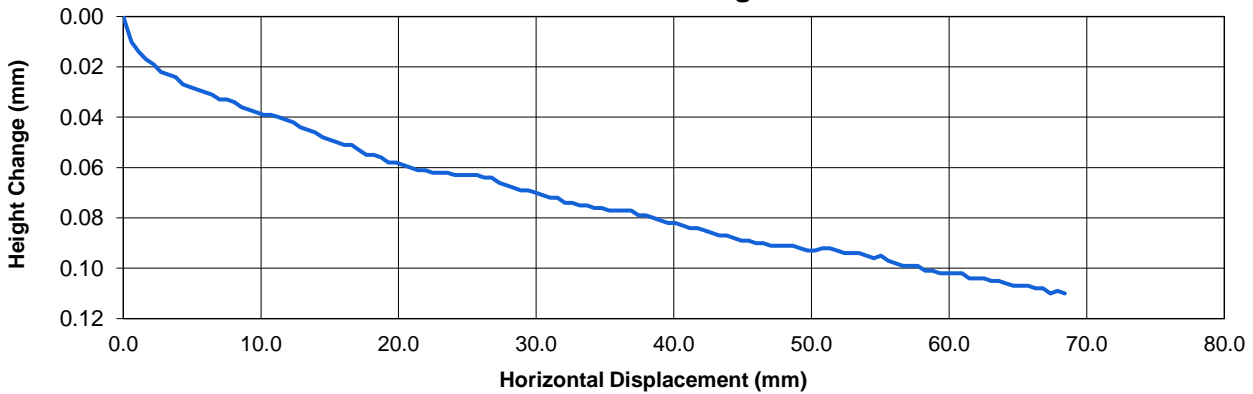
Brown mottled grey CLAY.

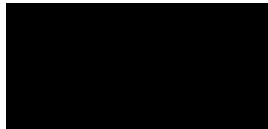
Specimen: 1

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

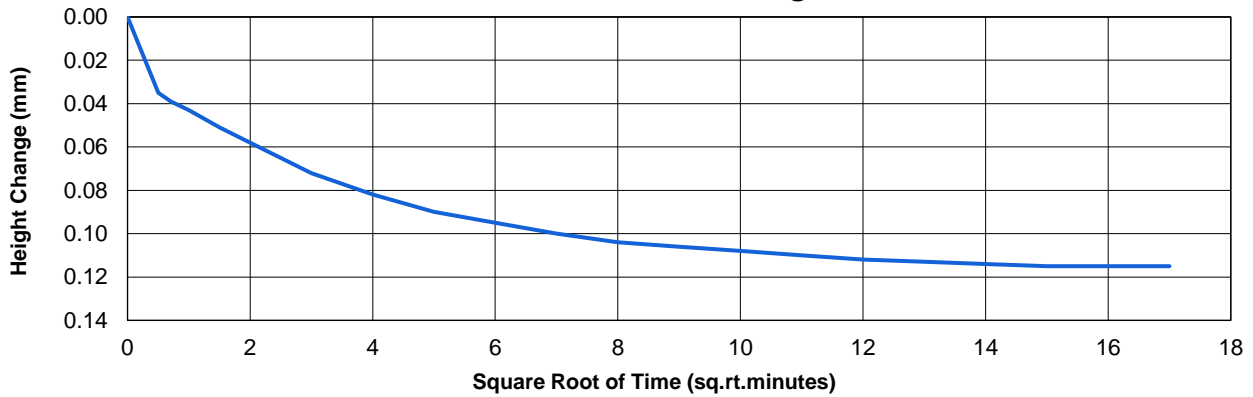
(ring shear apparatus)

Borehole No	ATK_TP06
Sample No	D11
Depth (m)	2.50
Sample Type	D

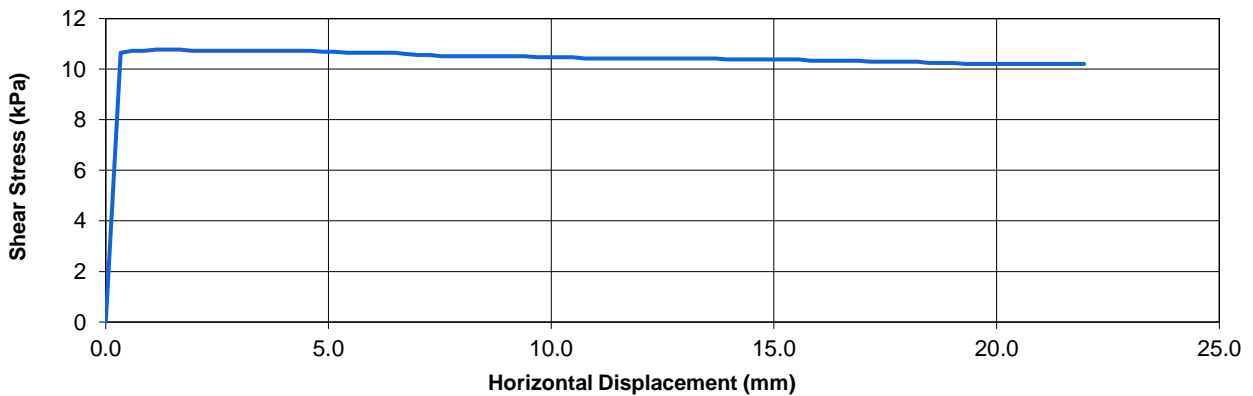
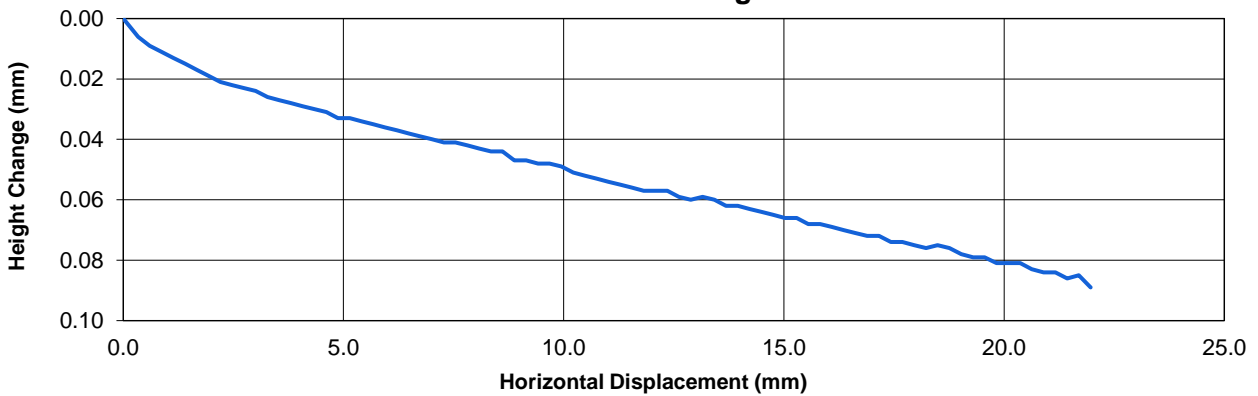
Description:
Brown mottled grey CLAY.

Specimen: 2

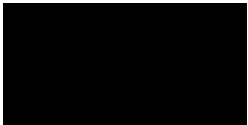
Consolidation Stage



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DIRECT SHEAR TEST – RING SHEAR

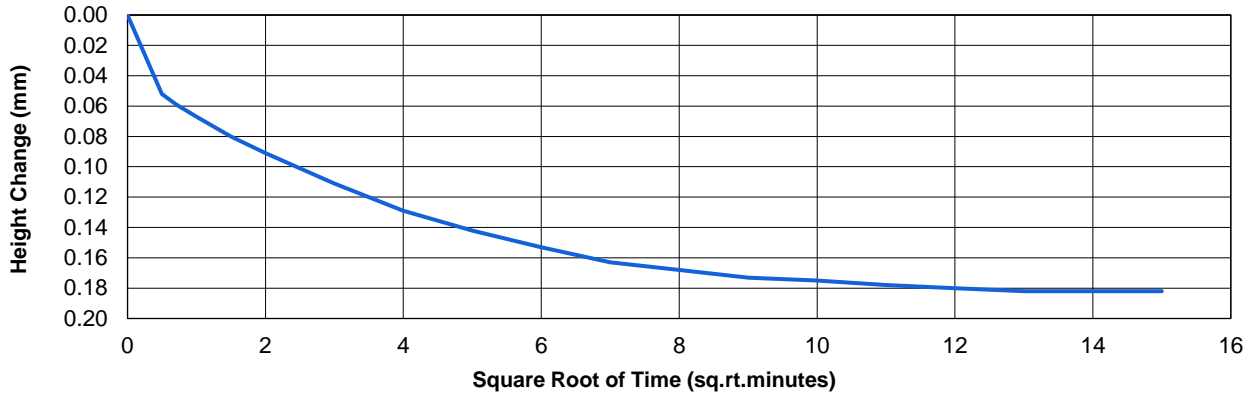
(ring shear apparatus)

Borehole No	ATK_TP06
Sample No	D11
Depth (m)	2.50
Sample Type	D

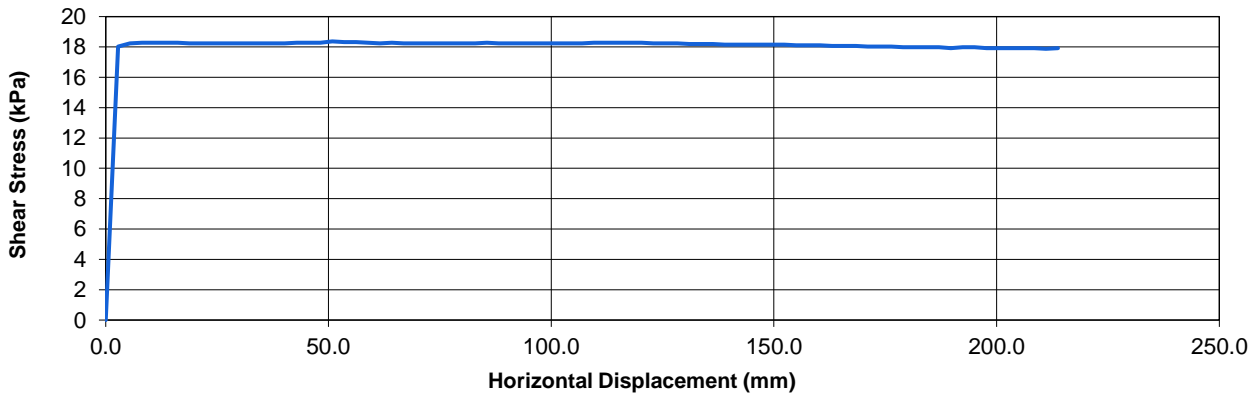
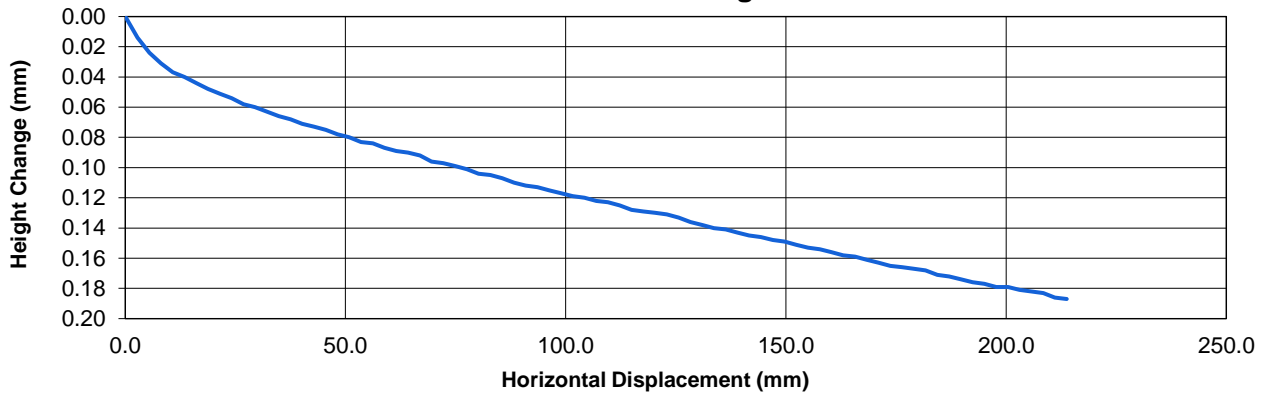
Description:
Brown mottled grey CLAY.

Specimen: 3

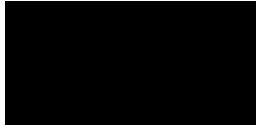
Consolidation Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP07A
 Sample No 104
 Depth (m) 1.00
 Sample Type D

Description:

Brown slightly sandy slightly gravelly CLAY.
 Sand is coarse and gravel fine to medium.

Specimen Details

Natural water content	%	30.4
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.93
Outer Radius	mm	49.94
Initial height	mm	4.88
Initial water content	%	30.4
Initial bulk density	Mg/m ³	1.93
Initial dry density	Mg/m ³	1.48

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	15	30	60
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	15	30	60
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.4	10.0	16.7
Final mean linear displacement	mm	20.6	19.3	28.9

Final Conditions

Final water content	%	32.7
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	16.5
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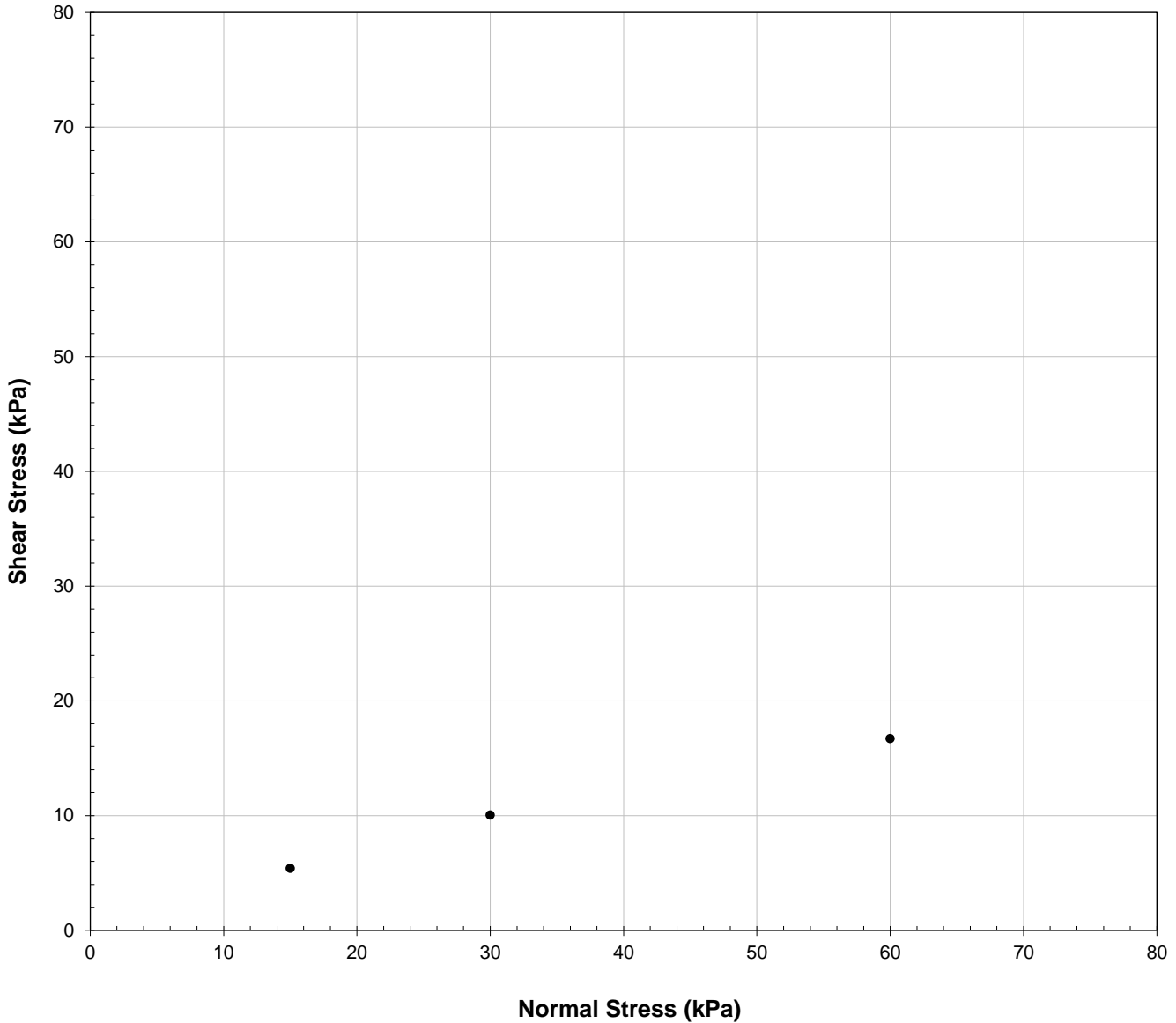
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_TP07A
Sample No	104
Depth (m)	1.00
Sample Type	D

Description:
Brown slightly sandy slightly gravelly CLAY.
Sand is coarse and gravel fine to medium.


Shear Stress v Normal Stress



Residual: $c'_r = 0$

$\Phi'_r = 16.5$

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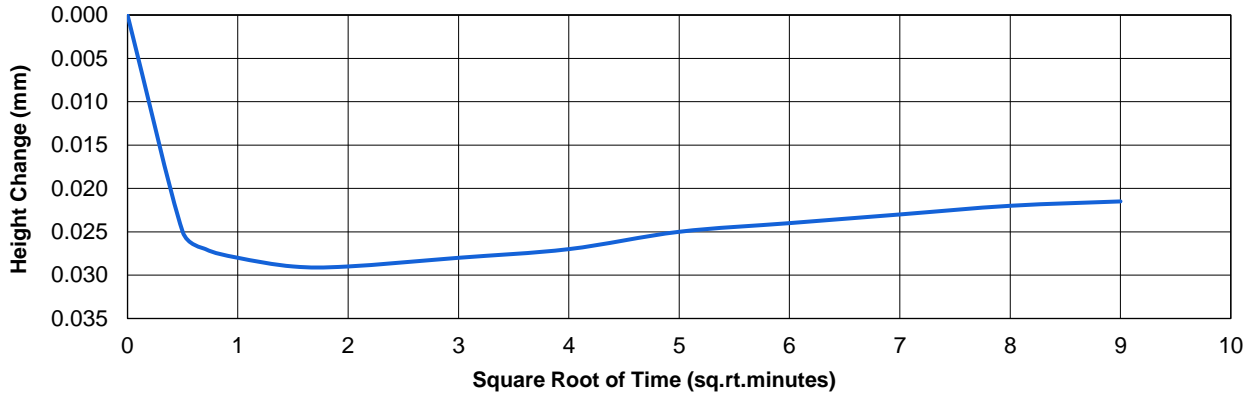
(ring shear apparatus)

Borehole No	ATK_TP07A
Sample No	104
Depth (m)	1.00
Sample Type	D

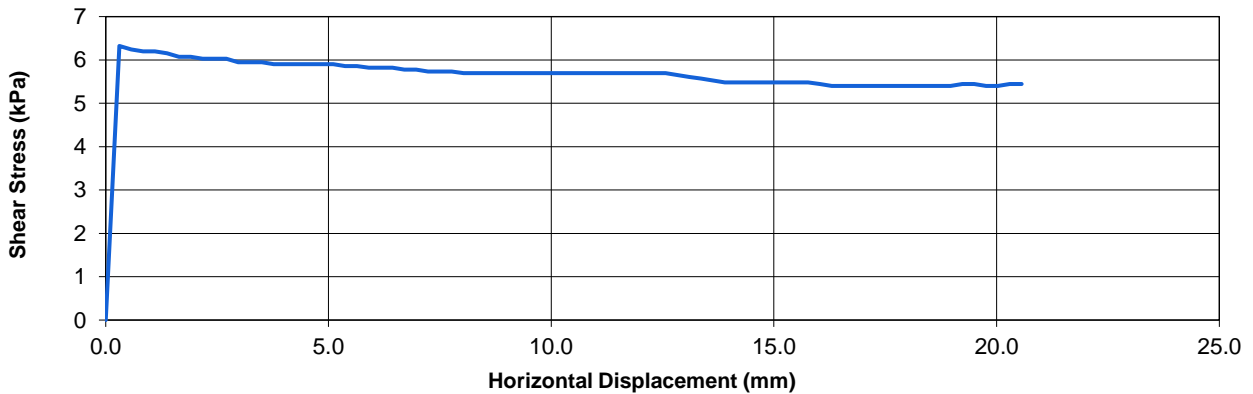
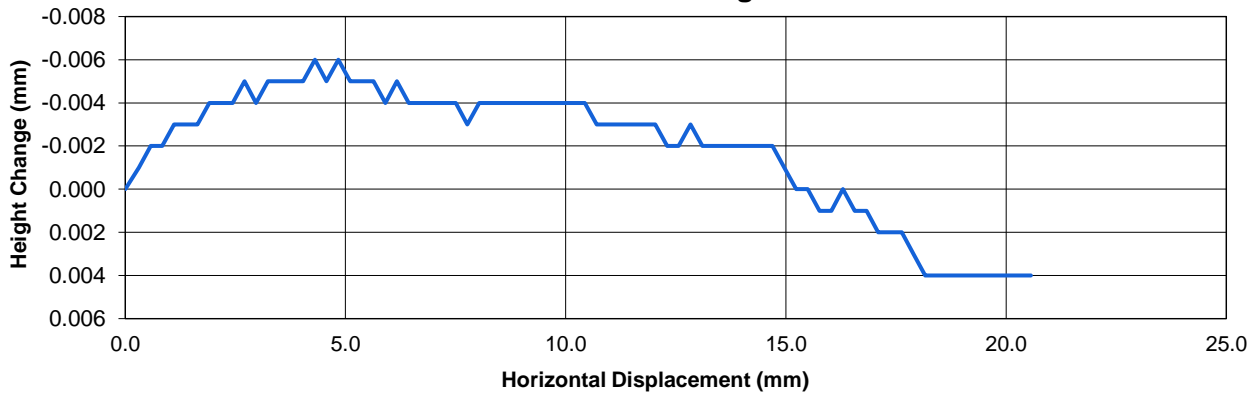
Description:
Brown slightly sandy slightly gravelly CLAY.
Sand is coarse and gravel fine to medium.

Specimen: 1

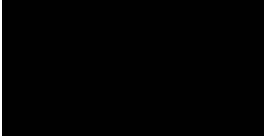
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

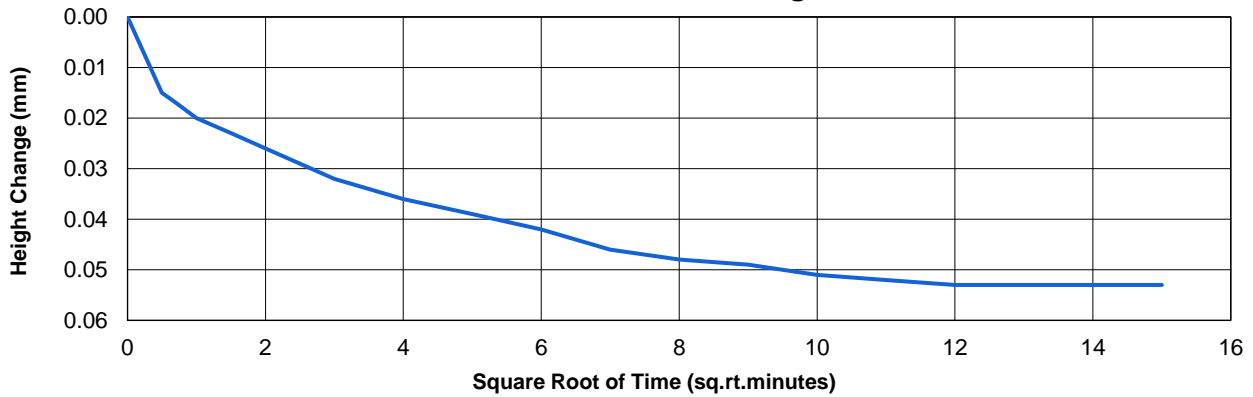
(ring shear apparatus)

Borehole No	ATK_TP07A
Sample No	104
Depth (m)	1.00
Sample Type	D

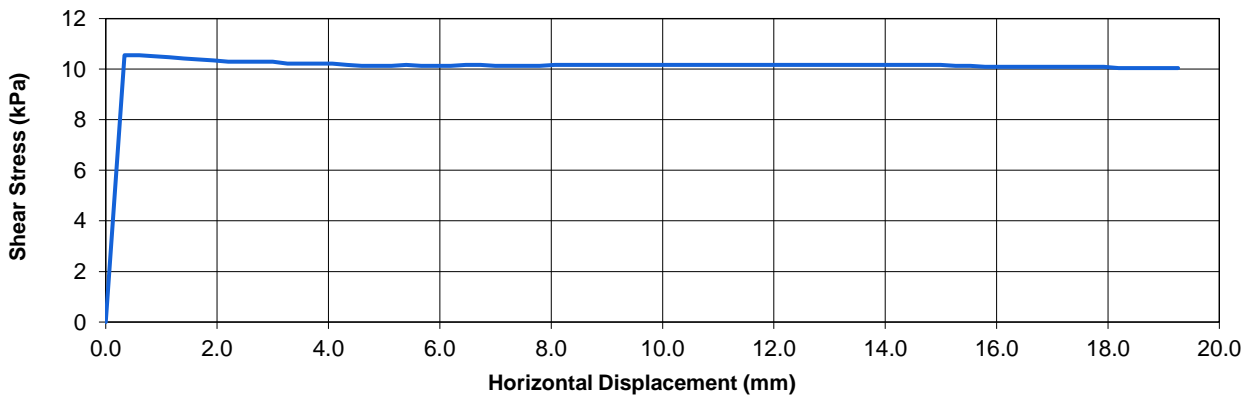
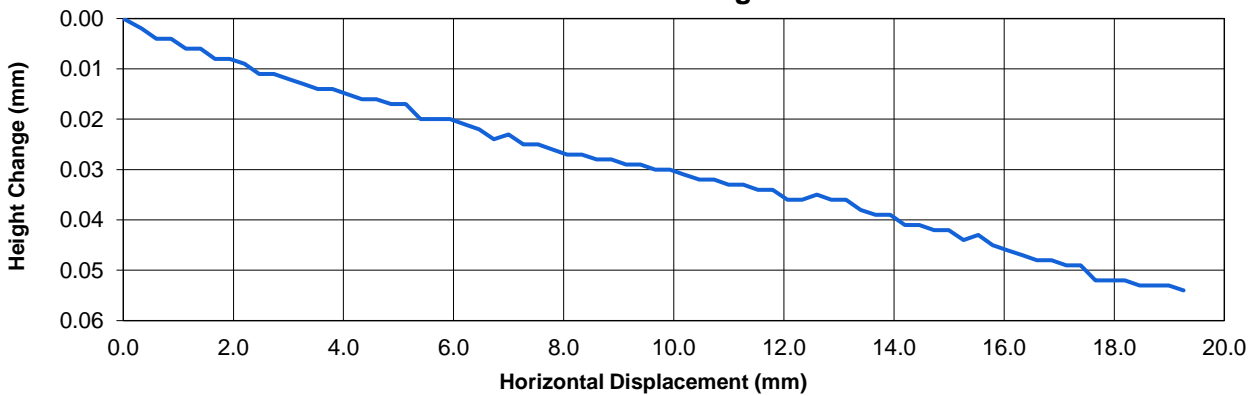
Description:
Brown slightly sandy slightly gravelly CLAY.
Sand is coarse and gravel fine to medium.

Specimen: 2

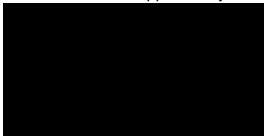
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

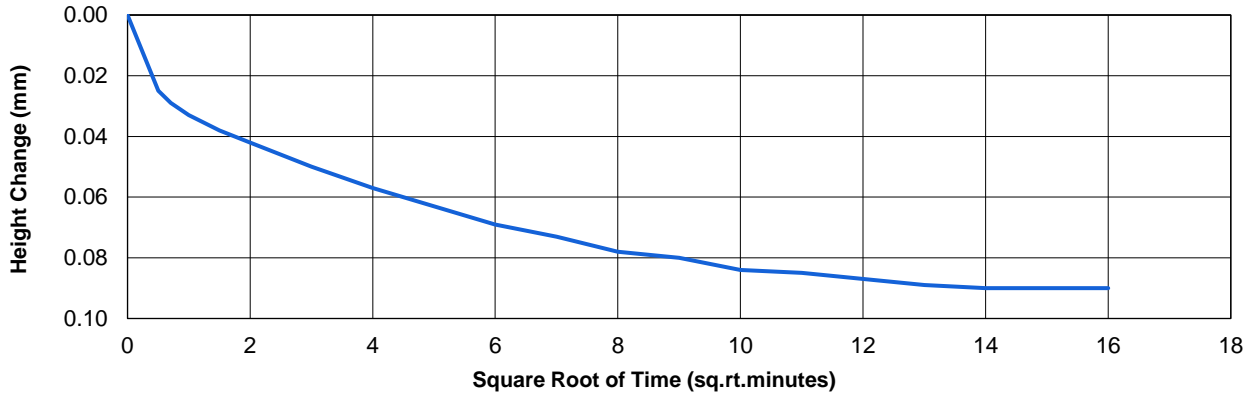
(ring shear apparatus)

Borehole No	ATK_TP07A
Sample No	104
Depth (m)	1.00
Sample Type	D

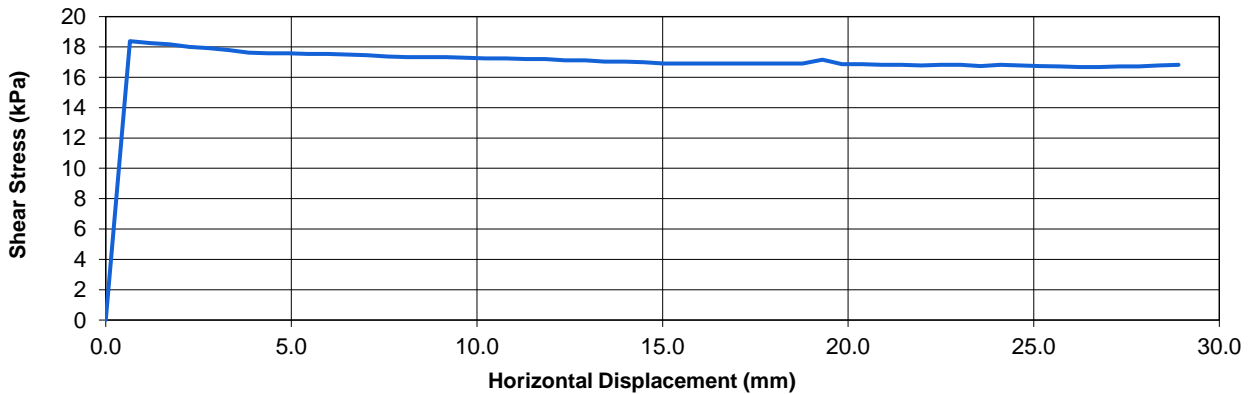
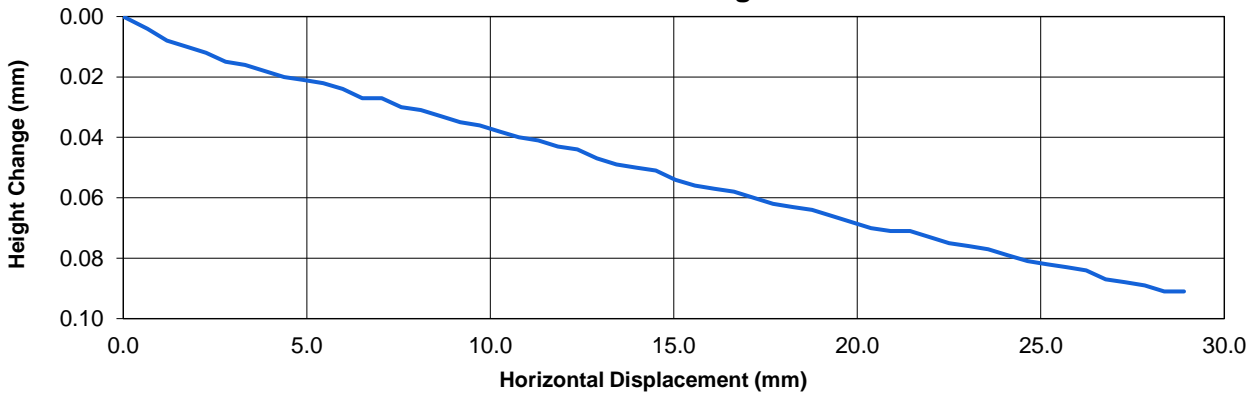
Description:
Brown slightly sandy slightly gravelly CLAY.
Sand is coarse and gravel fine to medium.


Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP10
 Sample No 106
 Depth (m) 2.00
 Sample Type D

Description:

Yellowish brown slightly sandy CLAY.

Specimen Details

Natural water content	%	40.2
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	35.02
Outer Radius	mm	49.99
Initial height	mm	4.89
Initial water content	%	40.2
Initial bulk density	Mg/m ³	1.84
Initial dry density	Mg/m ³	1.31

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.7	9.0	14.5
Final mean linear displacement	mm	19.8	21.7	18.8

Final Conditions

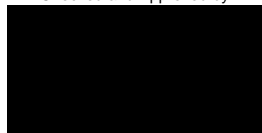
Final water content	%	38.1
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	11
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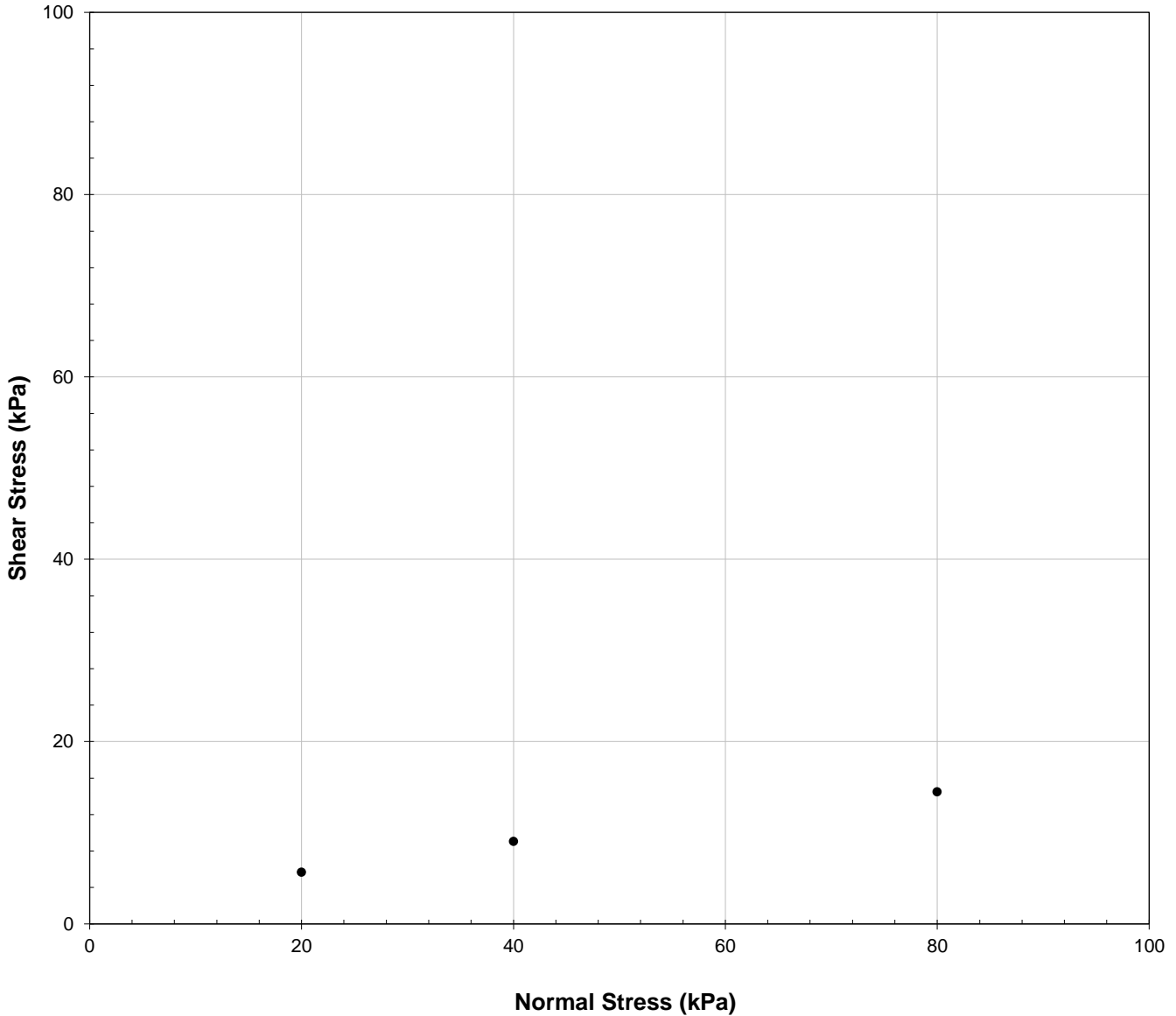
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)


Borehole No	ATK_TP10
Sample No	106
Depth (m)	2.00
Sample Type	D

Description:
Yellowish brown slightly sandy CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 11.0$

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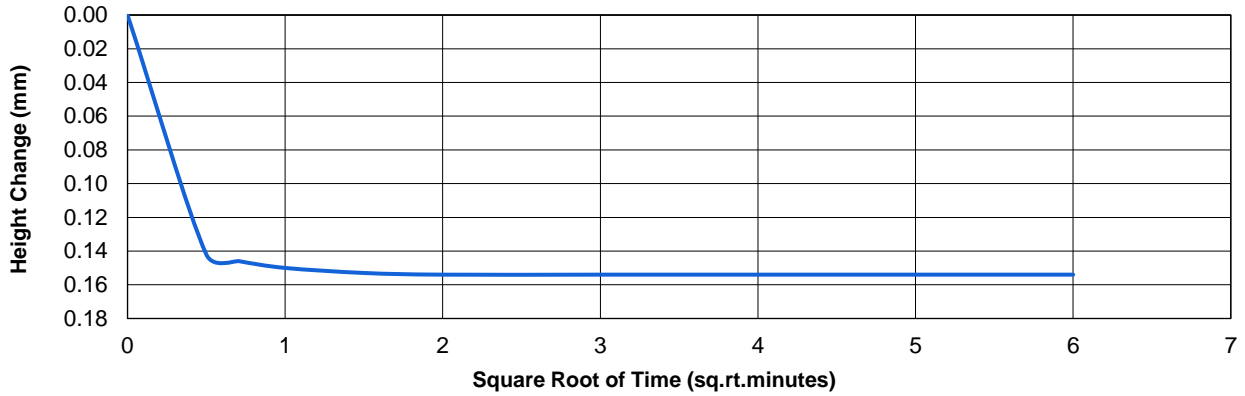
(ring shear apparatus)

Borehole No	ATK_TP10
Sample No	106
Depth (m)	2.00
Sample Type	D

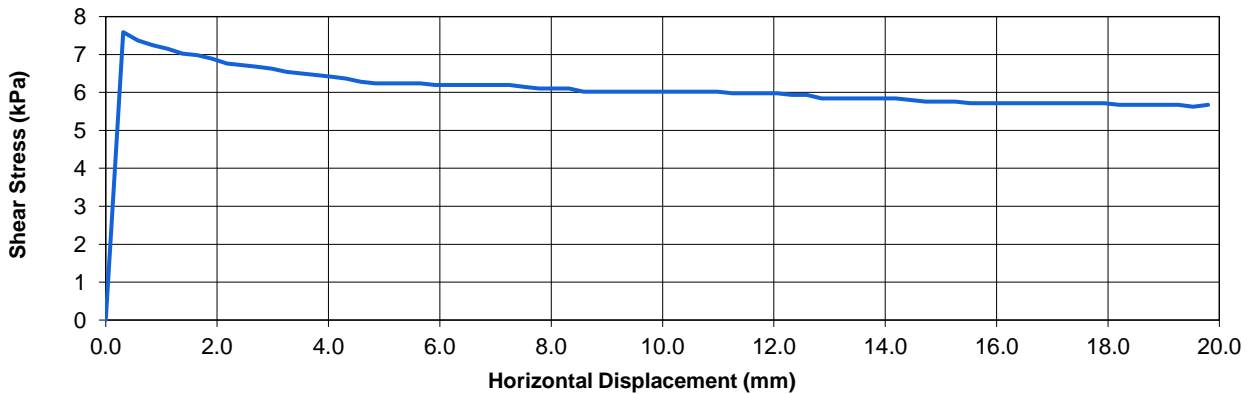
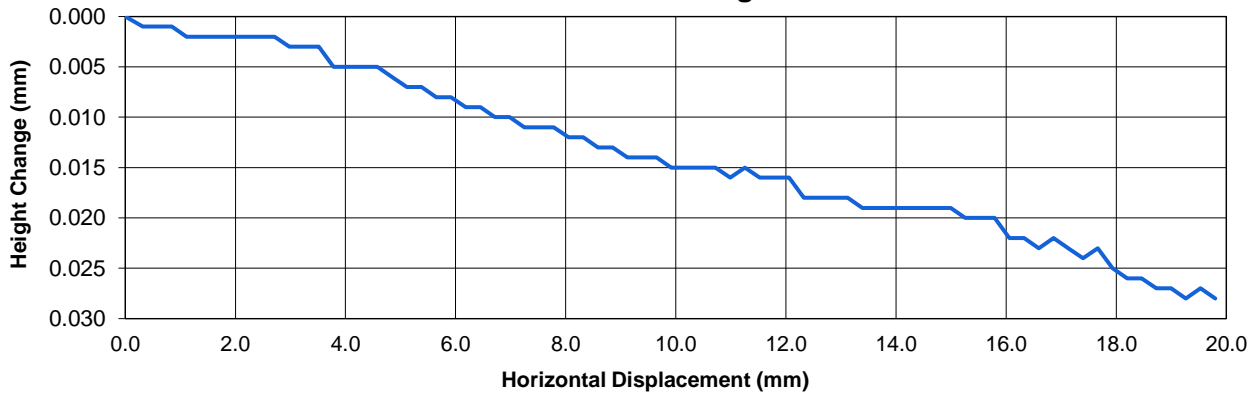
Description:
Yellowish brown slightly sandy CLAY.


Specimen: 1

Consolidation Stage



Shear Stage



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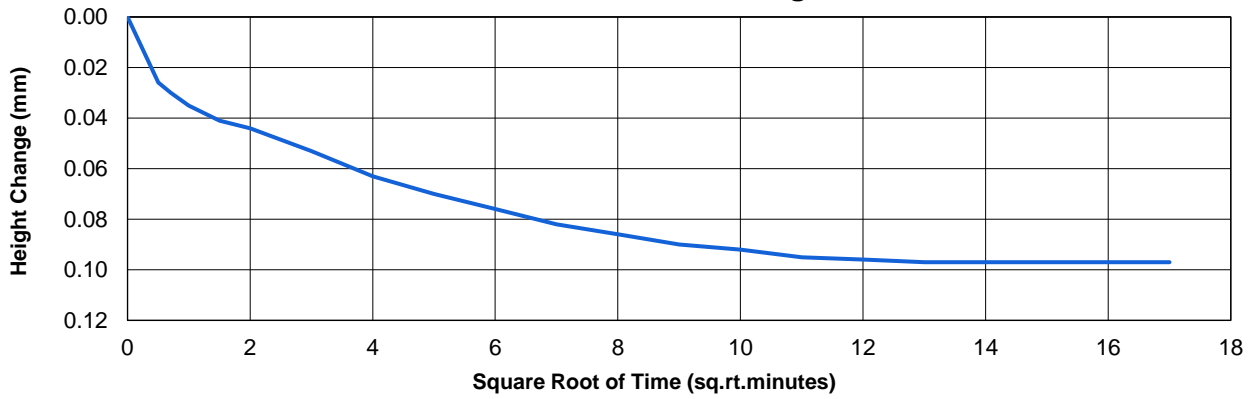
(ring shear apparatus)

Borehole No	ATK_TP10
Sample No	106
Depth (m)	2.00
Sample Type	D

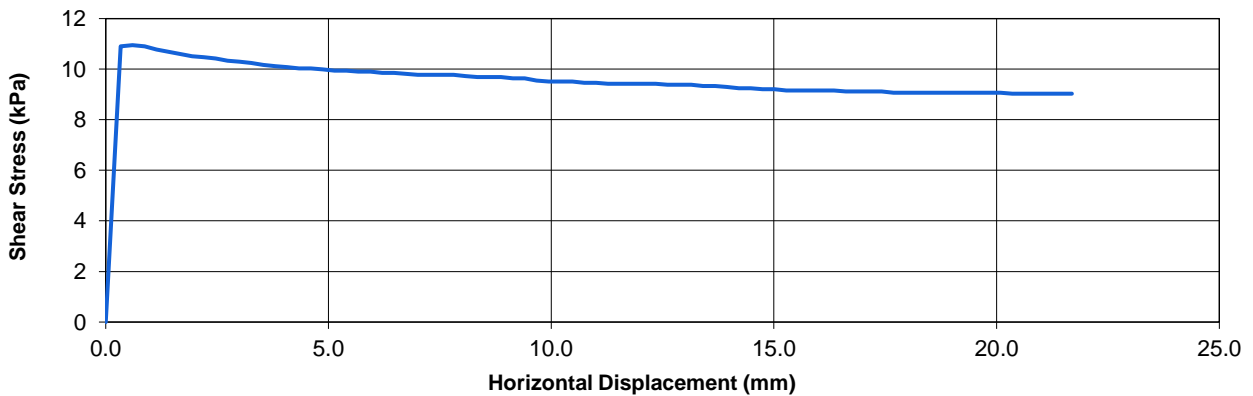
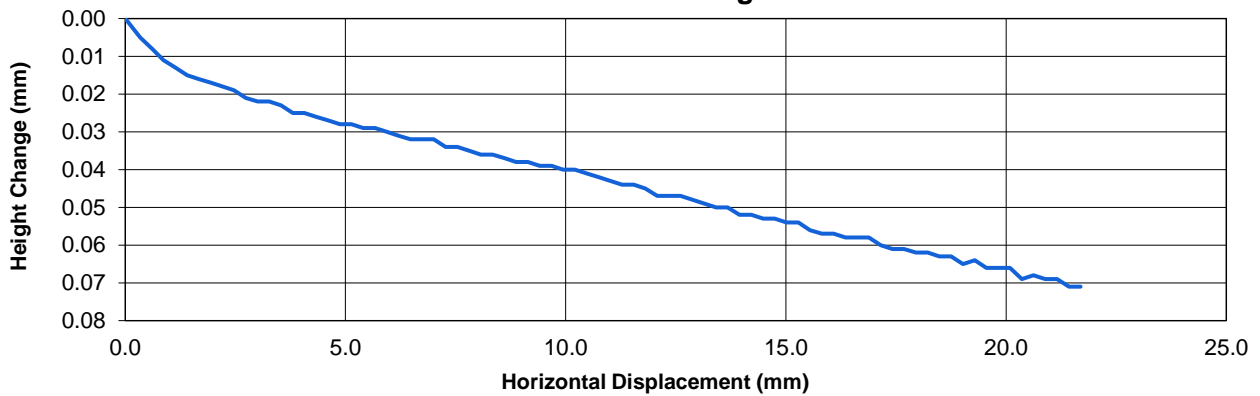
Description:
Yellowish brown slightly sandy CLAY.


Specimen: 2

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

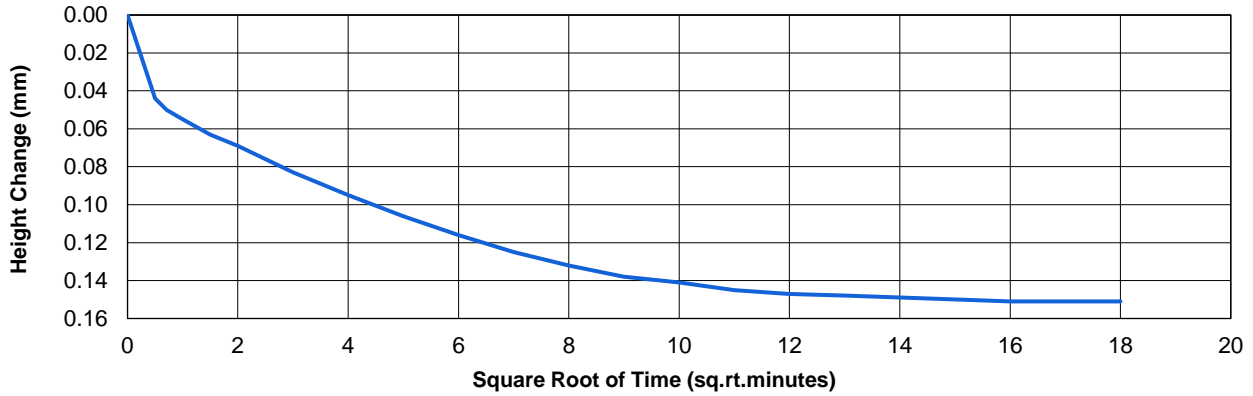
(ring shear apparatus)

Borehole No	ATK_TP10
Sample No	106
Depth (m)	2.00
Sample Type	D

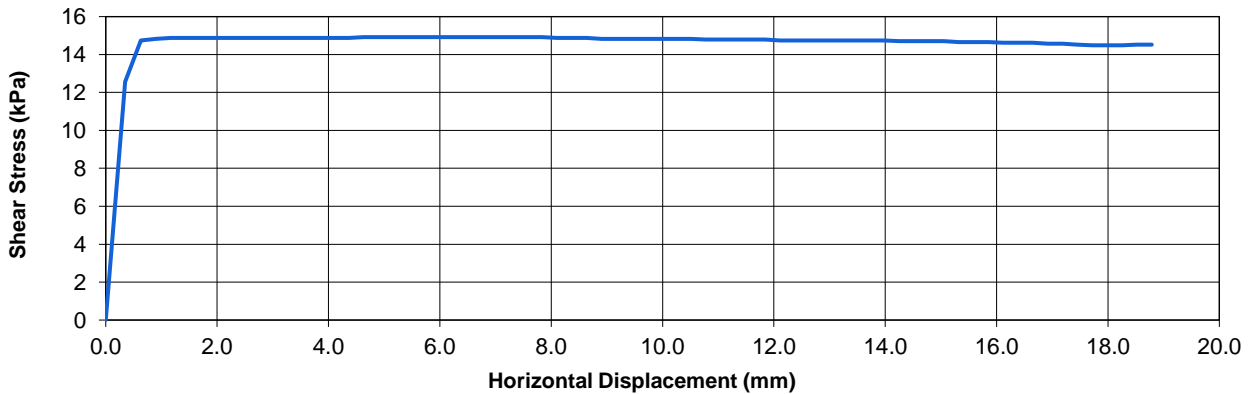
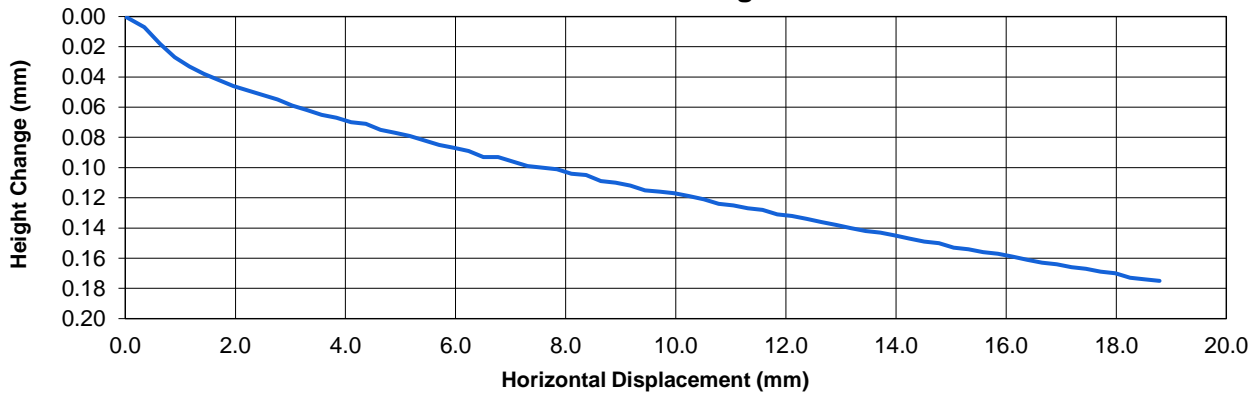
Description:
Yellowish brown slightly sandy CLAY.


Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP11
 Sample No 104
 Depth (m) 1.50
 Sample Type D

Description:

Brown CLAY.

Specimen Details

Natural water content	%	46.9
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.85
Outer Radius	mm	49.99
Initial height	mm	5.18
Initial water content	%	46.9
Initial bulk density	Mg/m ³	1.69
Initial dry density	Mg/m ³	1.15

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	15	30	60
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	15	30	60
Duration	day(s)	1	1	3

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	3.9	6.5	11.3
Final mean linear displacement	mm	20.3	19.2	71.5

Final Conditions

Final water content	%	50.8
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	11
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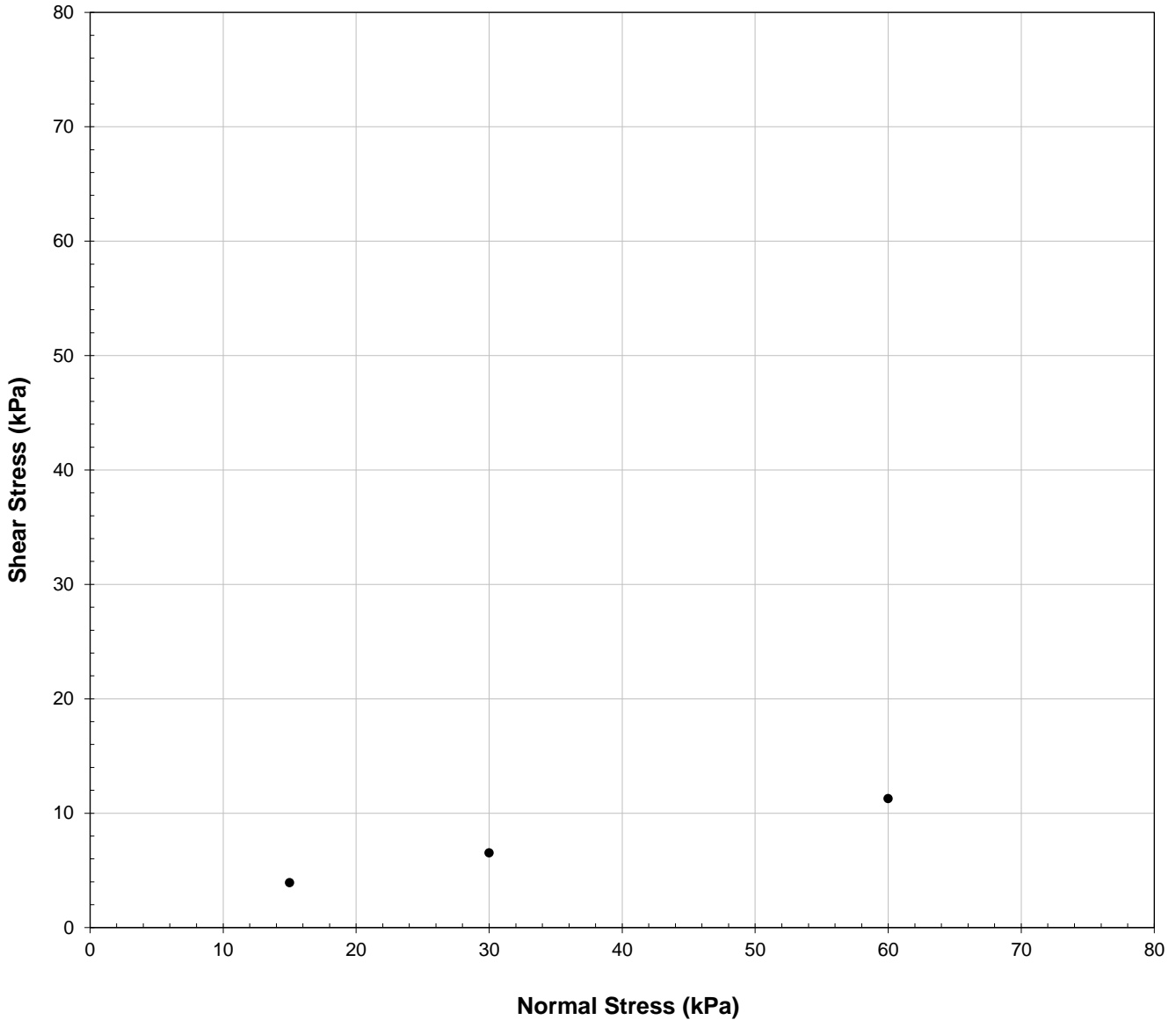
(ring shear apparatus)

Borehole No ATK_TP11
Sample No 104
Depth (m) 1.50
Sample Type D


Description:

Brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 11.0$

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21/02/2023

Project Number:
GEO / 37073
Project Name:
**LYNEHAM BANKS
H2060-22**



DIRECT SHEAR TEST – RING SHEAR

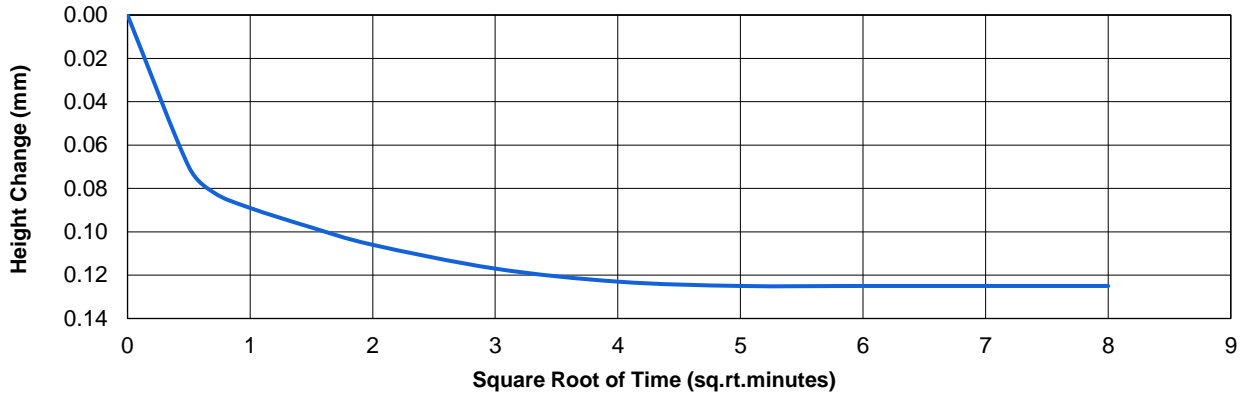
(ring shear apparatus)

Borehole No	ATK_TP11
Sample No	104
Depth (m)	1.50
Sample Type	D

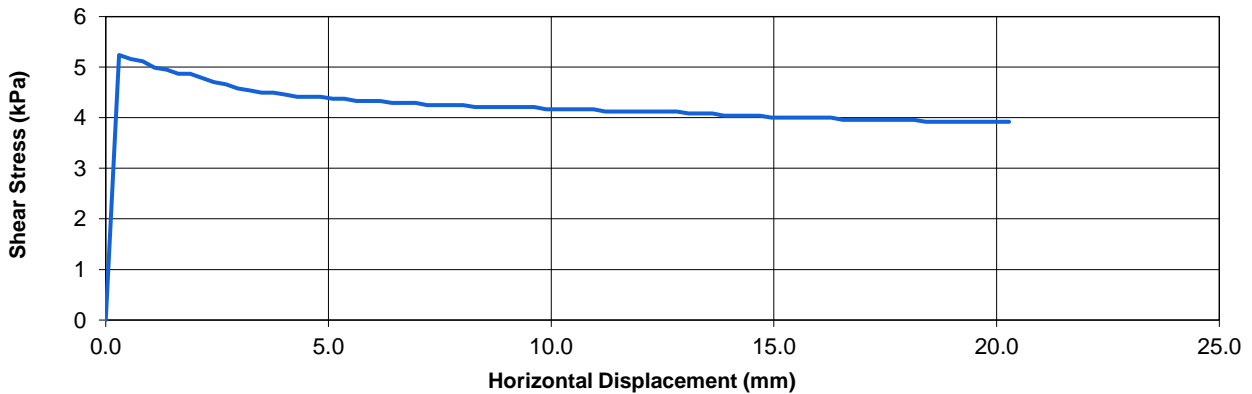
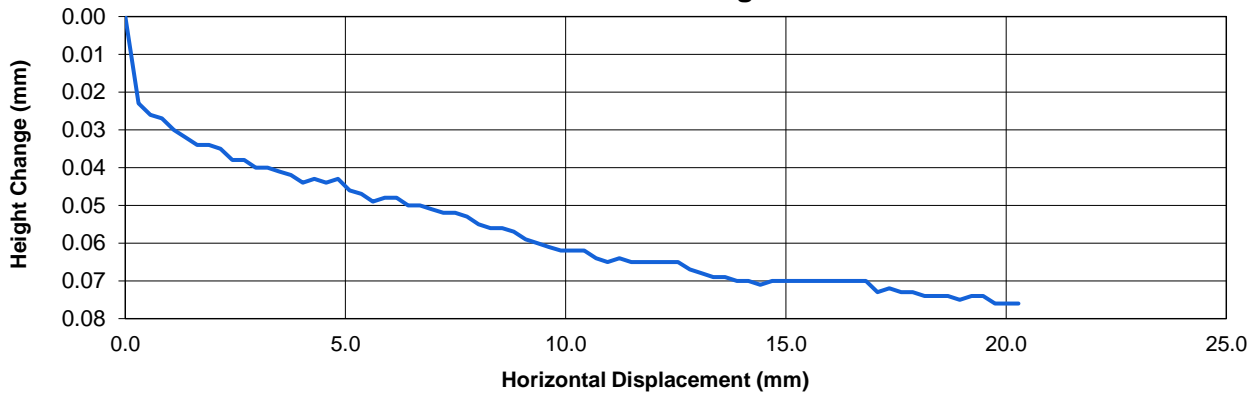
Description:
Brown CLAY.

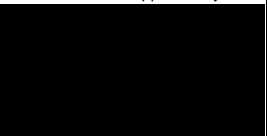
Specimen: 1

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

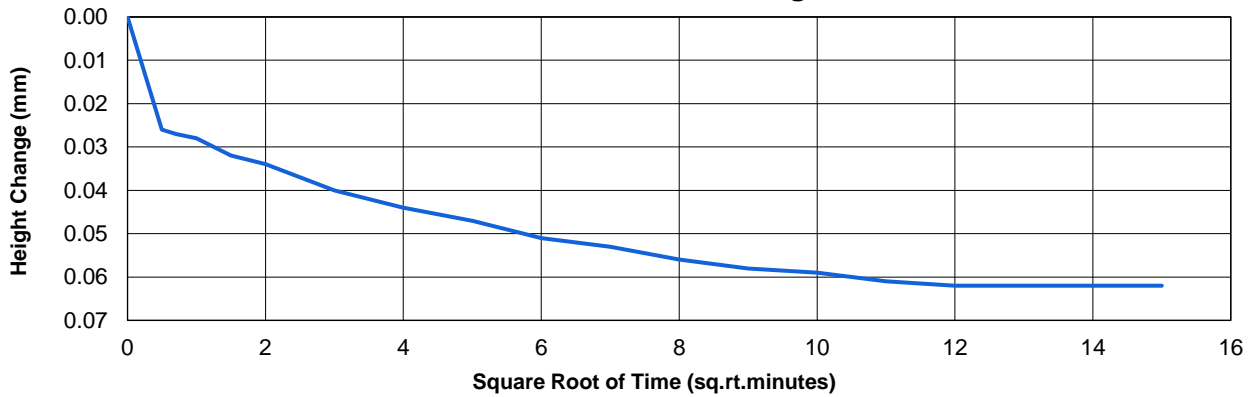
(ring shear apparatus)

Borehole No	ATK_TP11
Sample No	104
Depth (m)	1.50
Sample Type	D

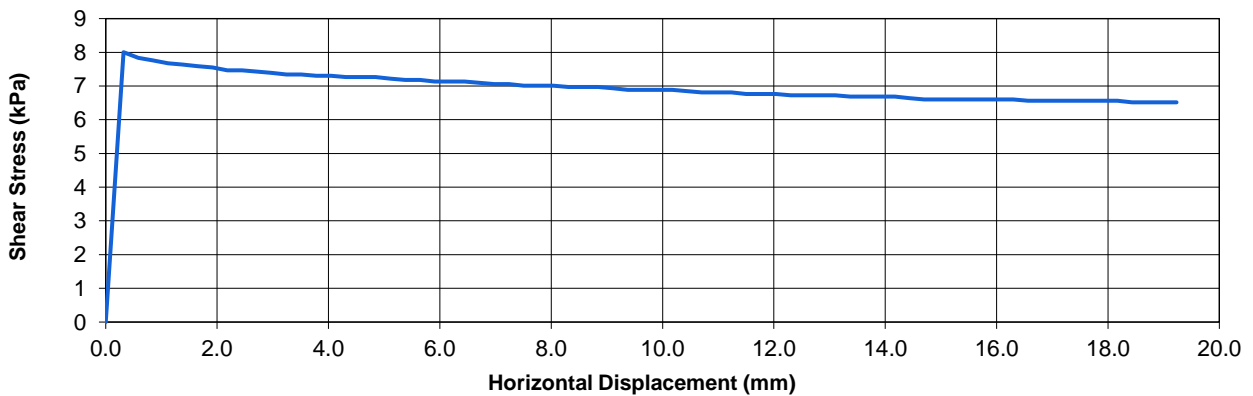
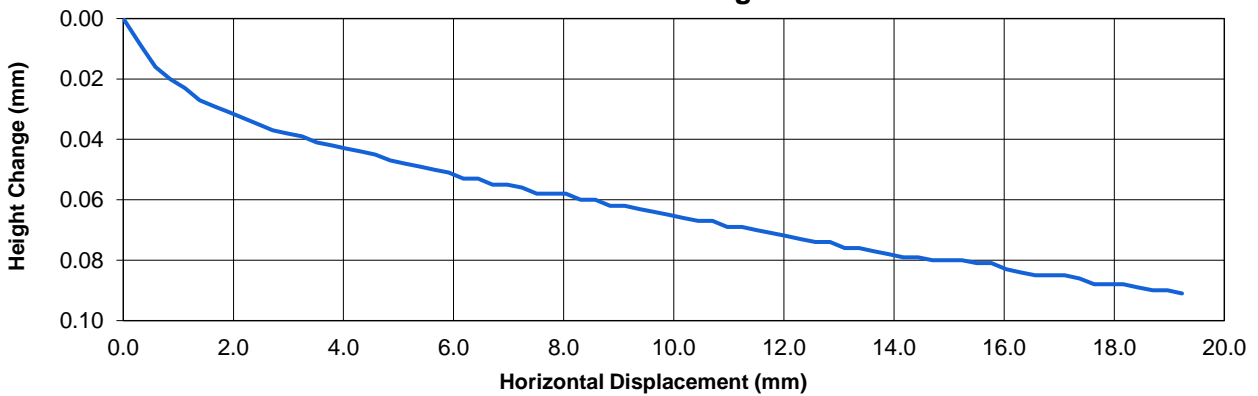
Description:
Brown CLAY.

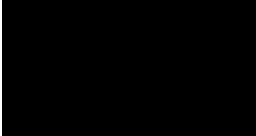
Specimen: 2

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

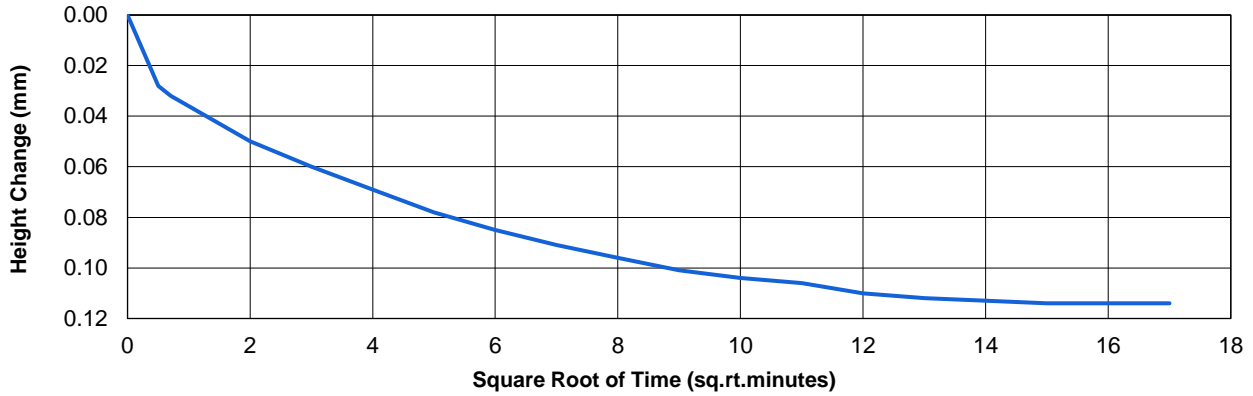
Borehole No	ATK_TP11
Sample No	104
Depth (m)	1.50
Sample Type	D

Description:

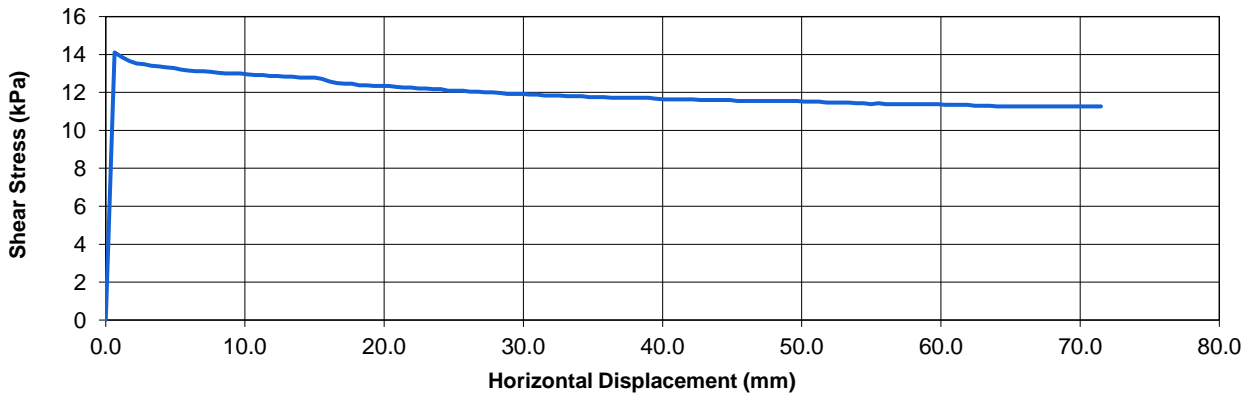
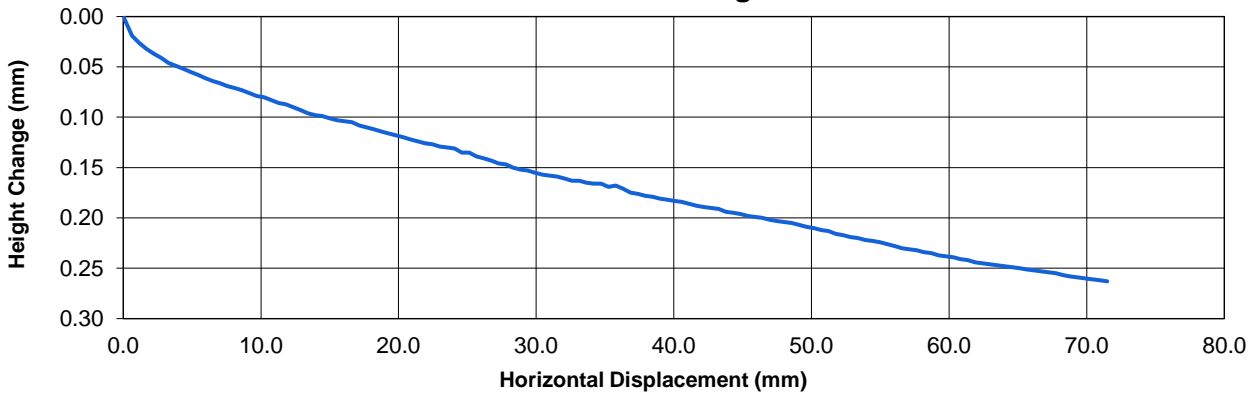
Brown CLAY.

Specimen: 3

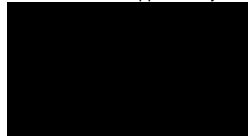
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP13
 Sample No 11
 Depth (m) 2.50
 Sample Type D

Description:

Grey mottled brown CLAY.

Specimen Details

Natural water content	%	30.9
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	35.02
Outer Radius	mm	49.99
Initial height	mm	4.89
Initial water content	%	30.9
Initial bulk density	Mg/m ³	1.92
Initial dry density	Mg/m ³	1.47

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.0	8.3	17.1
Final mean linear displacement	mm	20.1	19.3	25.7

Final Conditions

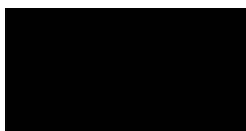
Final water content	%	33.4
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	9.5
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Notes

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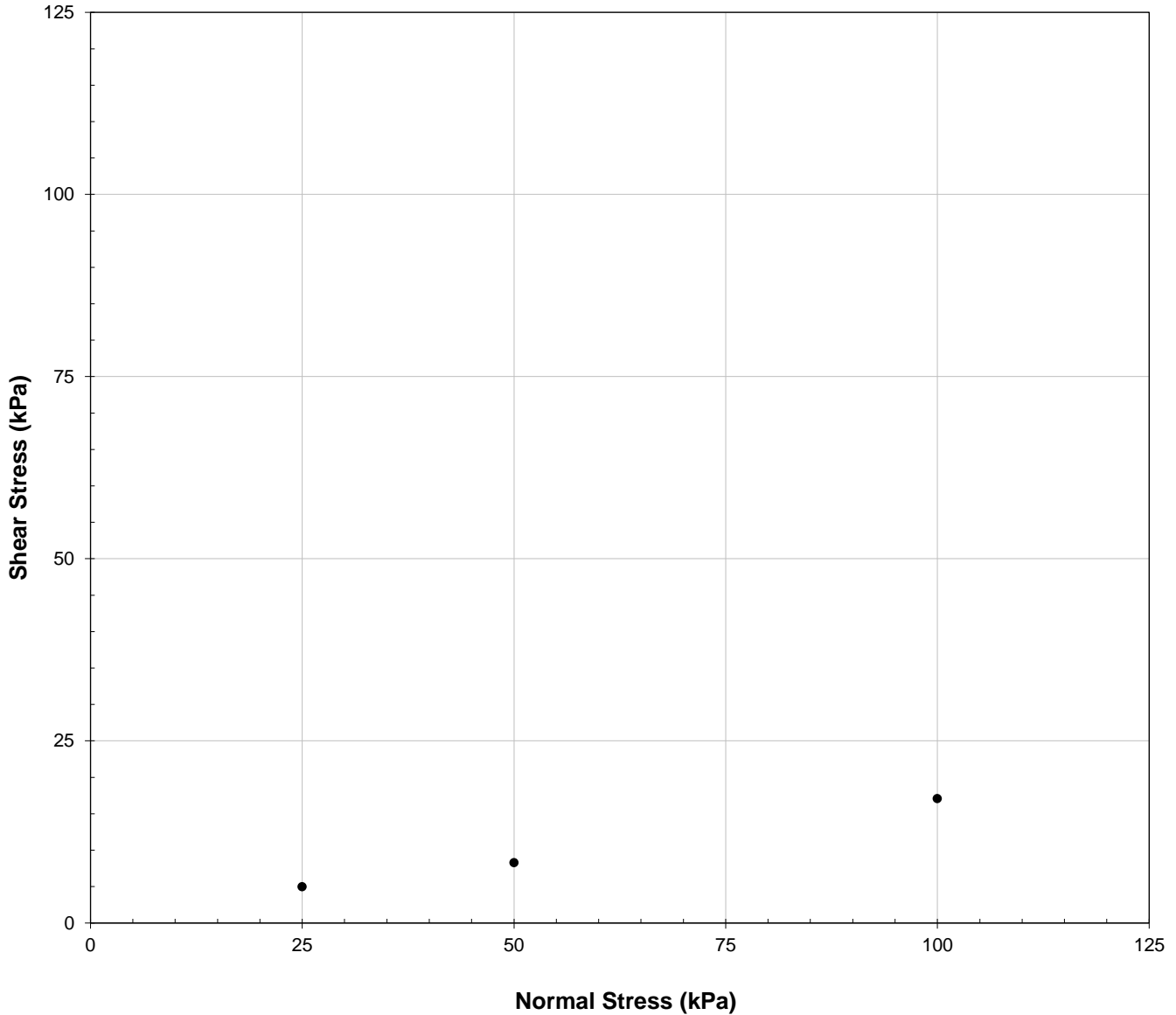
(ring shear apparatus)

Borehole No	ATK_TP13
Sample No	11
Depth (m)	2.50
Sample Type	D

Description:


Grey mottled brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 9.5$

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DIRECT SHEAR TEST – RING SHEAR

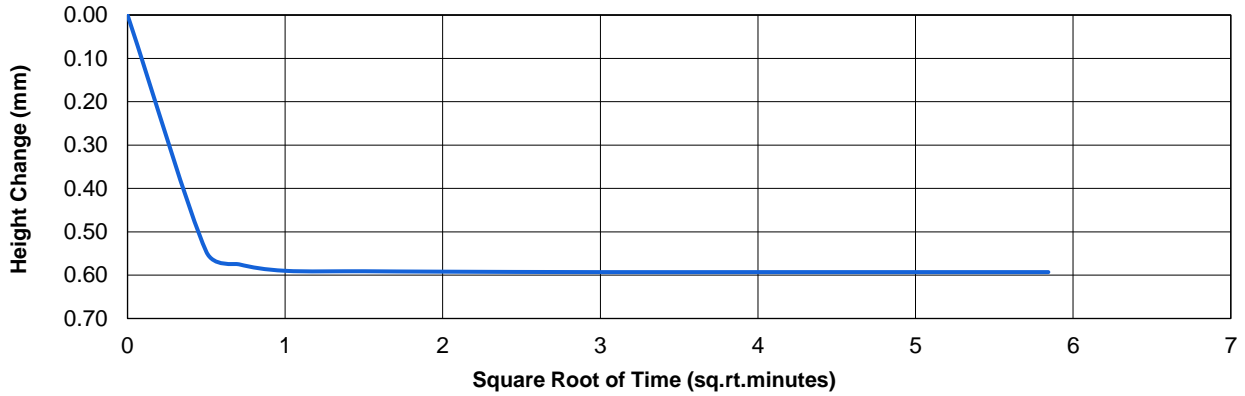
(ring shear apparatus)

Borehole No ATK_TP13
 Sample No 11
 Depth (m) 2.50
 Sample Type D

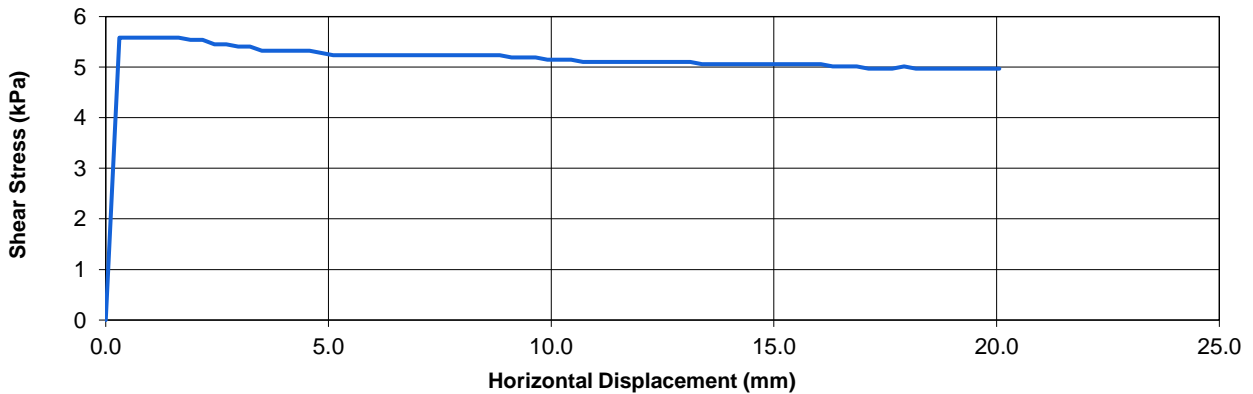
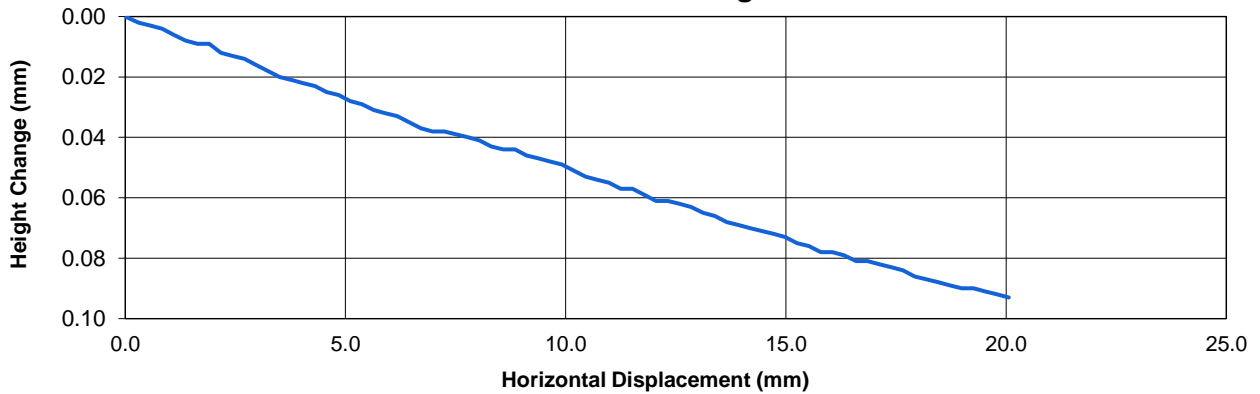
Description:
 Grey mottled brown CLAY.

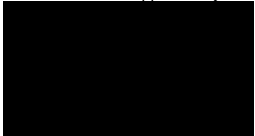
Specimen: 1

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

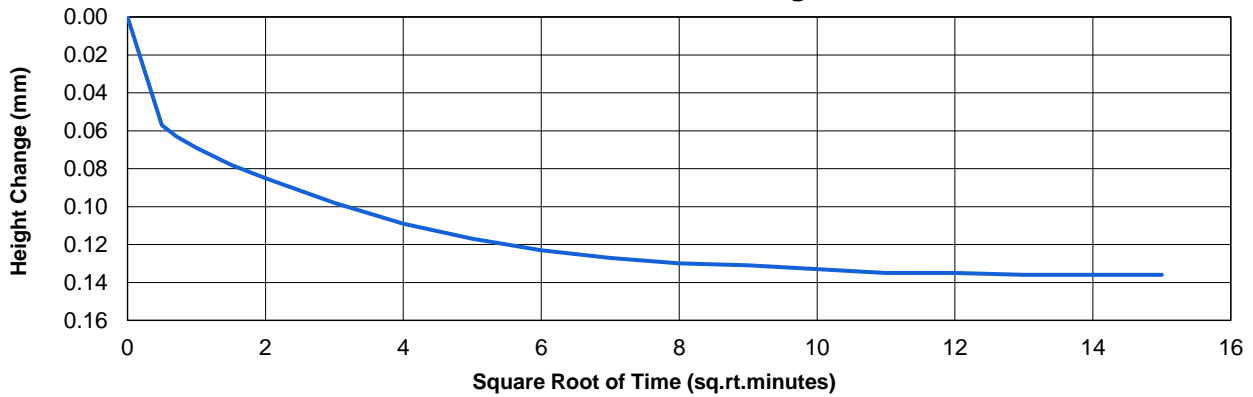
(ring shear apparatus)

Borehole No	ATK_TP13
Sample No	11
Depth (m)	2.50
Sample Type	D

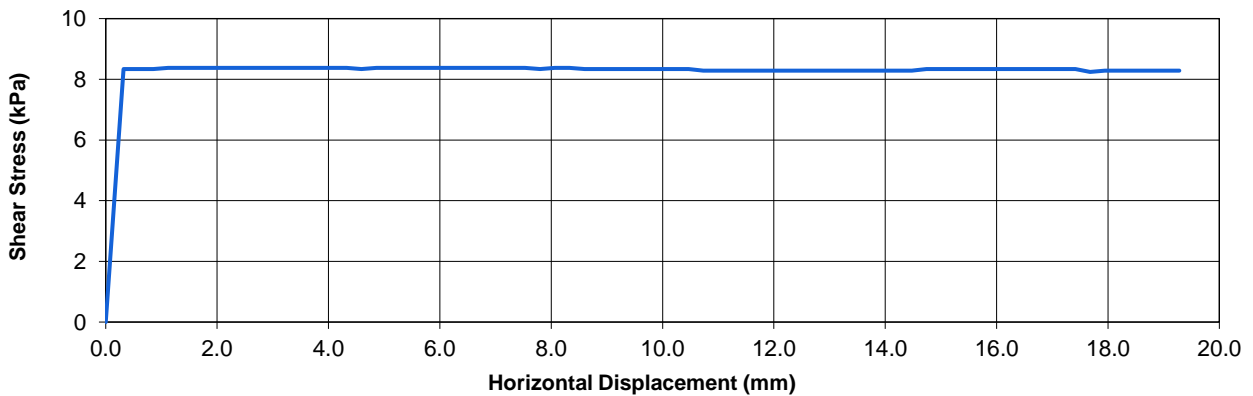
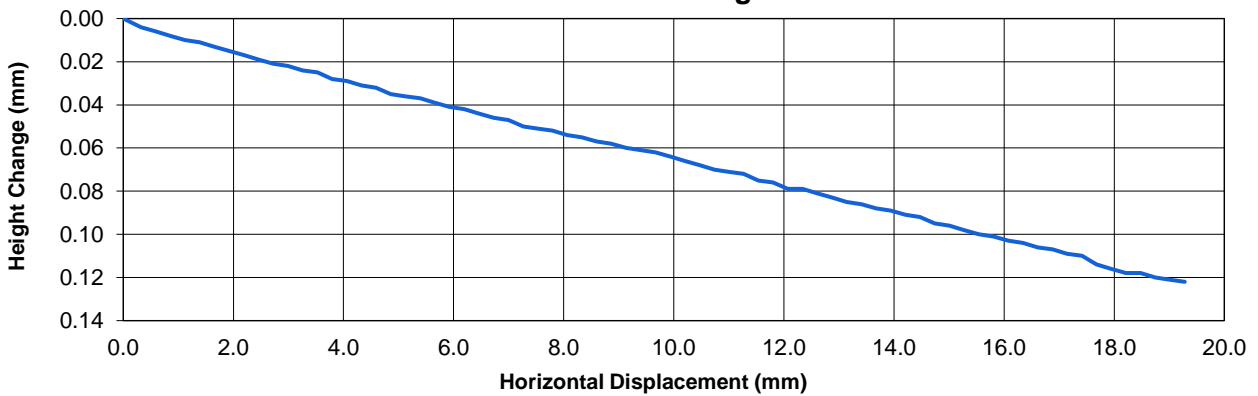
Description:
Grey mottled brown CLAY.

Specimen: 2


Consolidation Stage



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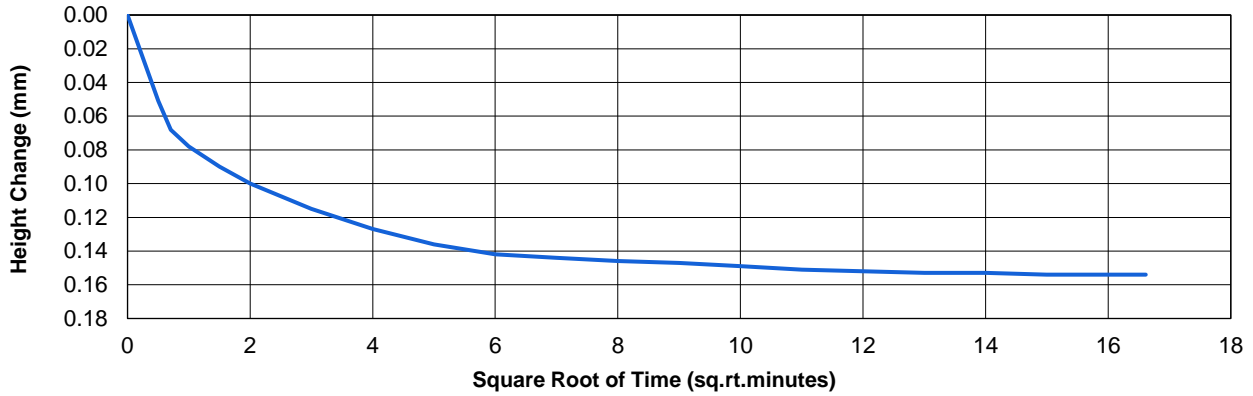
(ring shear apparatus)

Borehole No	ATK_TP13
Sample No	11
Depth (m)	2.50
Sample Type	D

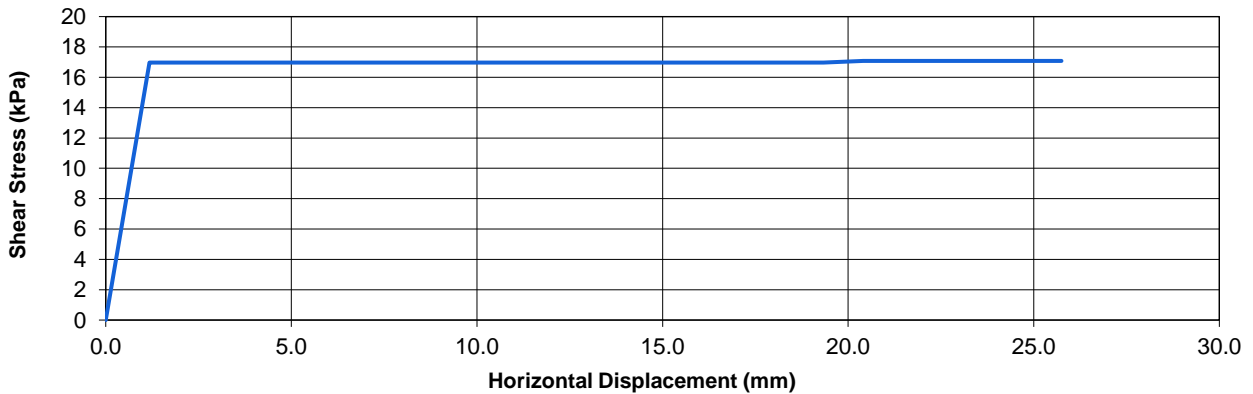
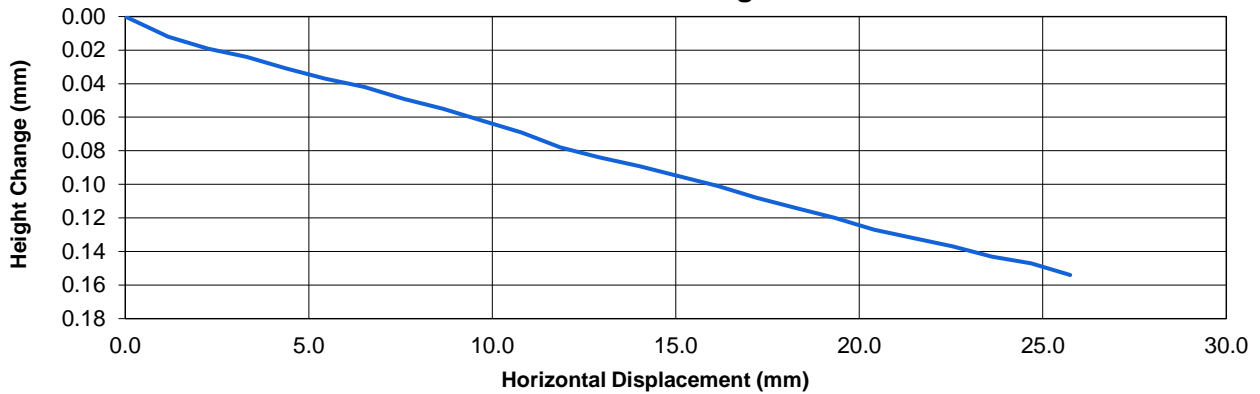
Description:
Grey mottled brown CLAY.

Specimen: 3


Consolidation Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH03
 Sample No 104
 Depth (m) 2.30
 Sample Type D

Description:

Brown slightly gravelly CLAY.

Specimen Details

Natural water content	%	27.0
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.85
Outer Radius	mm	49.99
Initial height	mm	5.18
Initial water content	%	27.0
Initial bulk density	Mg/m ³	1.80
Initial dry density	Mg/m ³	1.42

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	8.2	12.1	21.7
Final mean linear displacement	mm	23.0	24.1	20.9

Final Conditions

Final water content	%	40.2
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	13
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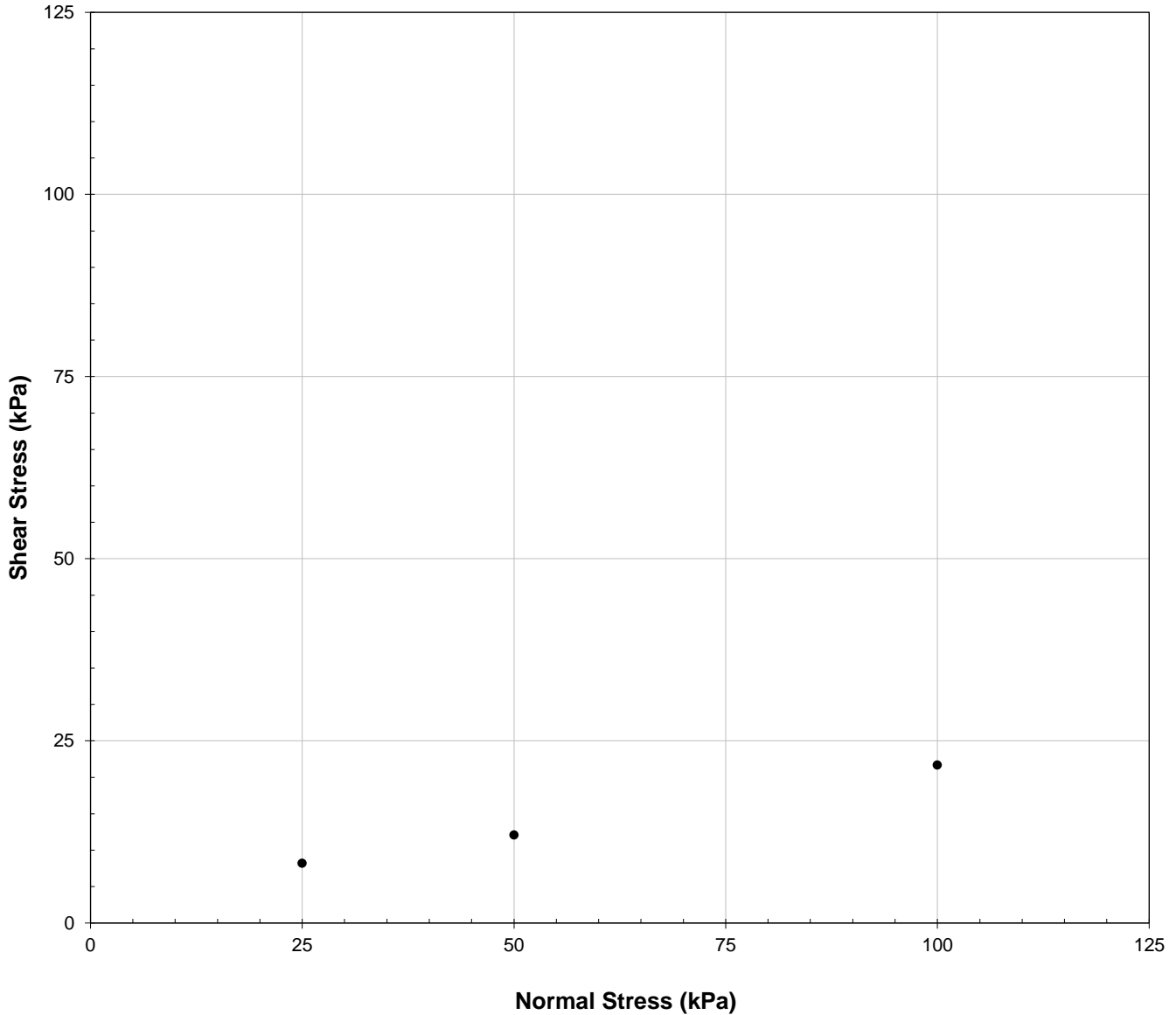
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_BH03
Sample No	104
Depth (m)	2.30
Sample Type	D


Description:
Brown slightly gravelly CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 13.0$

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DIRECT SHEAR TEST – RING SHEAR

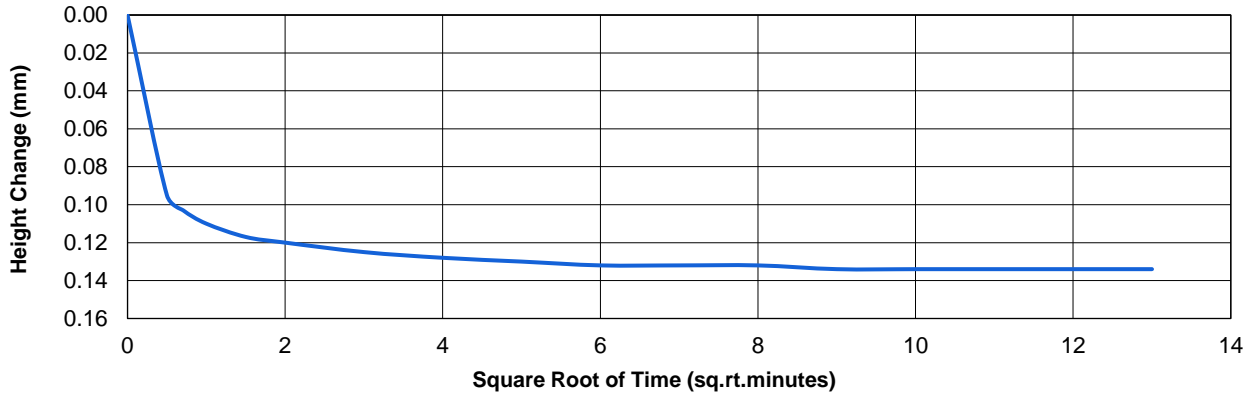
(ring shear apparatus)

Borehole No	ATK_BH03
Sample No	104
Depth (m)	2.30
Sample Type	D

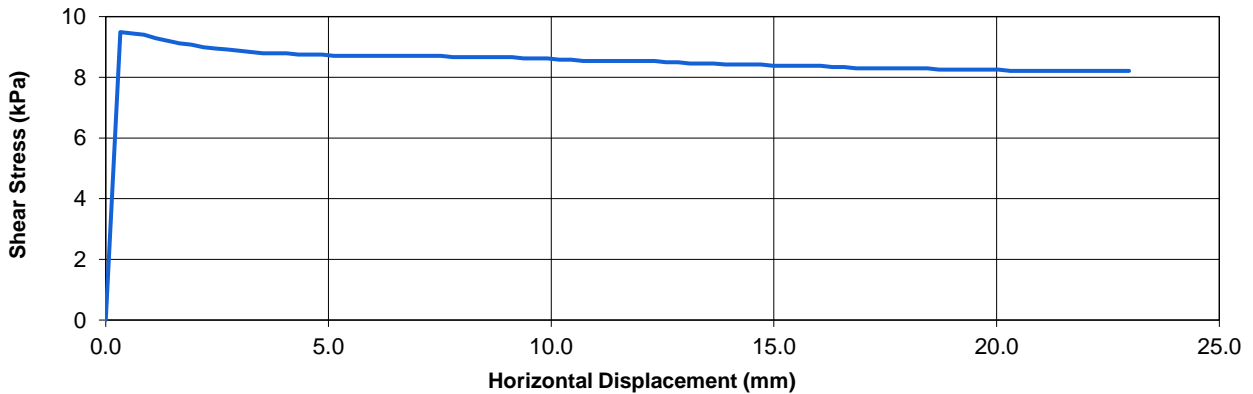
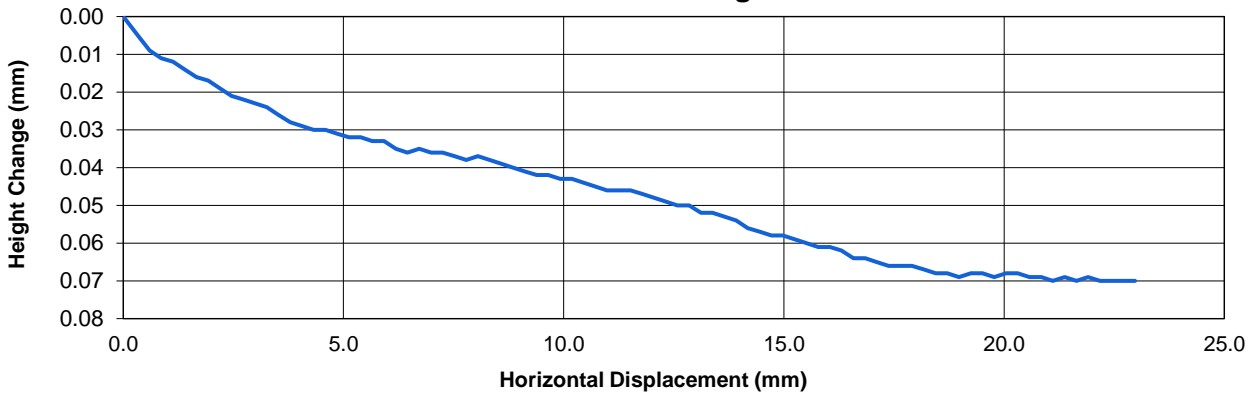
Description:
Brown slightly gravelly CLAY.

Specimen: 1


Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

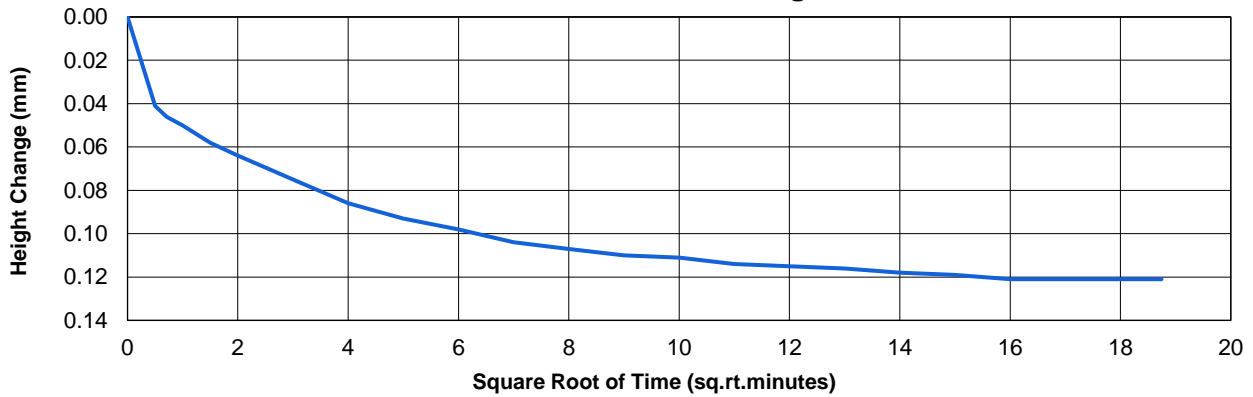
(ring shear apparatus)

Borehole No	ATK_BH03
Sample No	104
Depth (m)	2.30
Sample Type	D

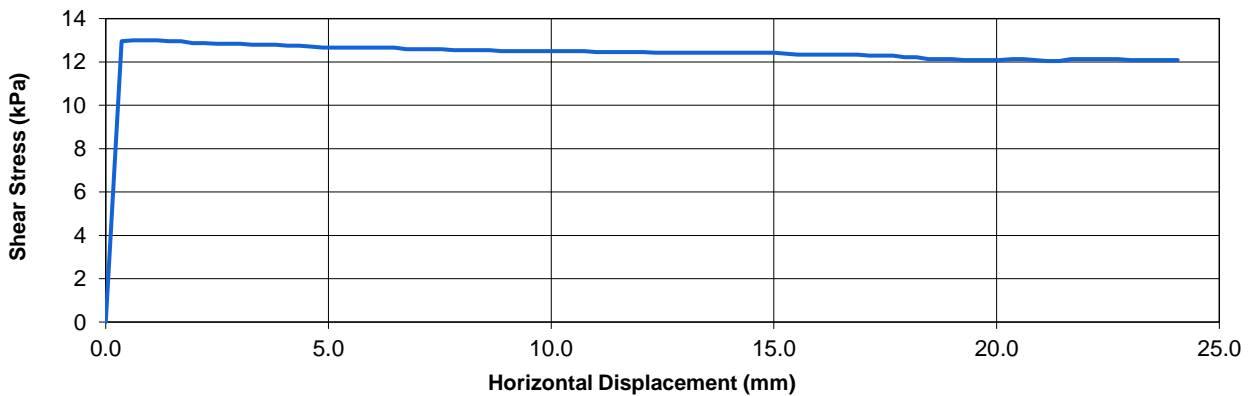
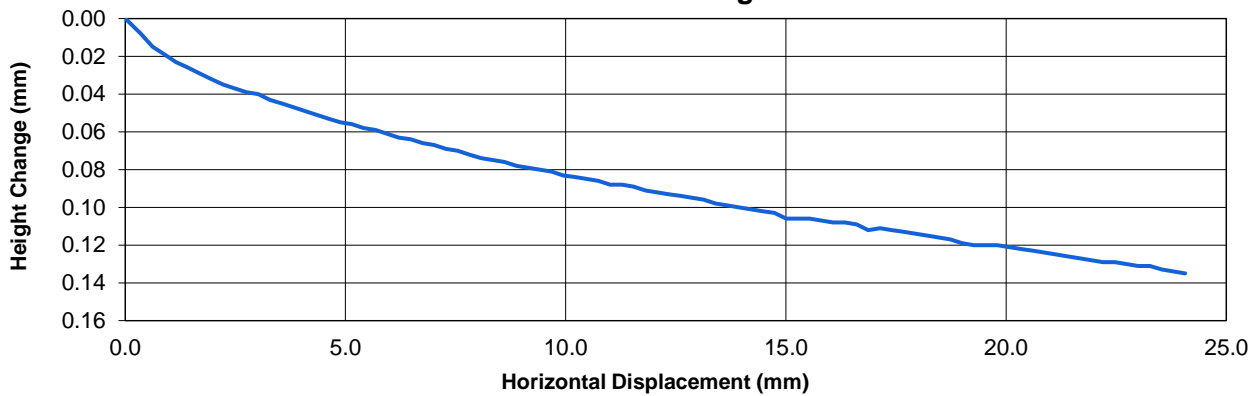
Description:
Brown slightly gravelly CLAY.

Specimen: 2

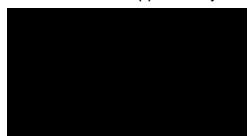
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

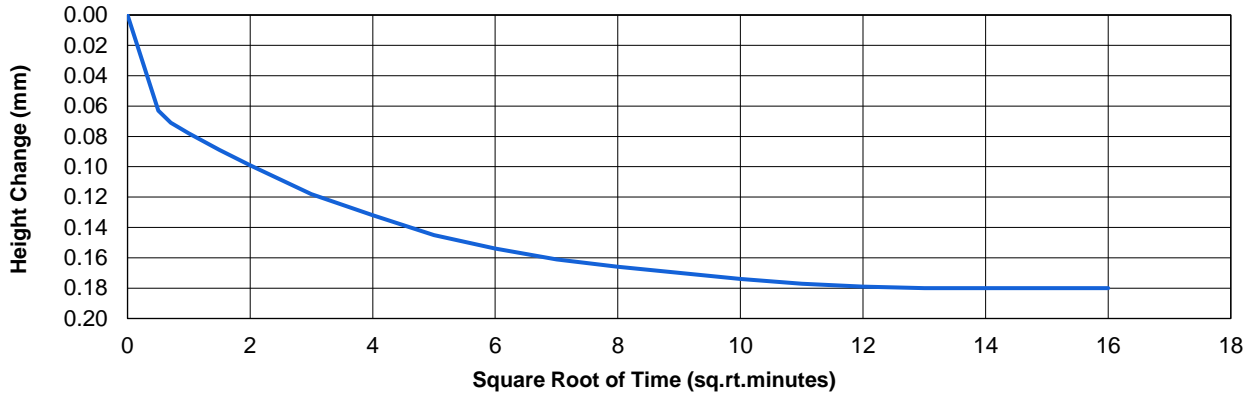
(ring shear apparatus)

Borehole No	ATK_BH03
Sample No	104
Depth (m)	2.30
Sample Type	D

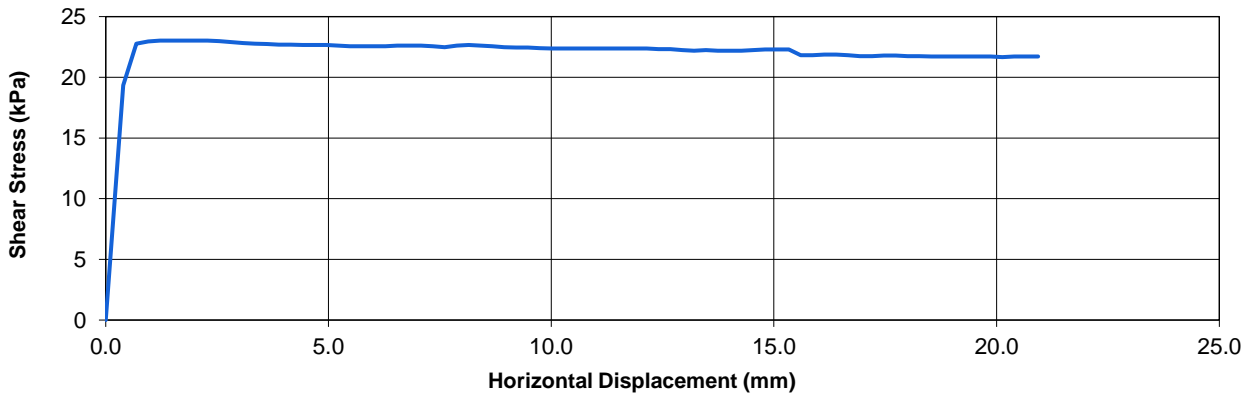
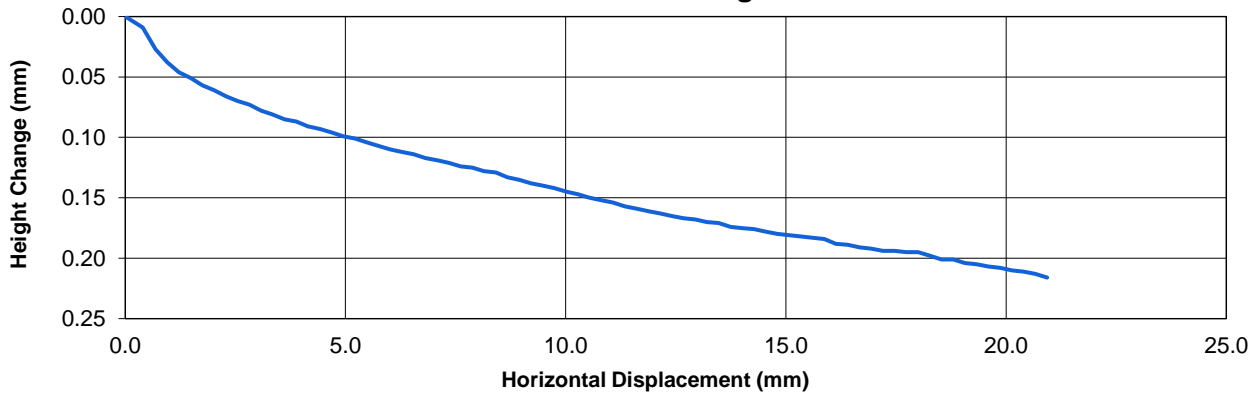
Description:
Brown slightly gravelly CLAY.

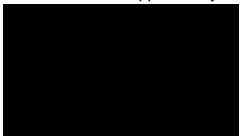
Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH05
 Sample No 1.3
 Depth (m) 1.30
 Sample Type D

Description:

Grey mottled brown slightly gravelly CLAY.

Specimen Details

Natural water content	%	27.7
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.85
Outer Radius	mm	49.99
Initial height	mm	5.18
Initial water content	%	27.7
Initial bulk density	Mg/m ³	1.94
Initial dry density	Mg/m ³	1.52

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	10	20	40
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	10	20	40
Duration	day(s)	3	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	2.7	4.9	8.7
Final mean linear displacement	mm	68.8	20.0	20.7

Final Conditions

Final water content	%	32.2
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	13
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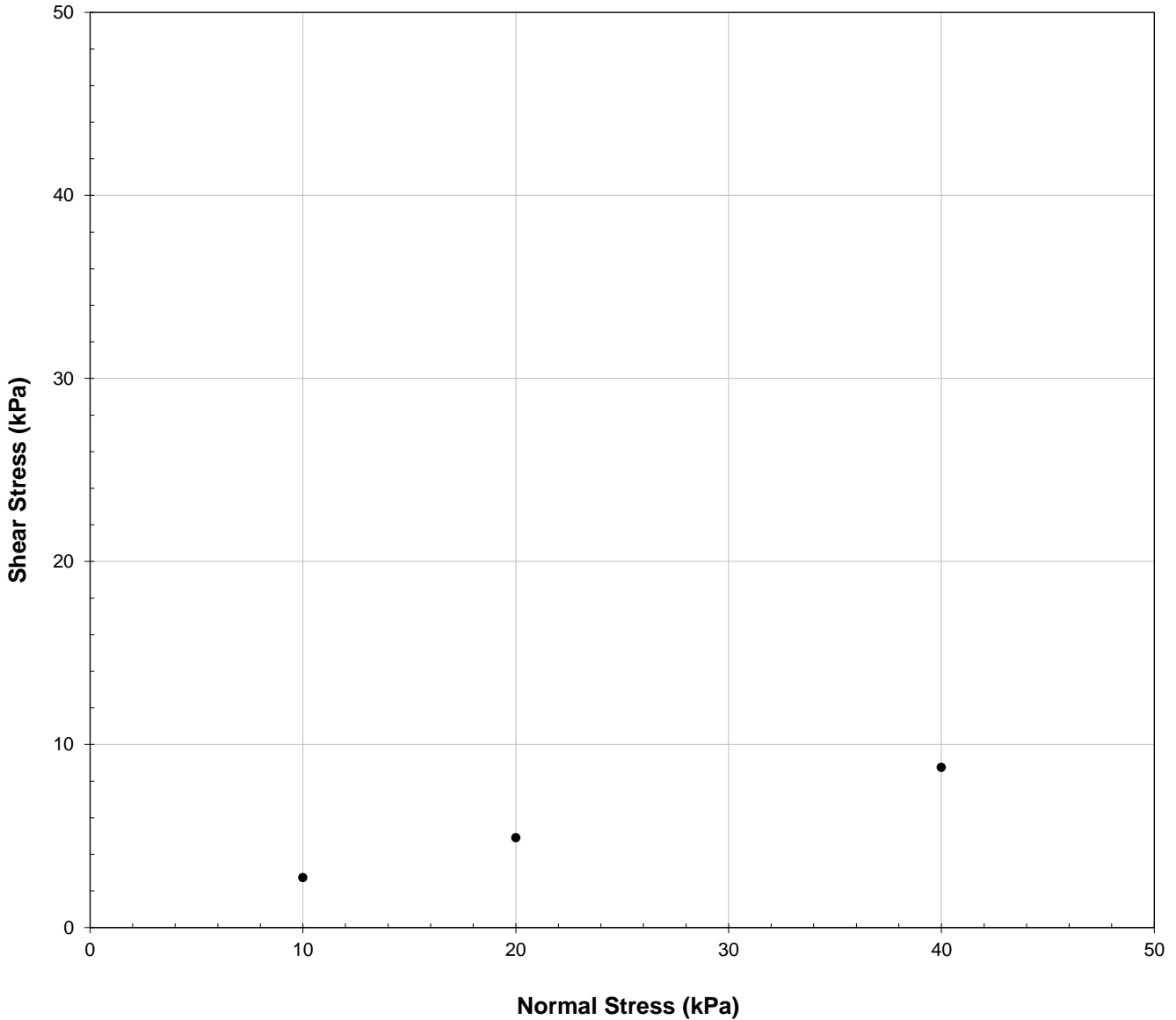
(ring shear apparatus)

Borehole No	ATK_BH05
Sample No	1.3
Depth (m)	1.30
Sample Type	D

Description:

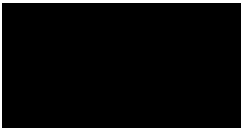
Grey mottled brown slightly gravelly CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 13.0$

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DIRECT SHEAR TEST – RING SHEAR

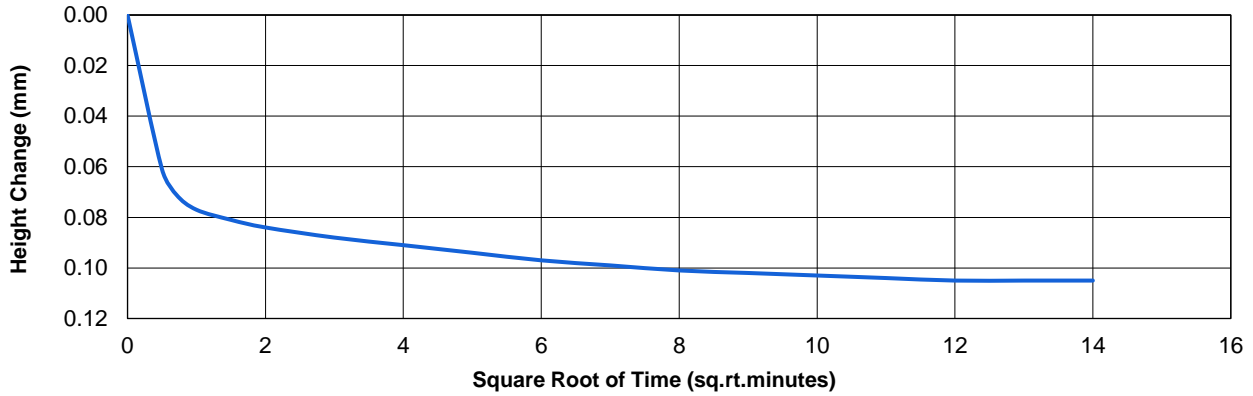
(ring shear apparatus)

Borehole No	ATK_BH05
Sample No	1.3
Depth (m)	1.30
Sample Type	D

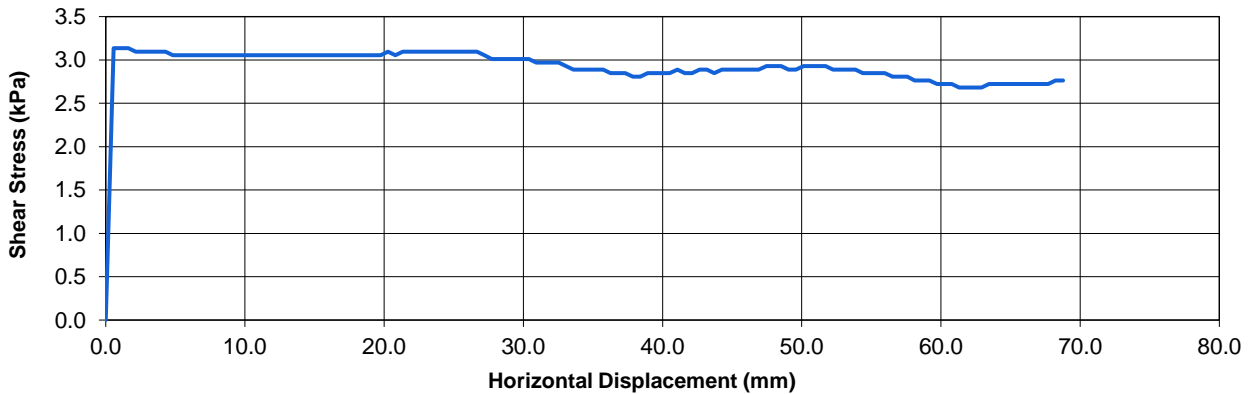
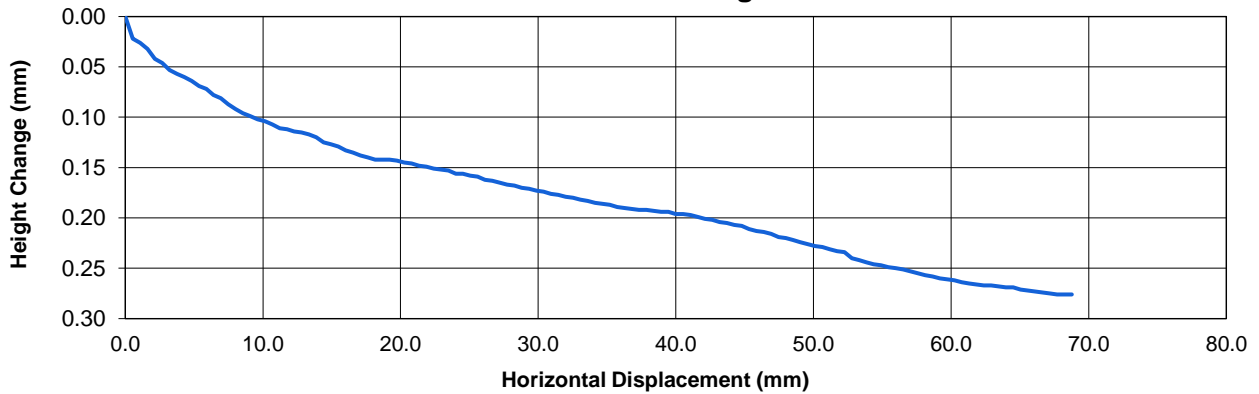
Description:
 Grey mottled brown slightly gravelly CLAY.

Specimen: 1

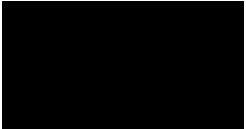
Consolidation Stage



Shear Stage



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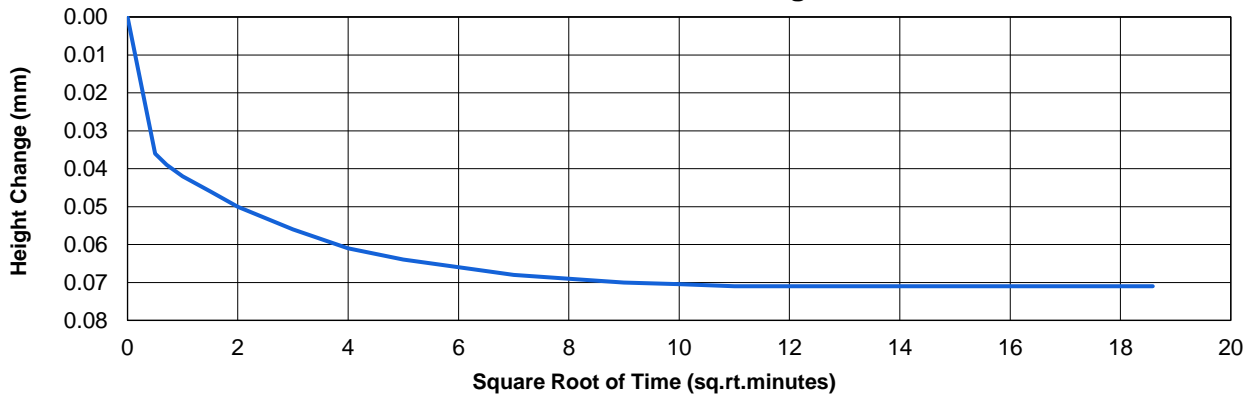
(ring shear apparatus)

Borehole No	ATK_BH05
Sample No	1.3
Depth (m)	1.30
Sample Type	D

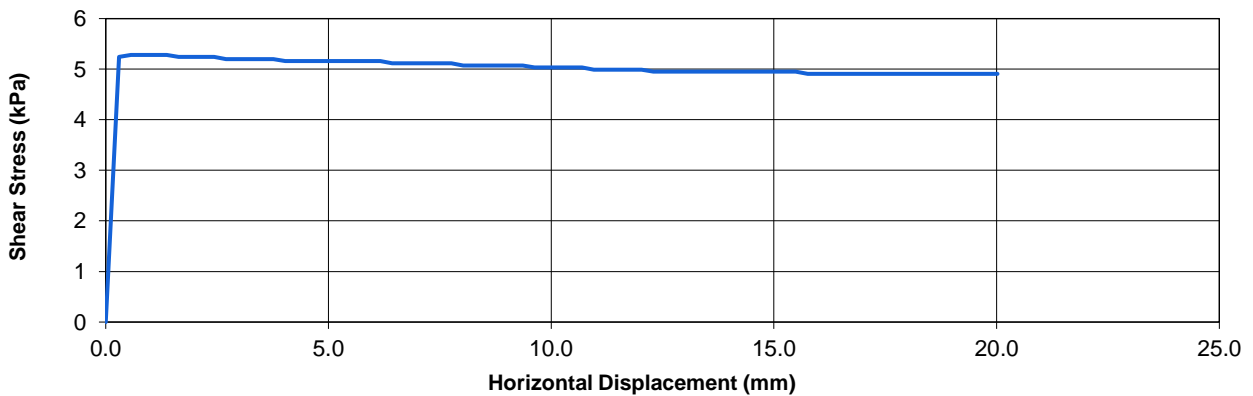
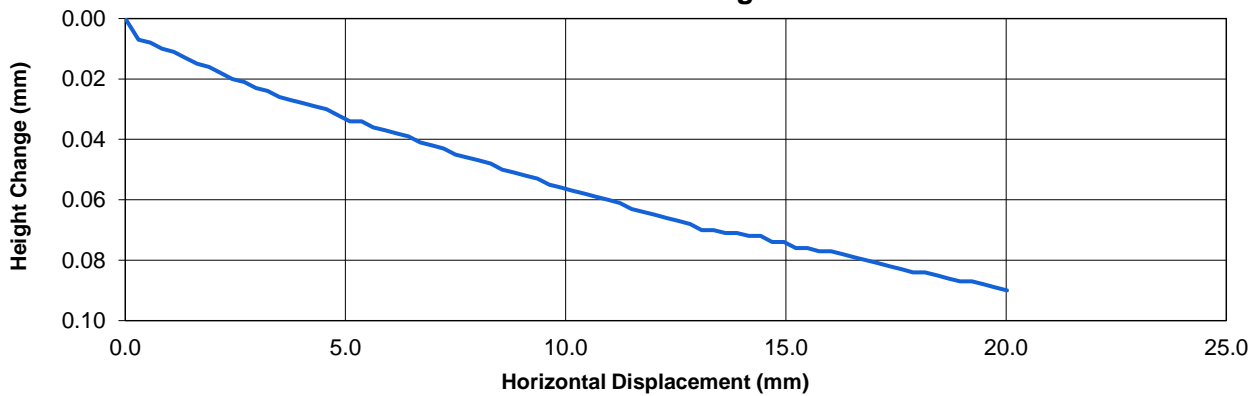
Description:
Grey mottled brown slightly gravelly CLAY.

Specimen: 2


Consolidation Stage



Shear Stage



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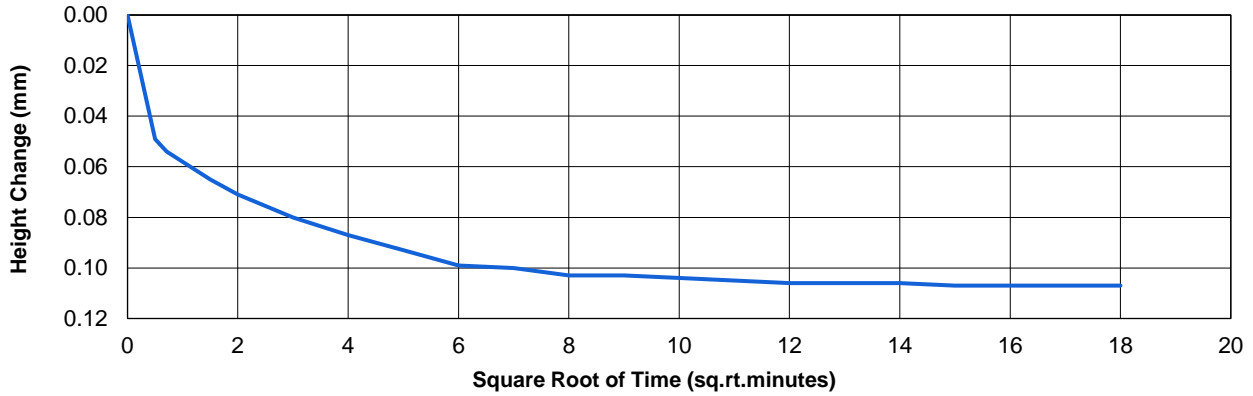
(ring shear apparatus)

Borehole No	ATK_BH05
Sample No	1.3
Depth (m)	1.30
Sample Type	D

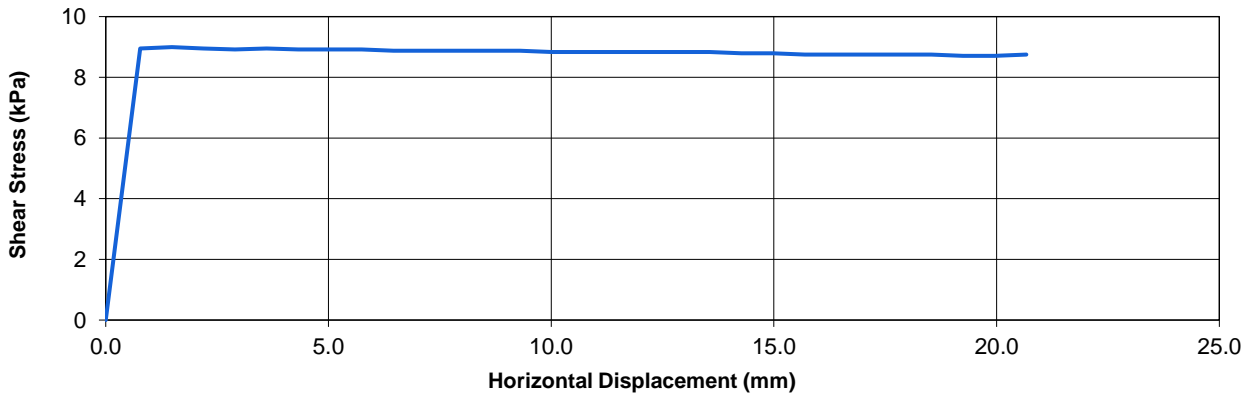
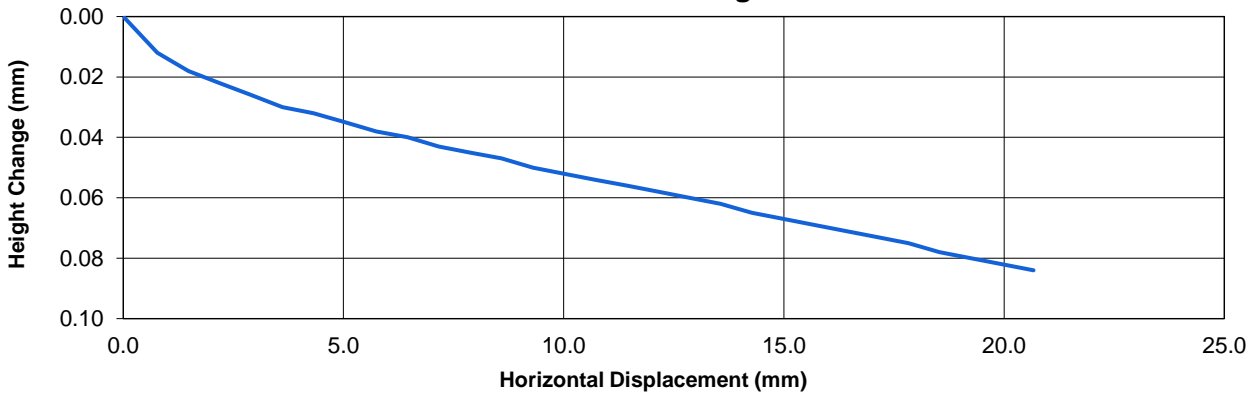
Description:
Grey mottled brown slightly gravelly CLAY.

Specimen: 3


Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH13
 Sample No 2.4
 Depth (m) 2.00
 Sample Type UT

Description:

Grey mottled brown CLAY.

Specimen Details

Natural water content	%	46.8
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.93
Outer Radius	mm	49.94
Initial height	mm	4.88
Initial water content	%	46.8
Initial bulk density	Mg/m ³	1.81
Initial dry density	Mg/m ³	1.23

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	20	40	80
Duration	day(s)	3	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	4.4	7.0	12.2
Final mean linear displacement	mm	68.8	20.0	20.7

Final Conditions

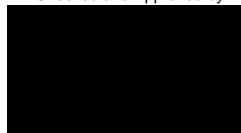
Final water content	%	47.0
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	9
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Notes

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DIRECT SHEAR TEST – RING SHEAR

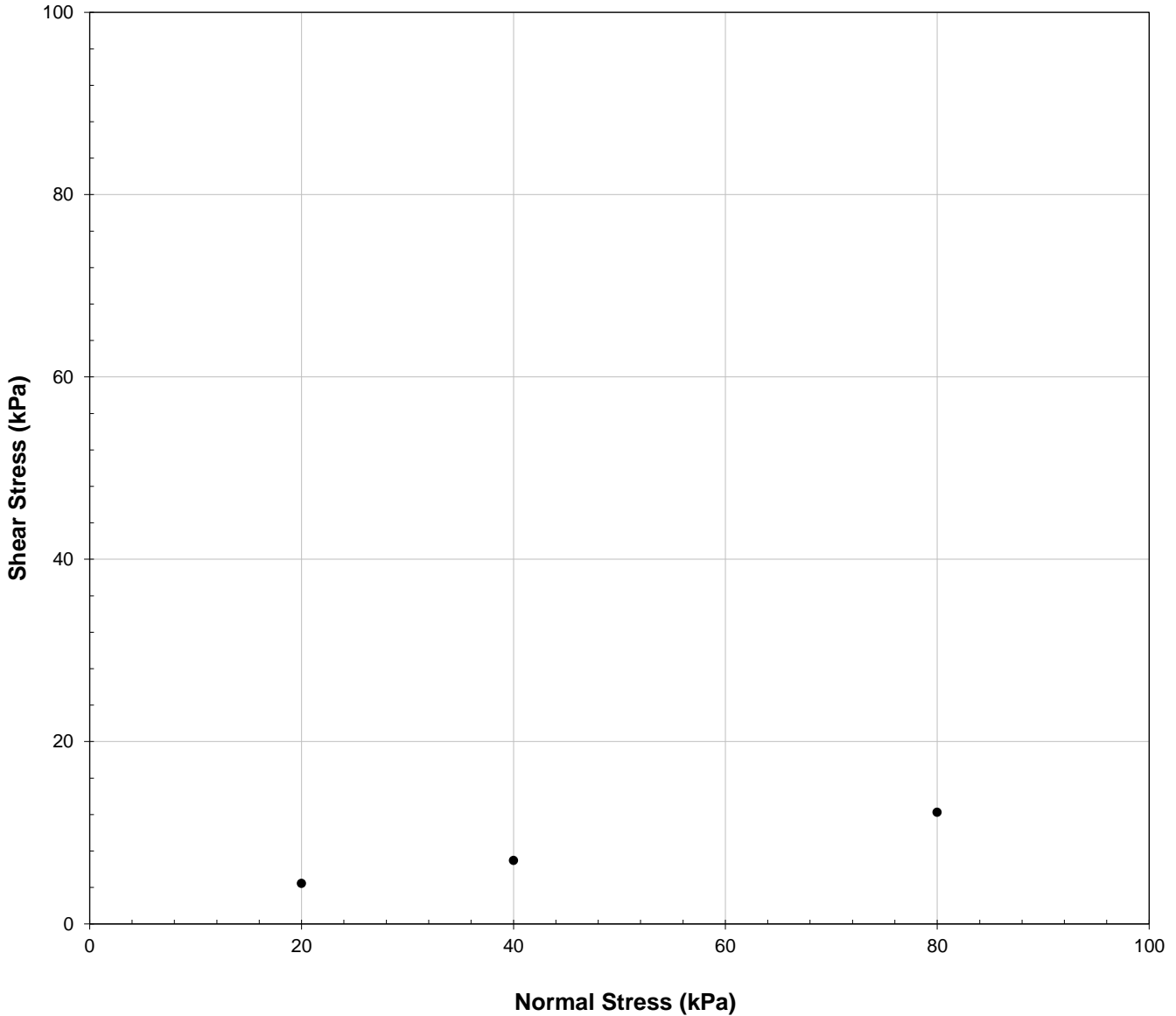
(ring shear apparatus)

Borehole No	ATK_BH13
Sample No	2.4
Depth (m)	2.00
Sample Type	UT

Description:

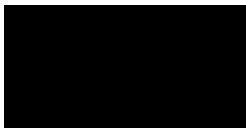
Grey mottled brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 9.0$

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DIRECT SHEAR TEST – RING SHEAR

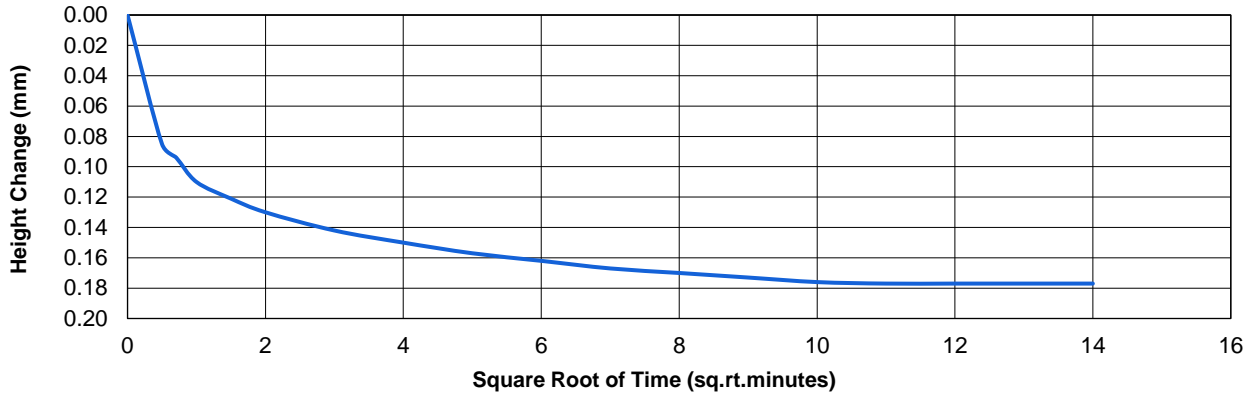
(ring shear apparatus)

Borehole No	ATK_BH13
Sample No	2.4
Depth (m)	2.00
Sample Type	UT

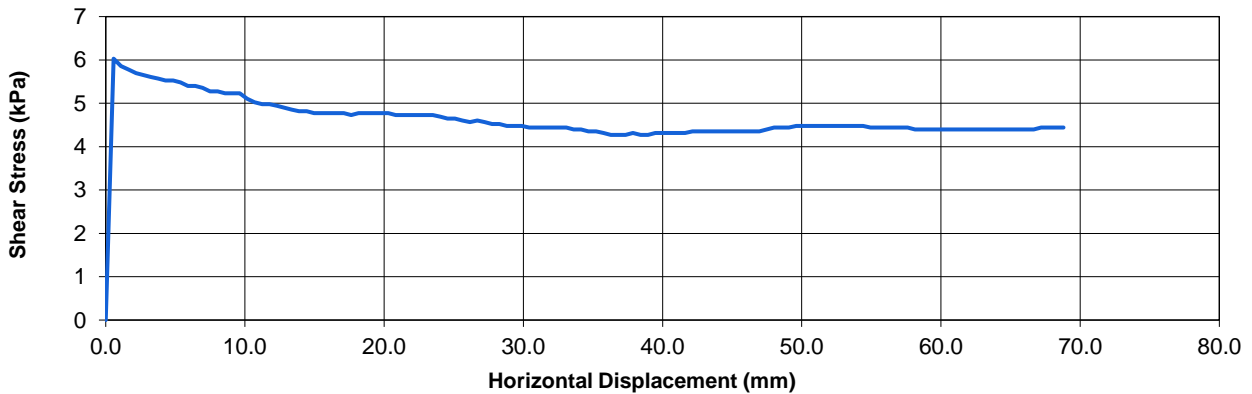
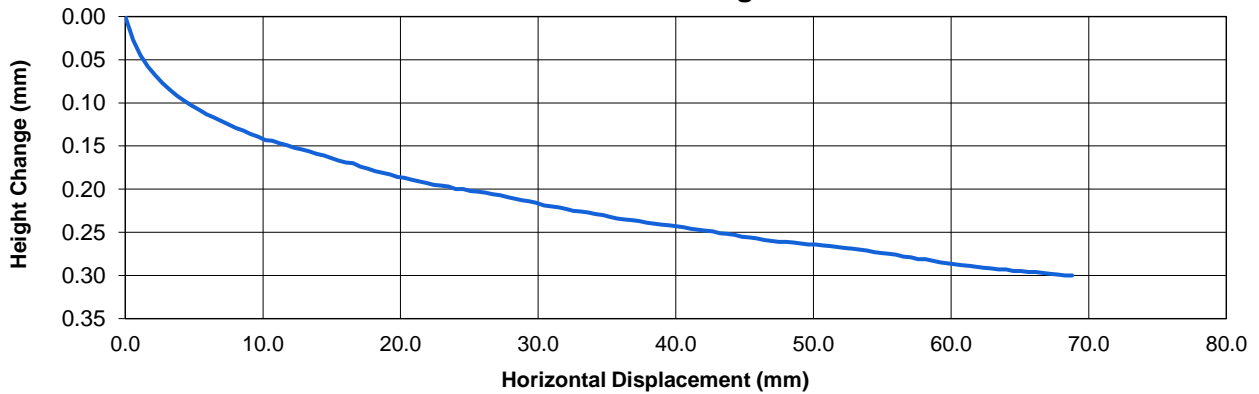
Description:
Grey mottled brown CLAY.

Specimen: 1

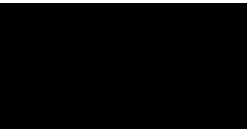
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

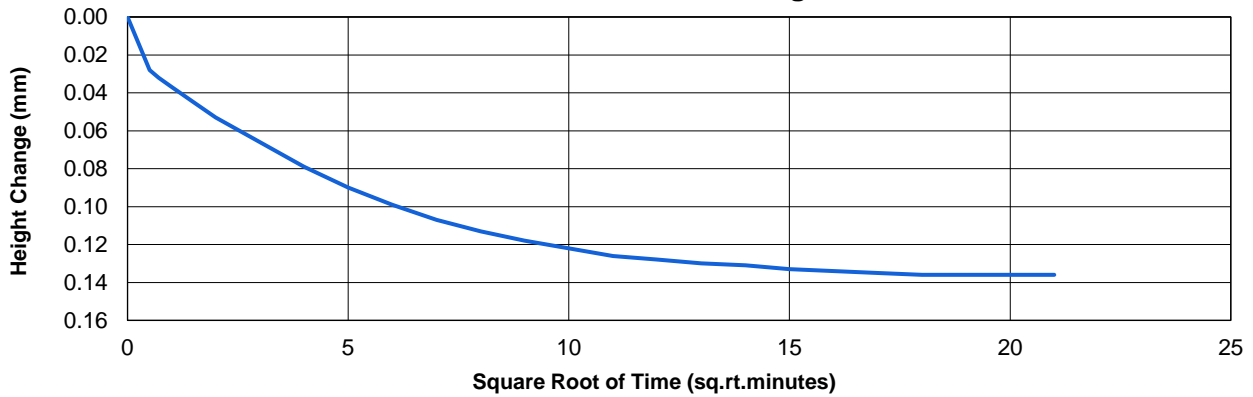
(ring shear apparatus)

Borehole No	ATK_BH13
Sample No	2.4
Depth (m)	2.00
Sample Type	UT

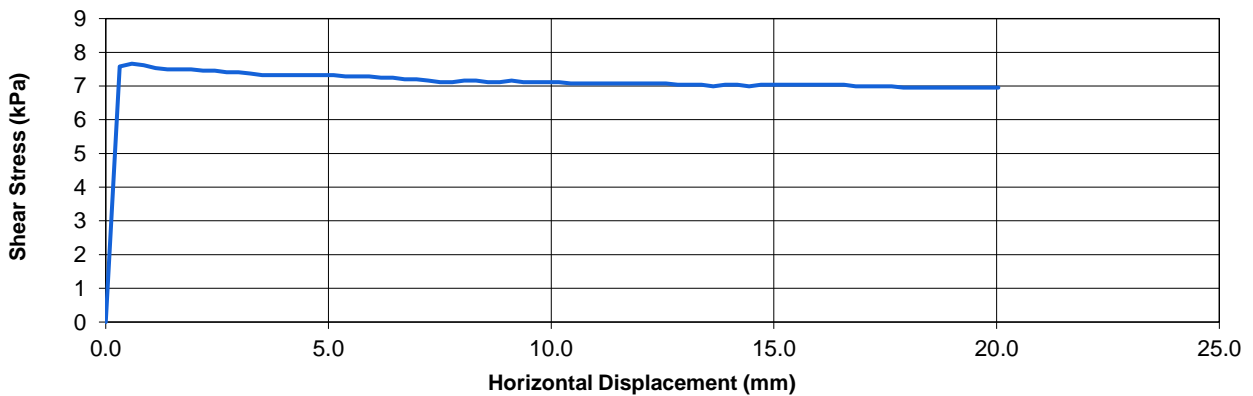
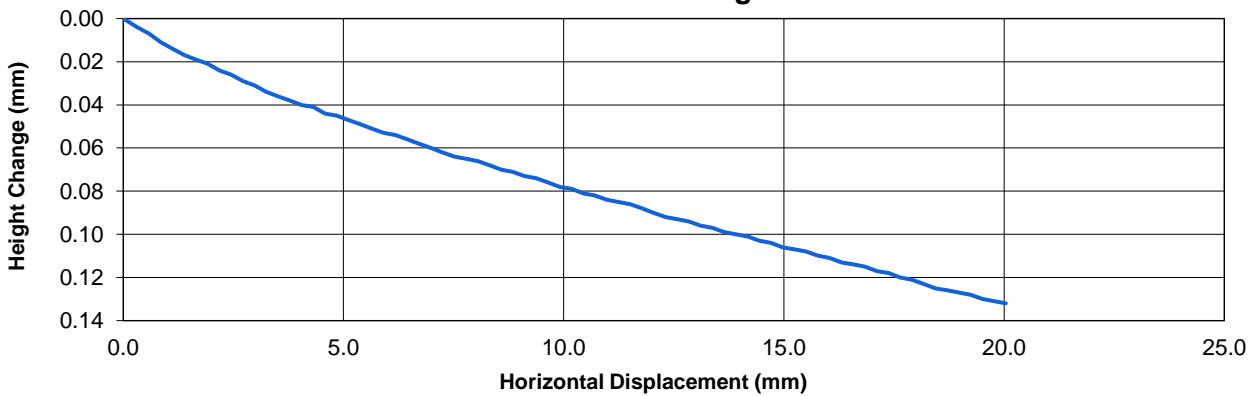
Description:
Grey mottled brown CLAY.

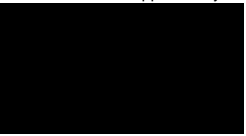
Specimen: 2

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

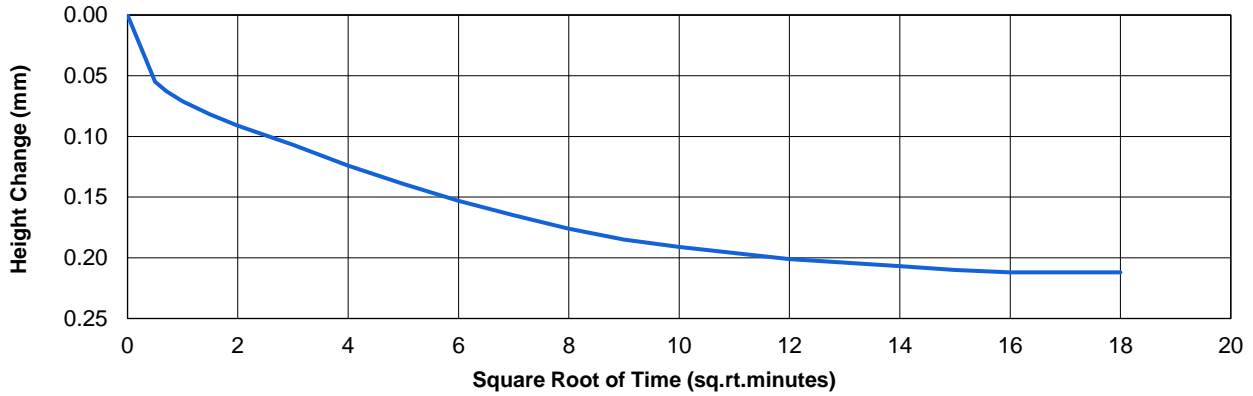
(ring shear apparatus)

Borehole No	ATK_BH13
Sample No	2.4
Depth (m)	2.00
Sample Type	UT

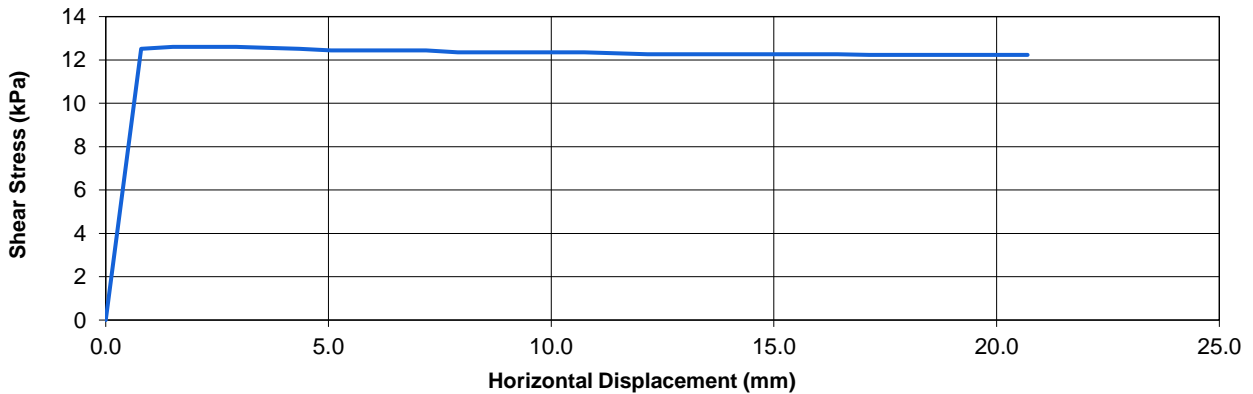
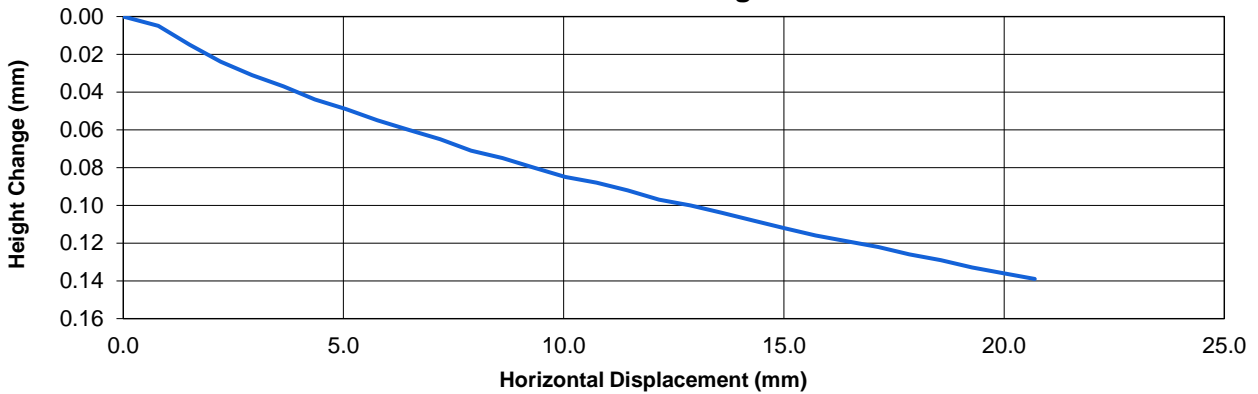
Description:
Grey mottled brown CLAY.

Specimen: 3

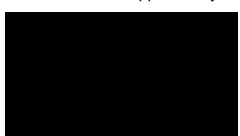
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH14
 Sample No 104
 Depth (m) 2.50
 Sample Type D

Description:

Yellowish brown CLAY.

Specimen Details

Natural water content	%	48.0
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.93
Outer Radius	mm	49.94
Initial height	mm	4.88
Initial water content	%	48.0
Initial bulk density	Mg/m ³	1.73
Initial dry density	Mg/m ³	1.17

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.4	9.2	16.0
Final mean linear displacement	mm	23.0	24.1	20.9

Final Conditions

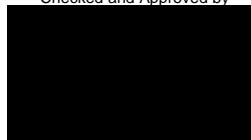
Final water content	%	47.1
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	12
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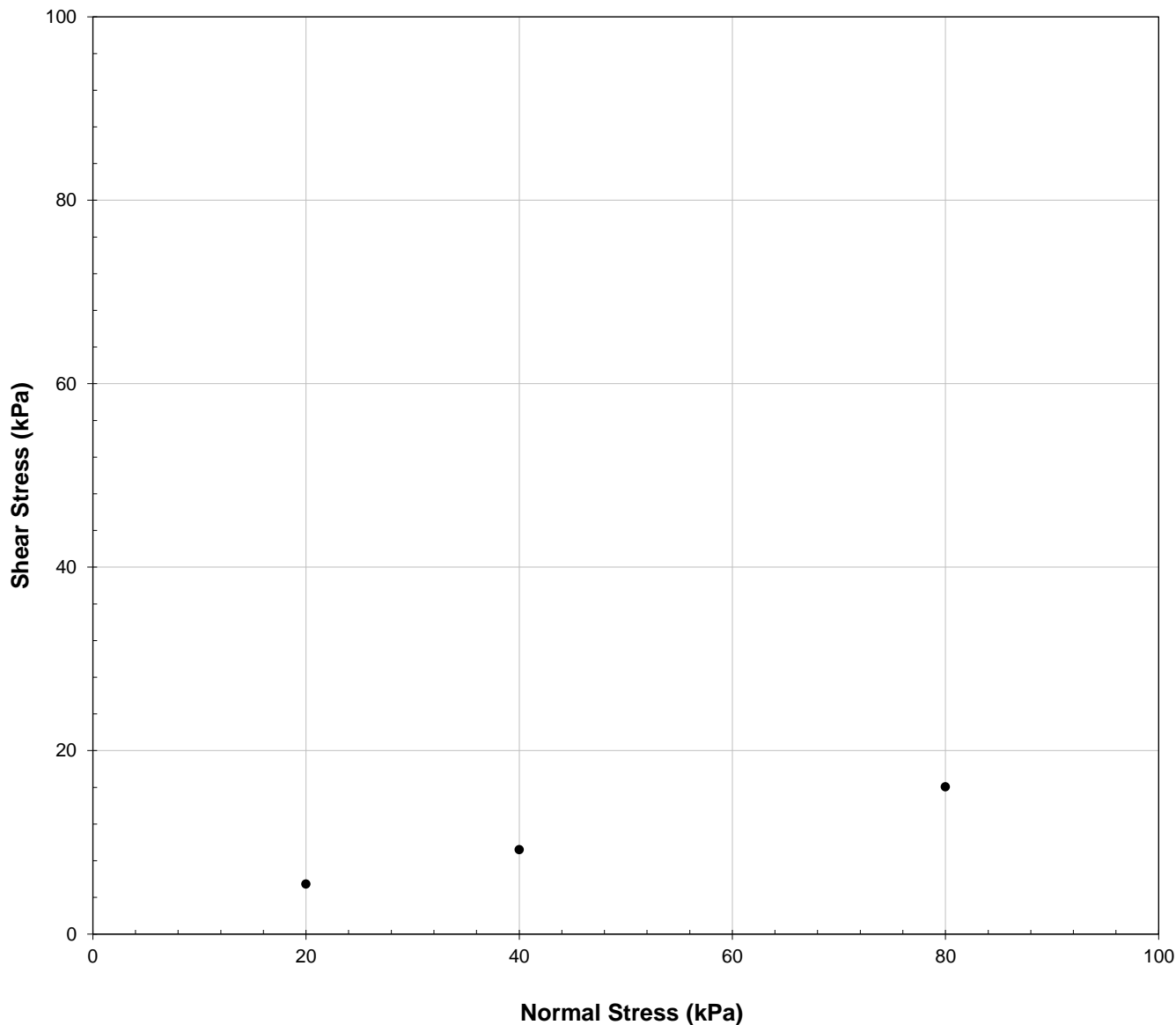
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_BH14
Sample No	104
Depth (m)	2.50
Sample Type	D

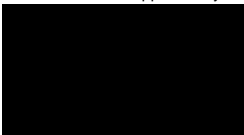
Description:
Yellowish brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 12.0$



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DIRECT SHEAR TEST – RING SHEAR

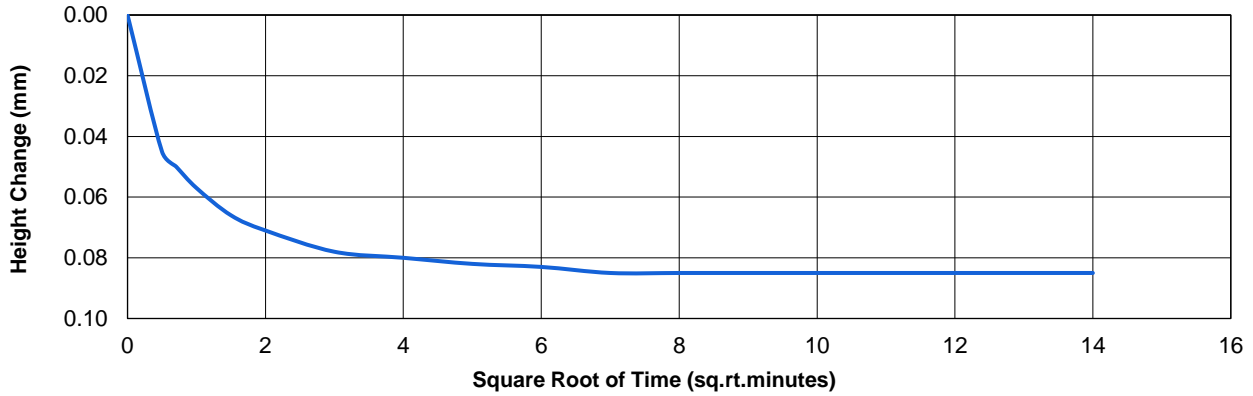
(ring shear apparatus)

Borehole No	ATK_BH14
Sample No	104
Depth (m)	2.50
Sample Type	D

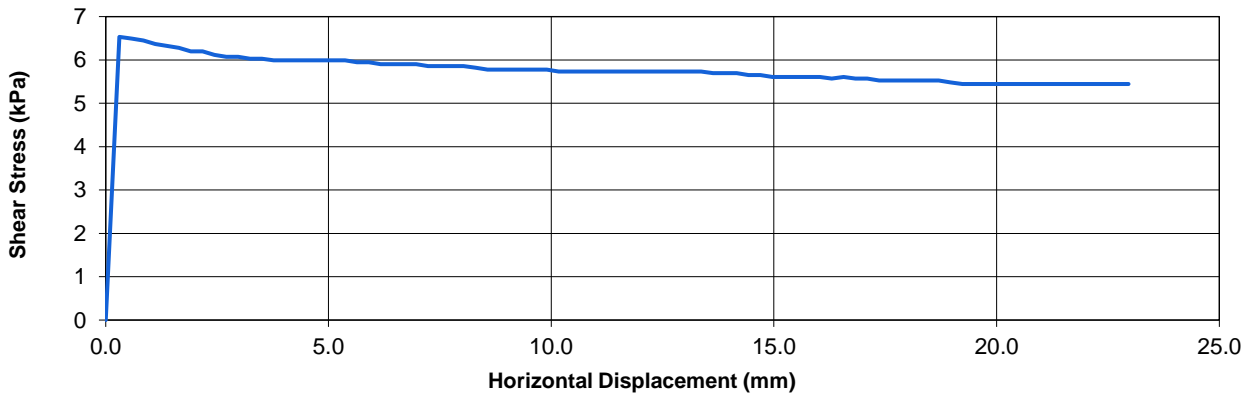
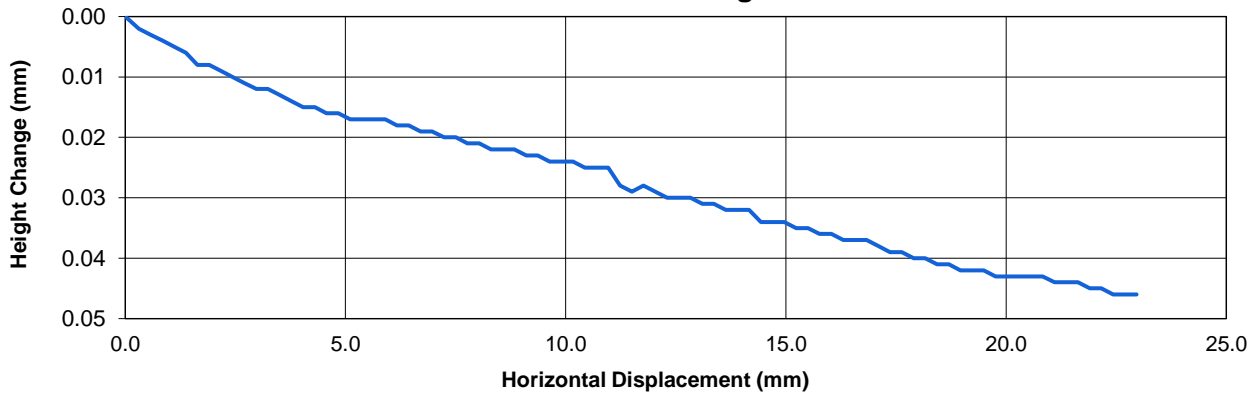
Description:
Yellowish brown CLAY.


Specimen: 1

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

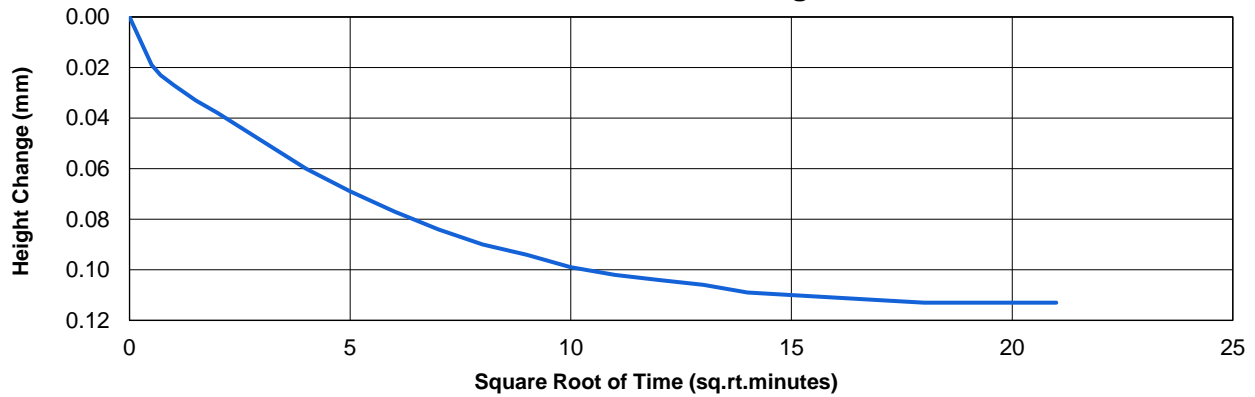
Borehole No	ATK_BH14
Sample No	104
Depth (m)	2.50
Sample Type	D

Description:

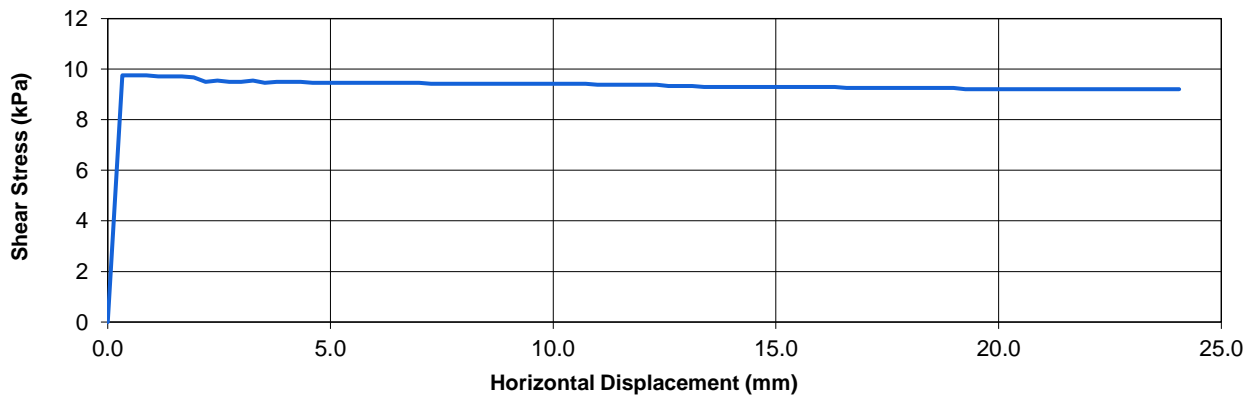
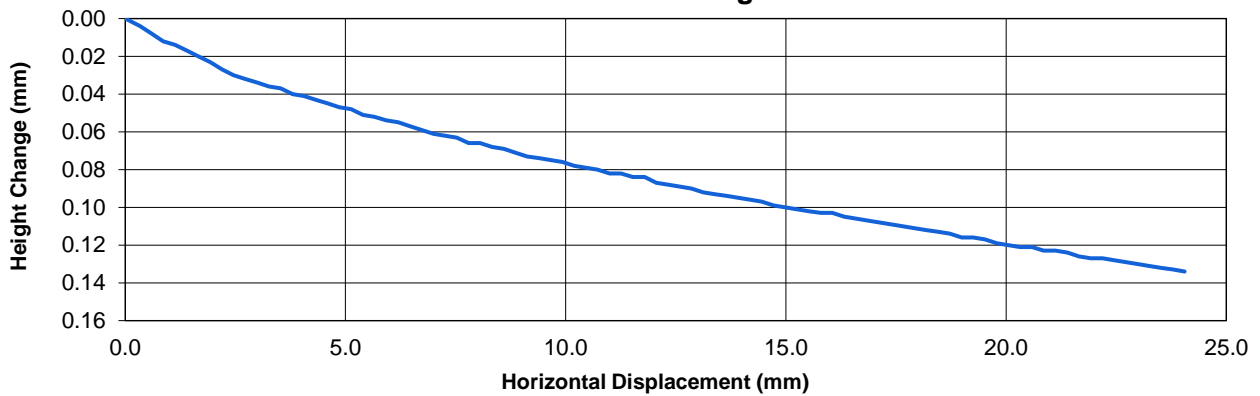
Yellowish brown CLAY.

Specimen: 2

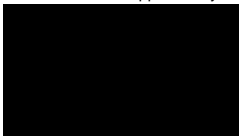
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

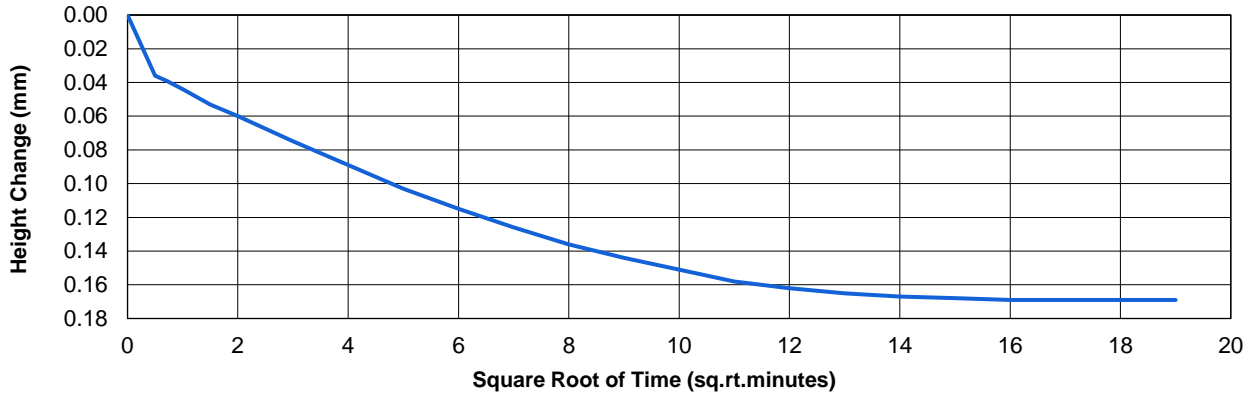
(ring shear apparatus)

Borehole No	ATK_BH14
Sample No	104
Depth (m)	2.50
Sample Type	D

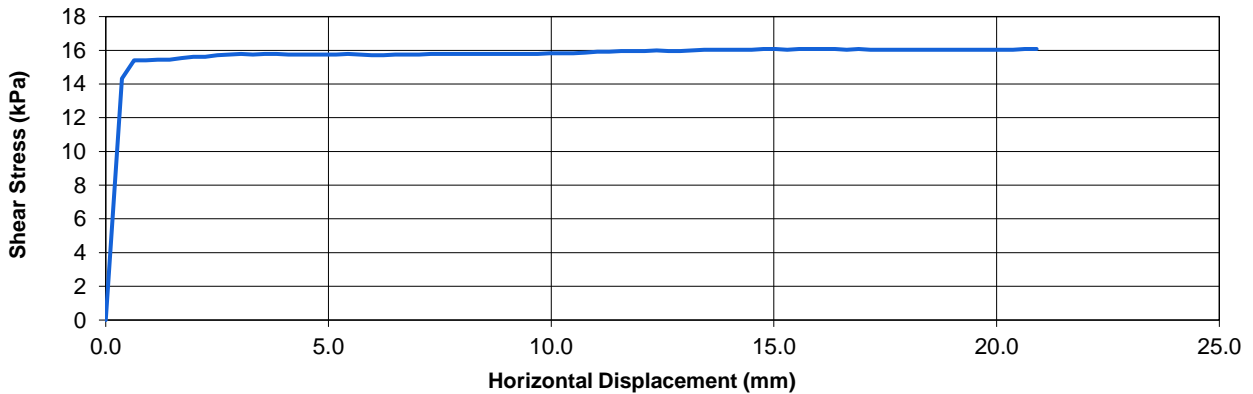
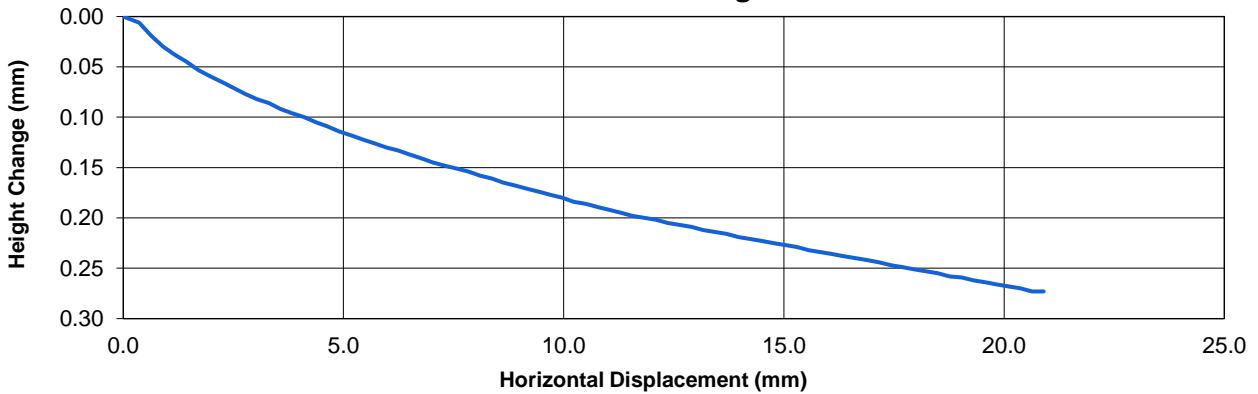
Description:
Yellowish brown CLAY.


Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_BH16
 Sample No 102
 Depth (m) 0.50
 Sample Type CS

Description:

Grey mottled orangish brown CLAY.

Specimen Details

Natural water content	%	34.5
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	35.02
Outer Radius	mm	49.99
Initial height	mm	4.89
Initial water content	%	34.5
Initial bulk density	Mg/m ³	1.87
Initial dry density	Mg/m ³	1.39

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	10	20	40
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	10	20	40
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	2.5	4.1	6.7
Final mean linear displacement	mm	23.0	24.3	20.9

Final Conditions

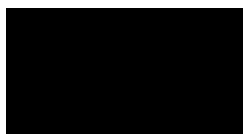
Final water content	%	44.3
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	10
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Notes

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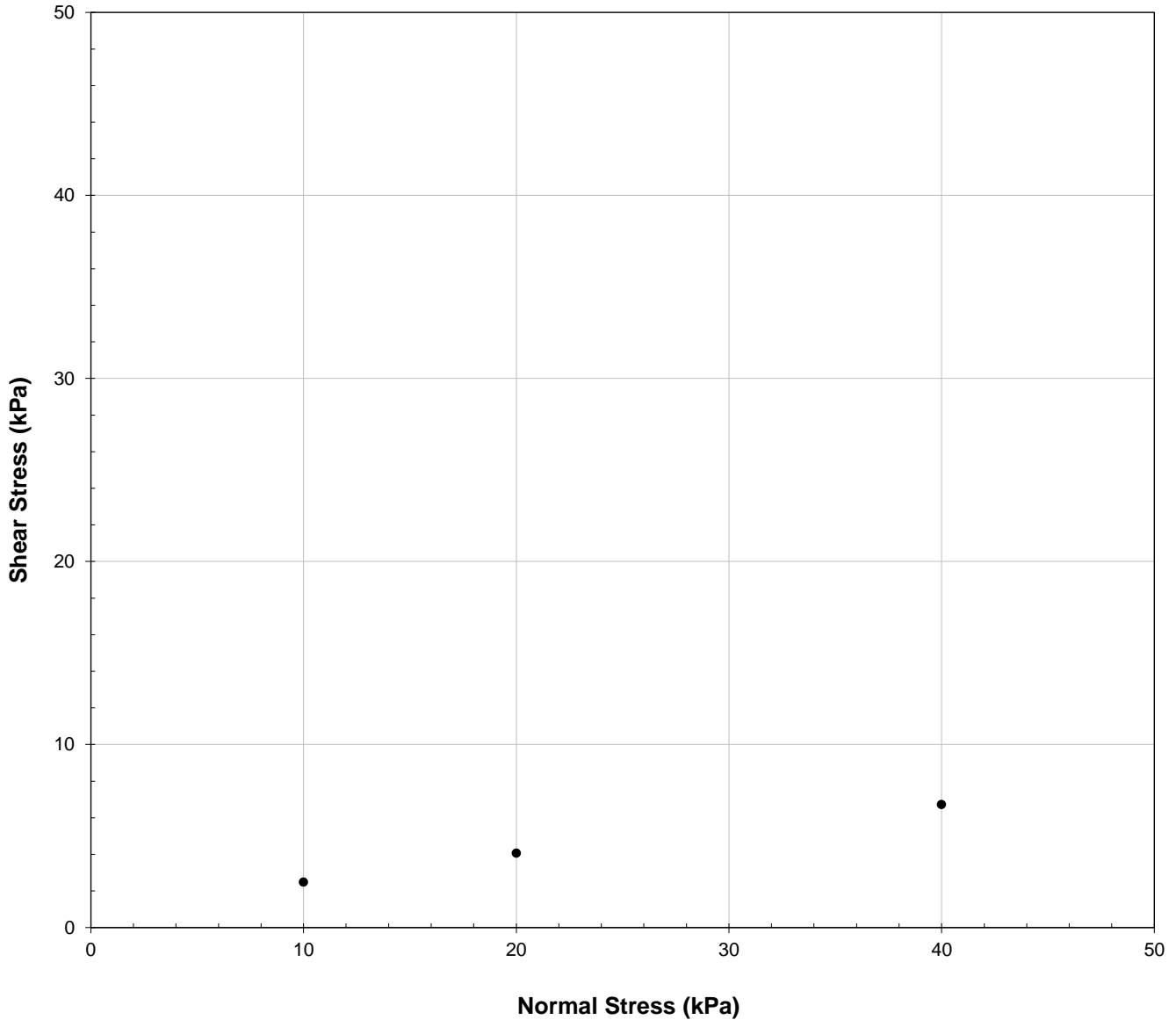
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_BH16
Sample No	102
Depth (m)	0.50
Sample Type	CS


Description:
 Grey mottled orangish brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 10.0$

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DIRECT SHEAR TEST – RING SHEAR

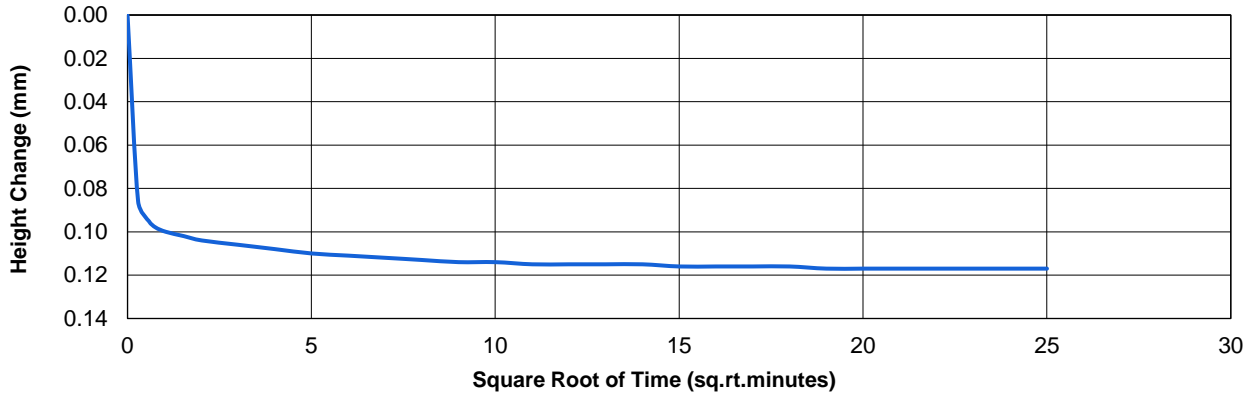
(ring shear apparatus)

Borehole No	ATK_BH16
Sample No	102
Depth (m)	0.50
Sample Type	CS

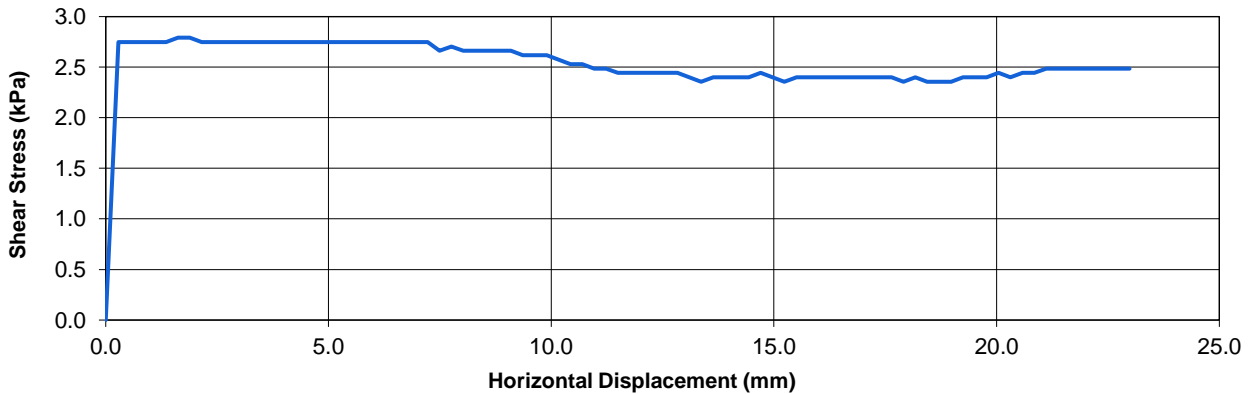
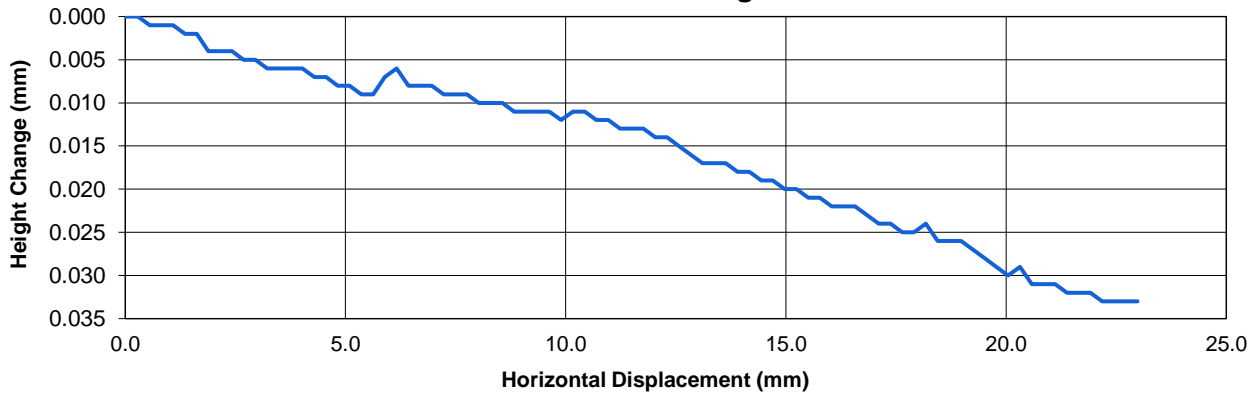
Description:
 Grey mottled orangish brown CLAY.

Specimen: 1

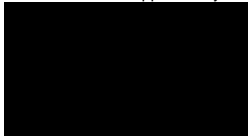
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

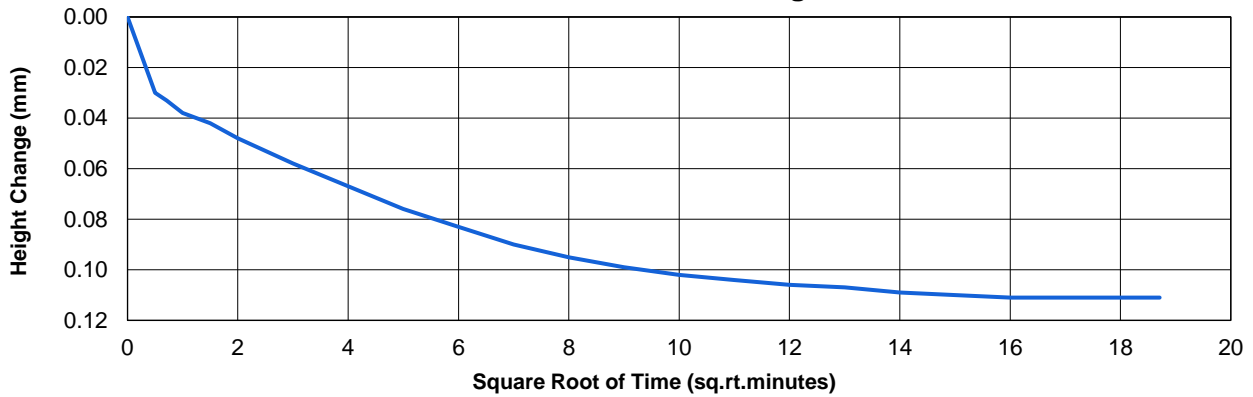
(ring shear apparatus)

Borehole No	ATK_BH16
Sample No	102
Depth (m)	0.50
Sample Type	CS

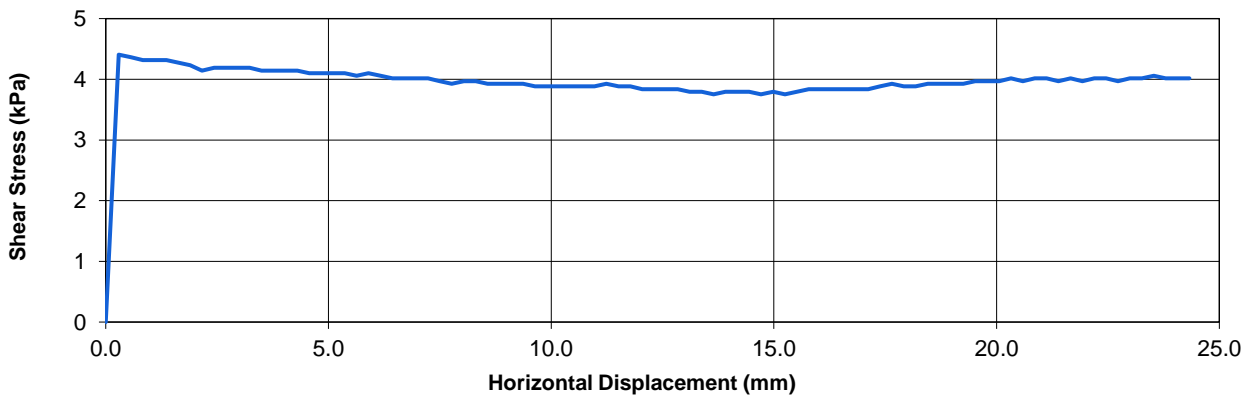
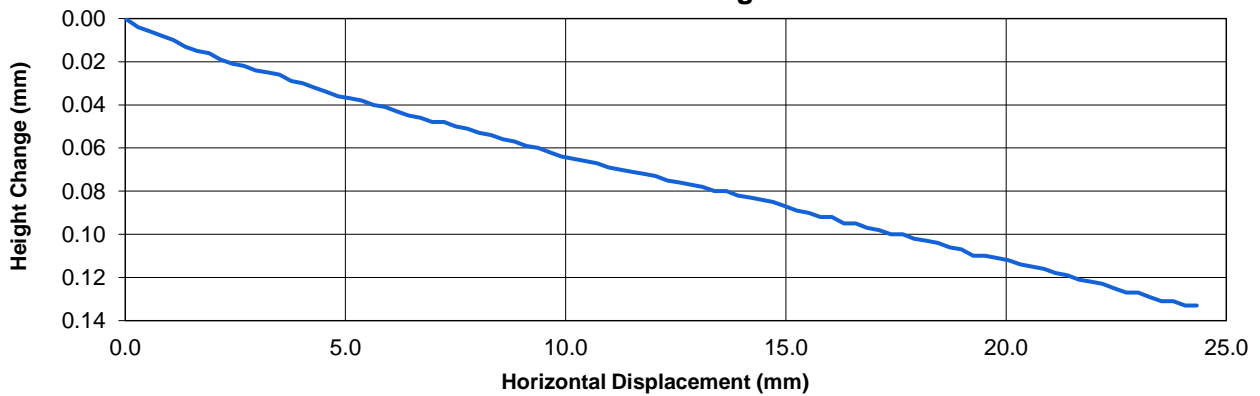
Description:
Grey mottled orangish brown CLAY.

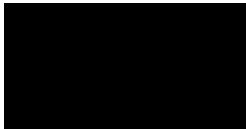
Specimen: 2

Consolidation Stage



Shear Stage



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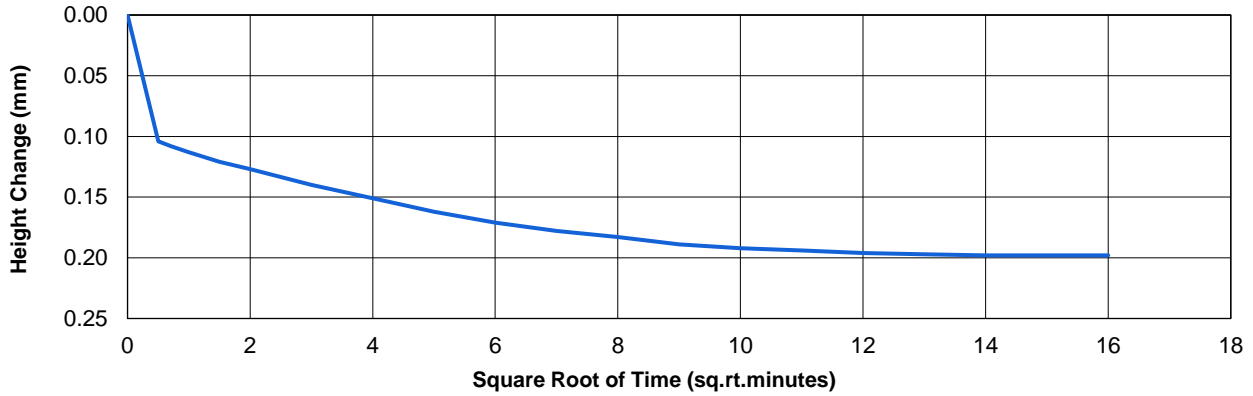
(ring shear apparatus)

Borehole No	ATK_BH16
Sample No	102
Depth (m)	0.50
Sample Type	CS

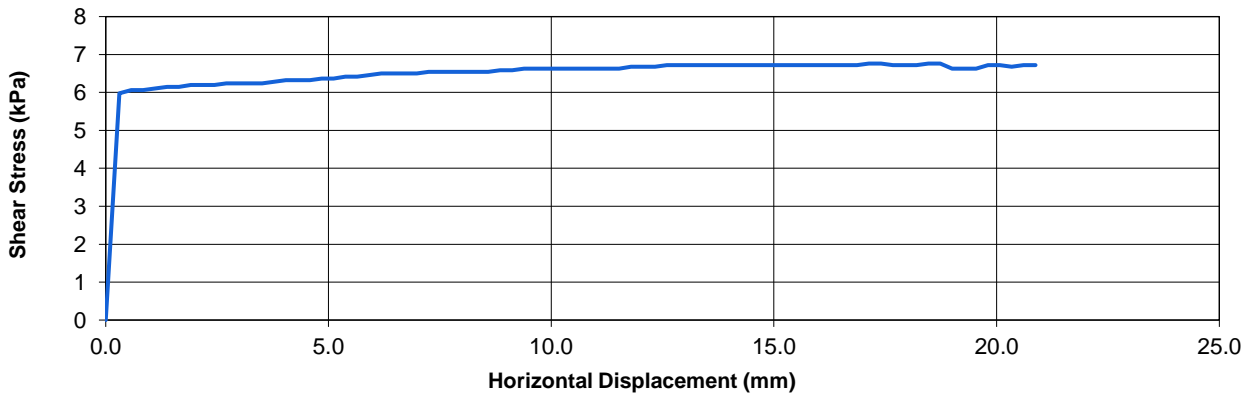
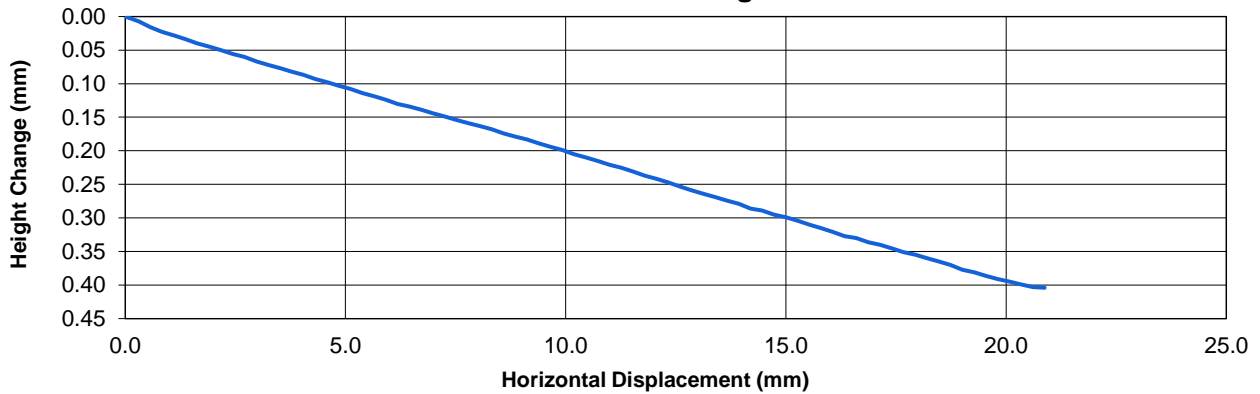
Description:
 Grey mottled orangish brown CLAY.

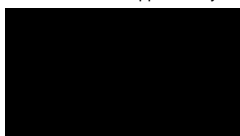
Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP03
 Sample No 11
 Depth (m) 2.50
 Sample Type D

Description:

Brown mottled grey CLAY.

Specimen Details

Natural water content	%	25.5
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.93
Outer Radius	mm	49.94
Initial height	mm	4.88
Initial water content	%	29.2
Initial bulk density	Mg/m ³	1.95
Initial dry density	Mg/m ³	1.51

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min (±10%) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	3	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.3	9.4	16.8
Final mean linear displacement	mm	68.3	21.9	21.4

Final Conditions

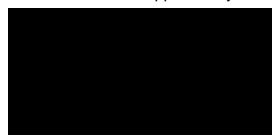
Final water content	%	34.2
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	10
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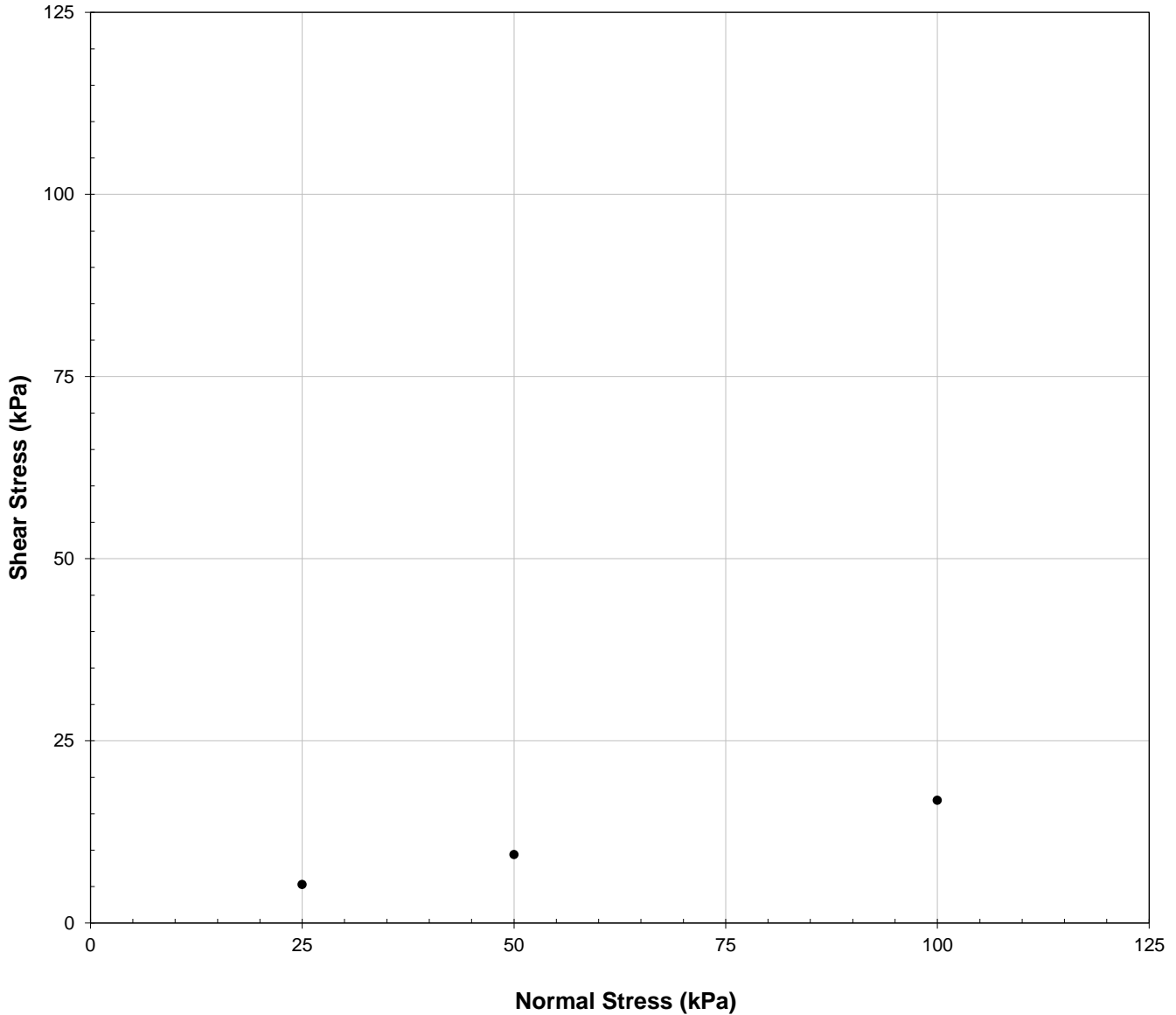
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_TP03
Sample No	11
Depth (m)	2.50
Sample Type	D

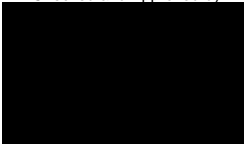
Description:
Brown mottled grey CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 10.0$

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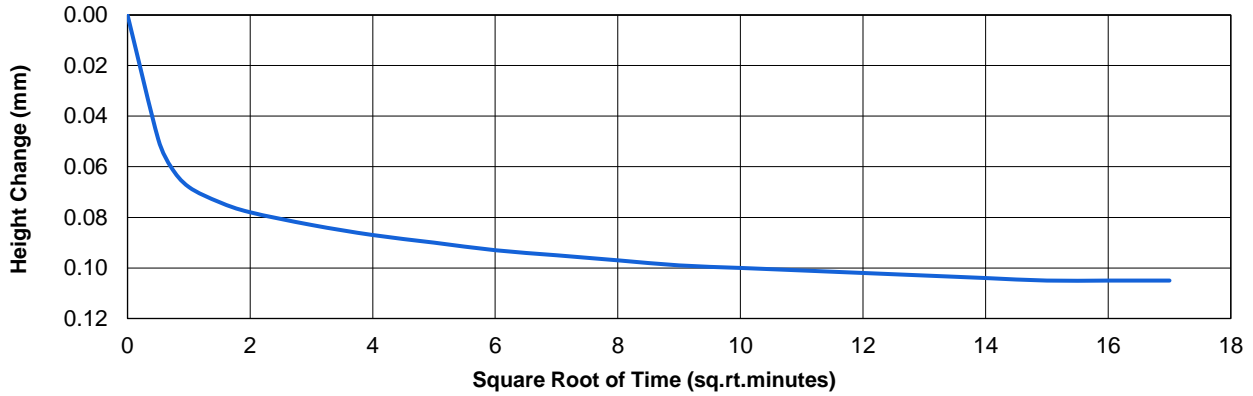
(ring shear apparatus)

Borehole No	ATK_TP03
Sample No	11
Depth (m)	2.50
Sample Type	D

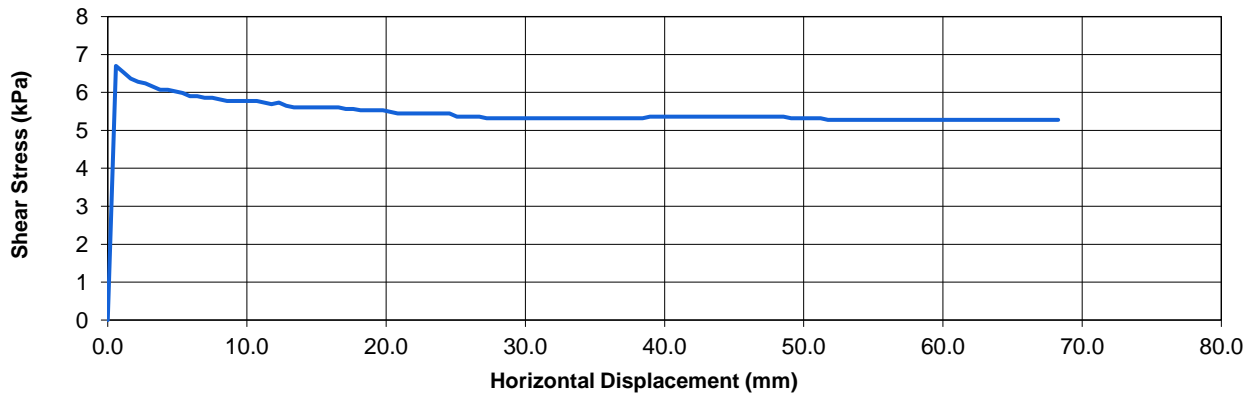
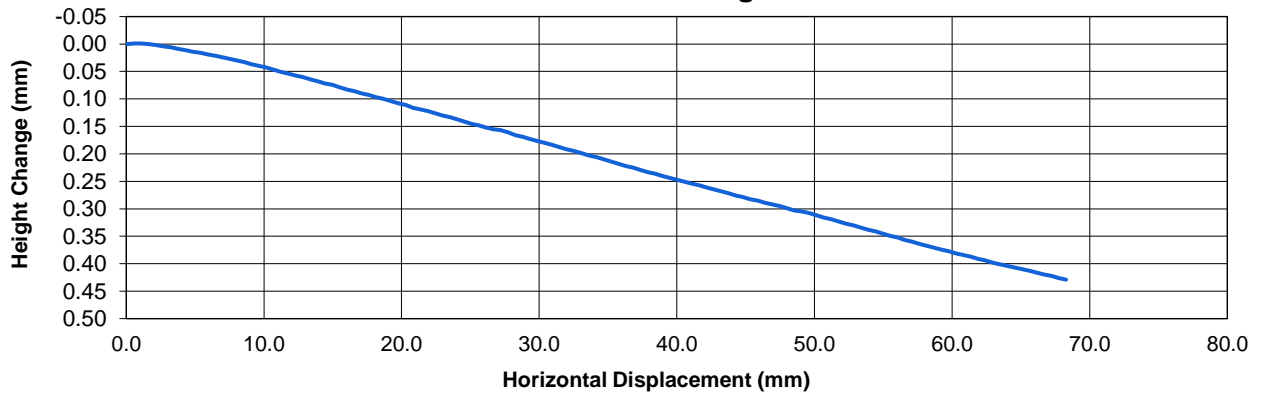
Description:
Brown mottled grey CLAY.

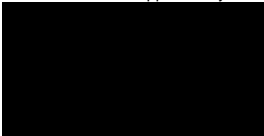
Specimen: 1

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

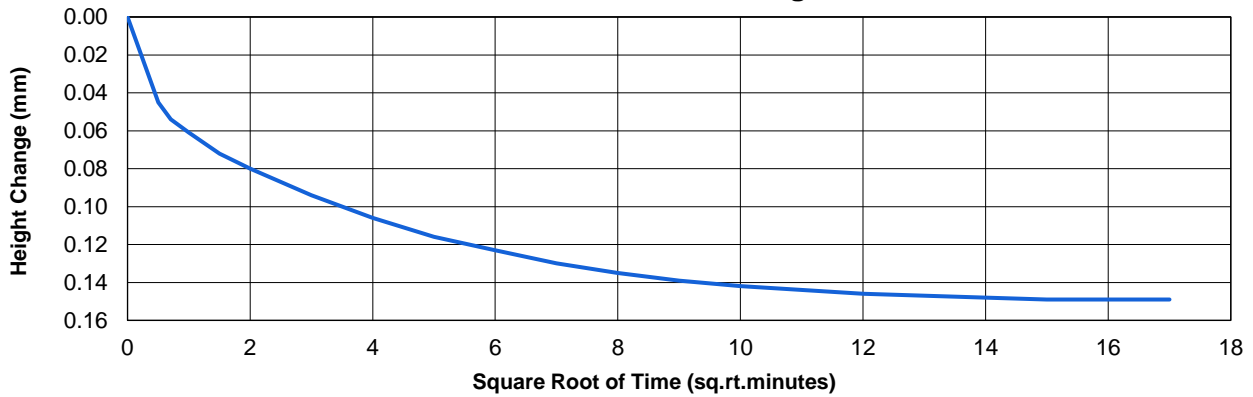
(ring shear apparatus)

Borehole No	ATK_TP03
Sample No	11
Depth (m)	2.50
Sample Type	D

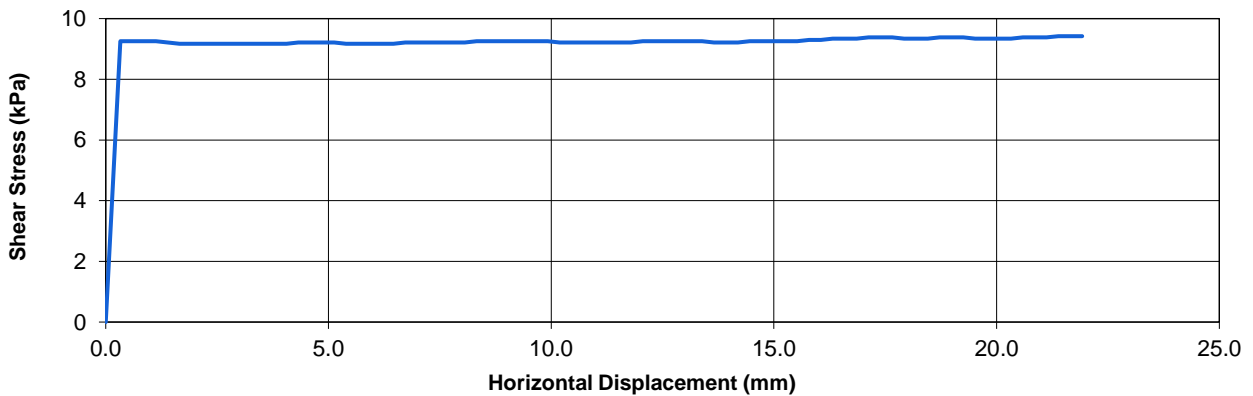
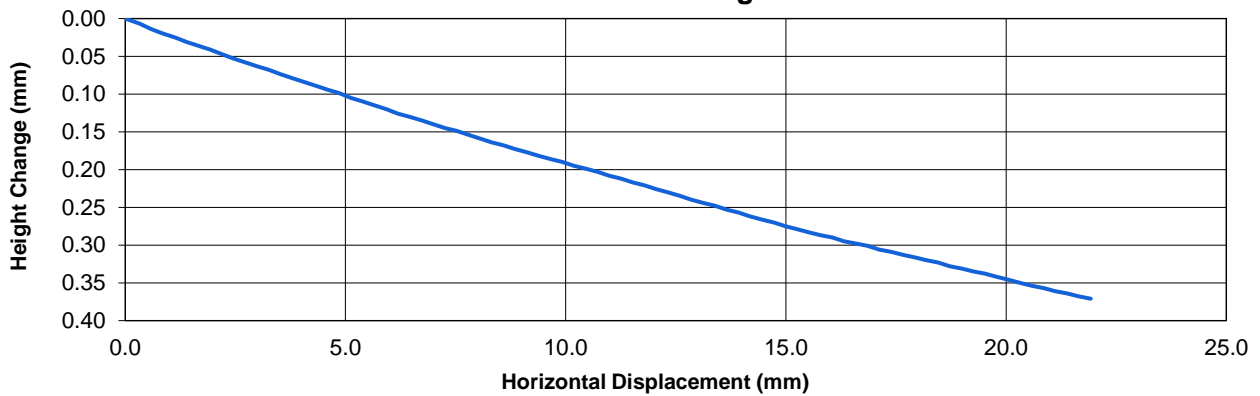
Description:
Brown mottled grey CLAY.

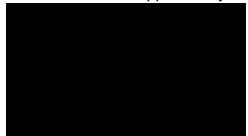
Specimen: 2

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

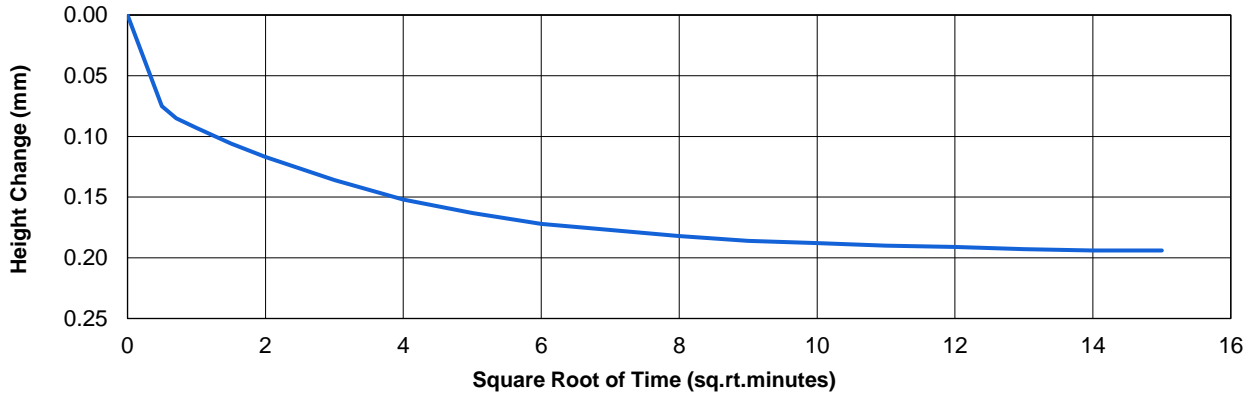
(ring shear apparatus)

Borehole No	ATK_TP03
Sample No	11
Depth (m)	2.50
Sample Type	D

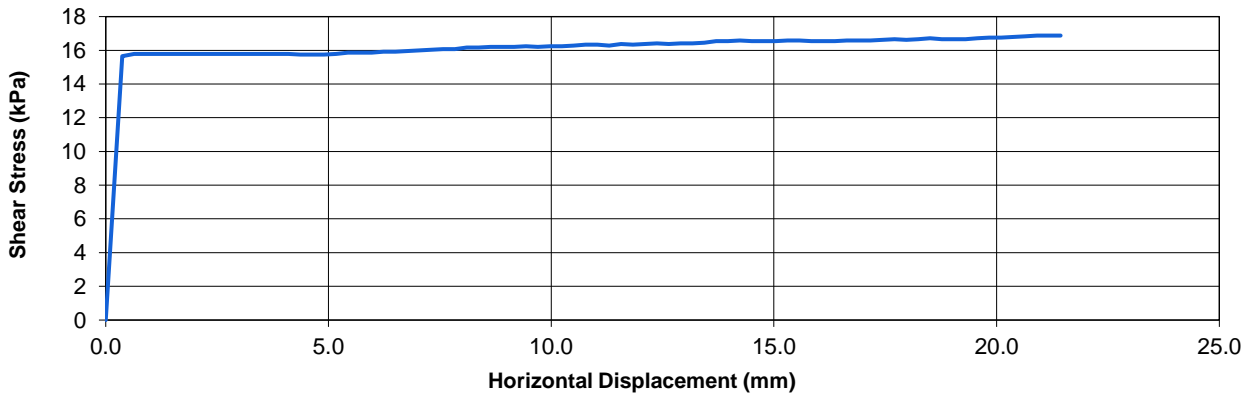
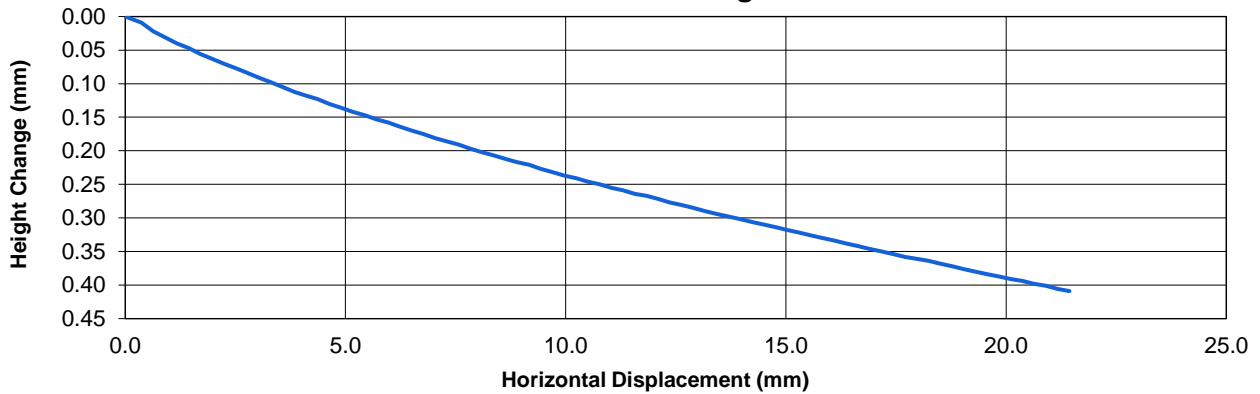
Description:
Brown mottled grey CLAY.


Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP04
 Sample No 12
 Depth (m) 2.55
 Sample Type D

Description:

Brown CLAY.

Specimen Details

Natural water content	%	42.4
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.85
Outer Radius	mm	49.99
Initial height	mm	5.18
Initial water content	%	42.4
Initial bulk density	Mg/m ³	1.75
Initial dry density	Mg/m ³	1.23

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min (±10%) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	3	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	6.8	9.9	17.0
Final mean linear displacement	mm	68.3	22.2	21.4

Final Conditions

Final water content	%	47.4
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	10
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Notes

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DIRECT SHEAR TEST – RING SHEAR

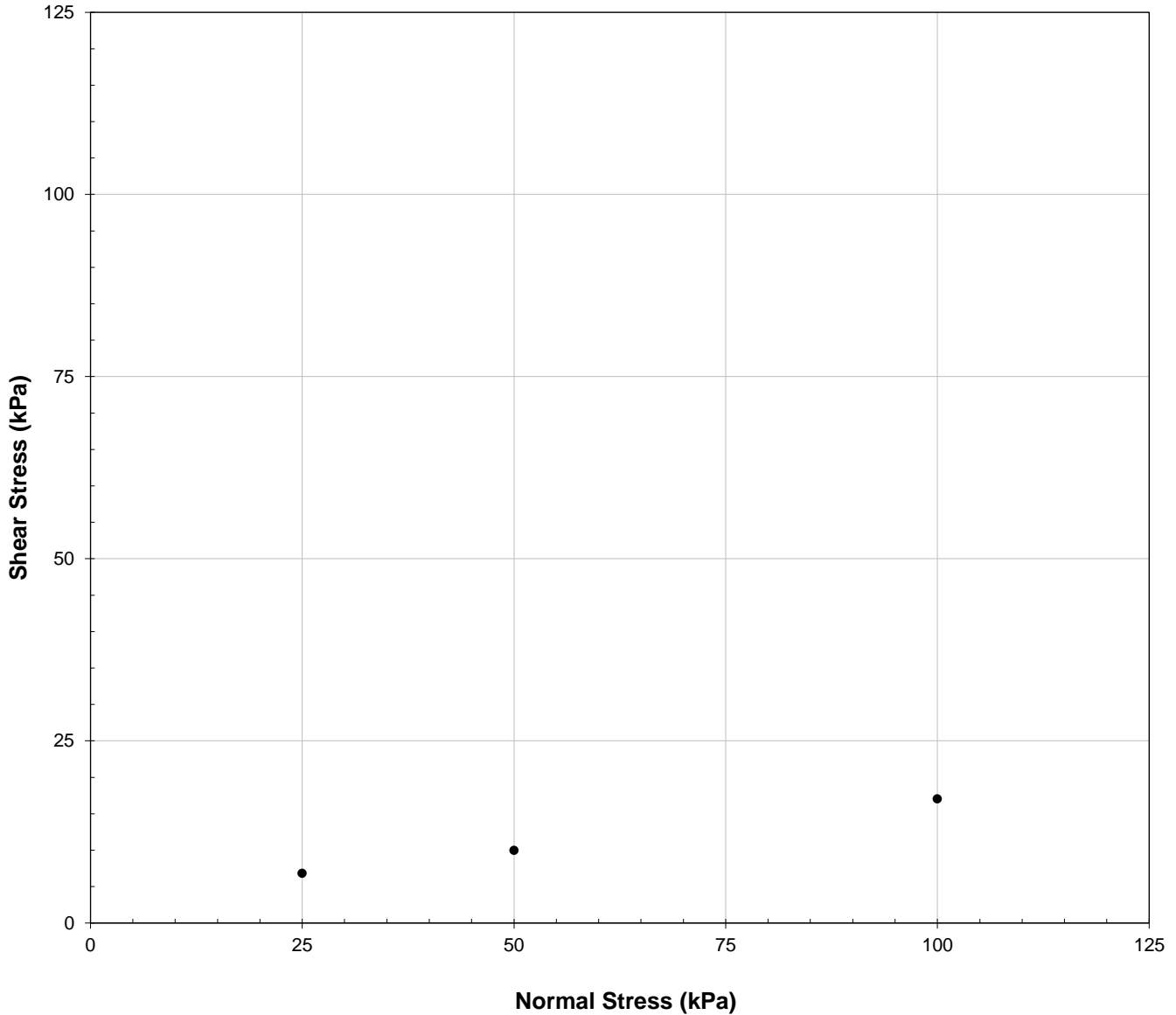
(ring shear apparatus)

Borehole No	ATK_TP04
Sample No	12
Depth (m)	2.55
Sample Type	D

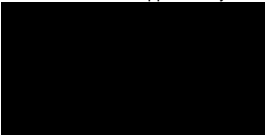
Description:

Brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 10.0$

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DIRECT SHEAR TEST – RING SHEAR

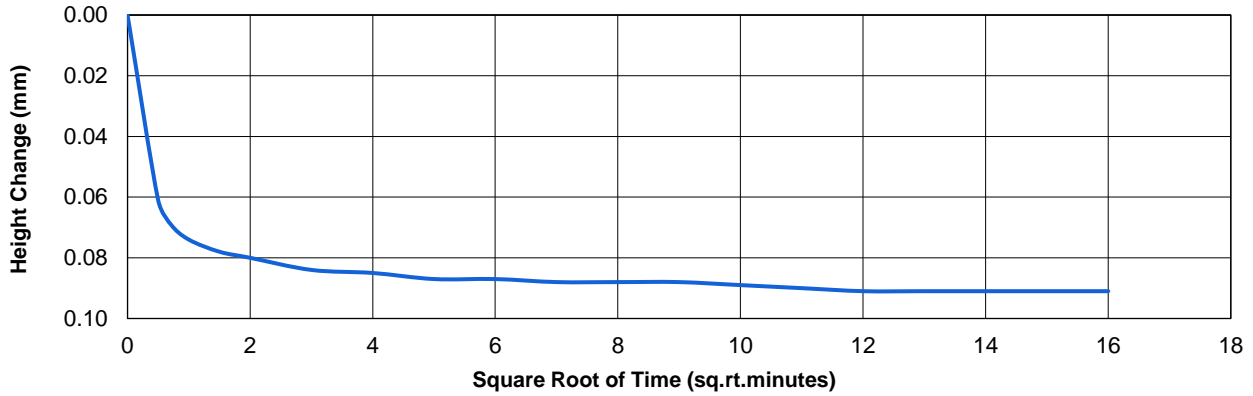
(ring shear apparatus)

Borehole No	ATK_TP04
Sample No	12
Depth (m)	2.55
Sample Type	D

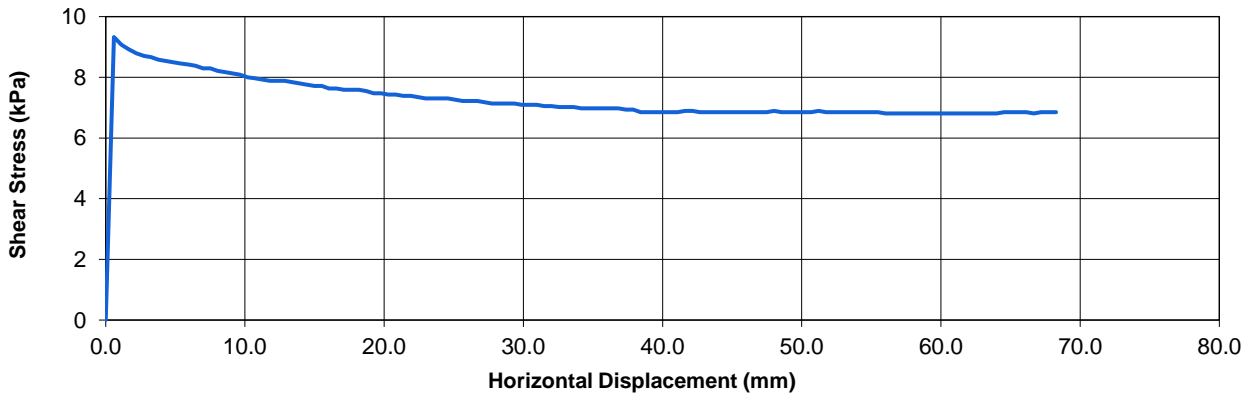
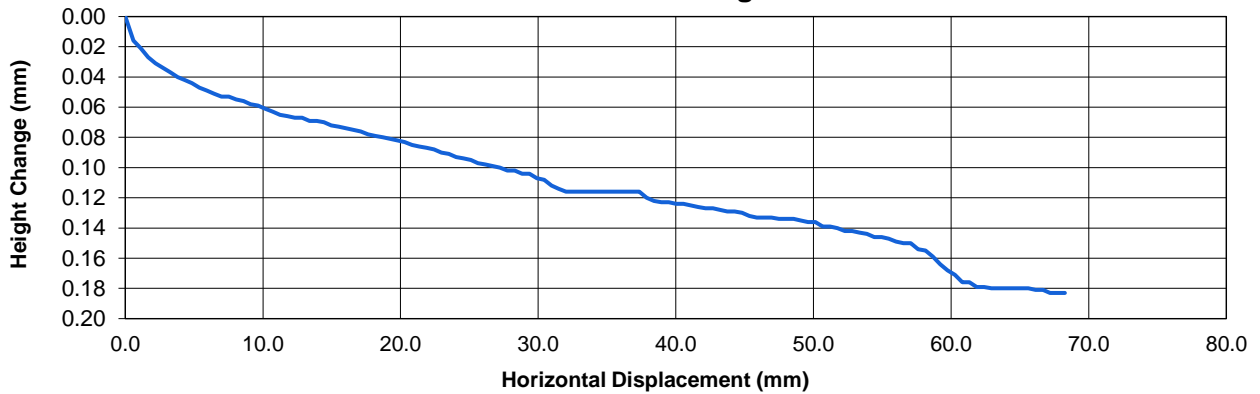
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Brown CLAY.

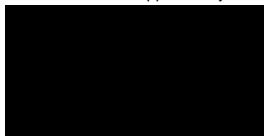
Specimen: 1

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

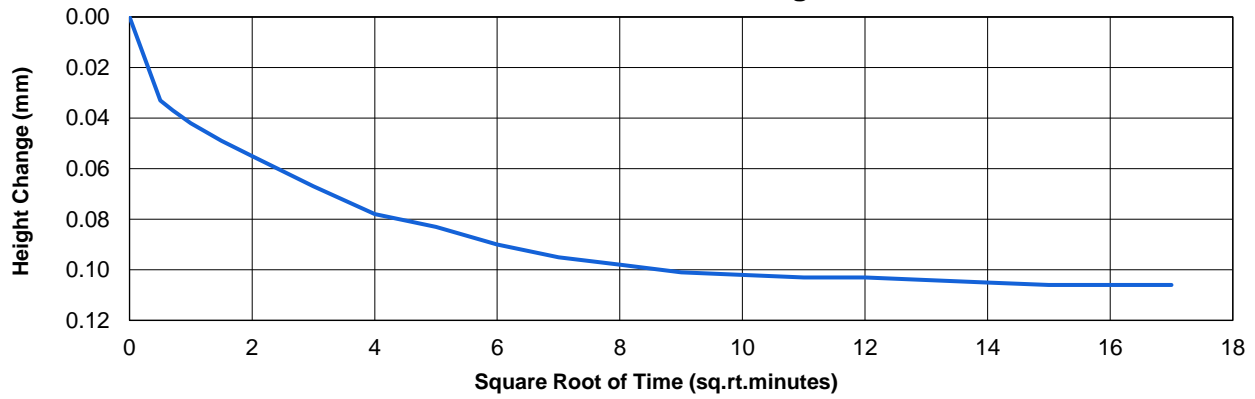
(ring shear apparatus)

Borehole No	ATK_TP04
Sample No	12
Depth (m)	2.55
Sample Type	D

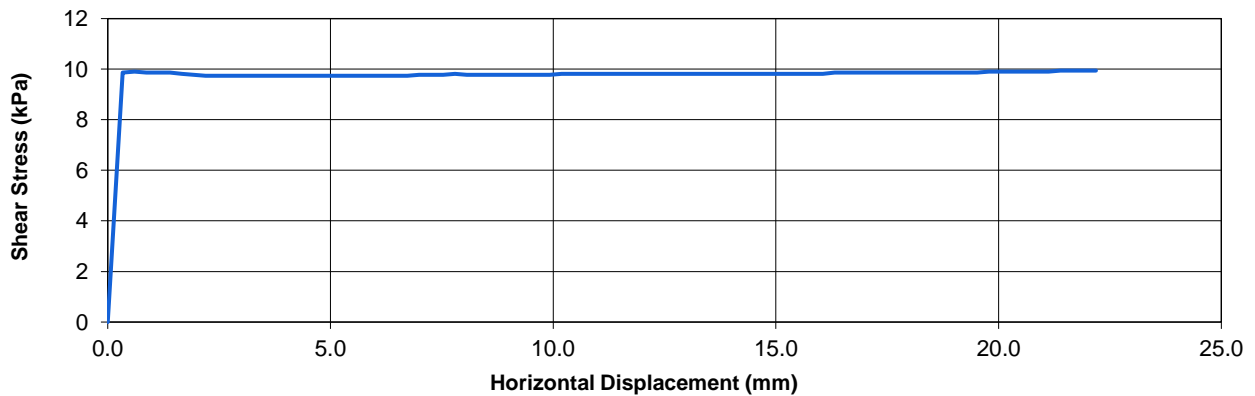
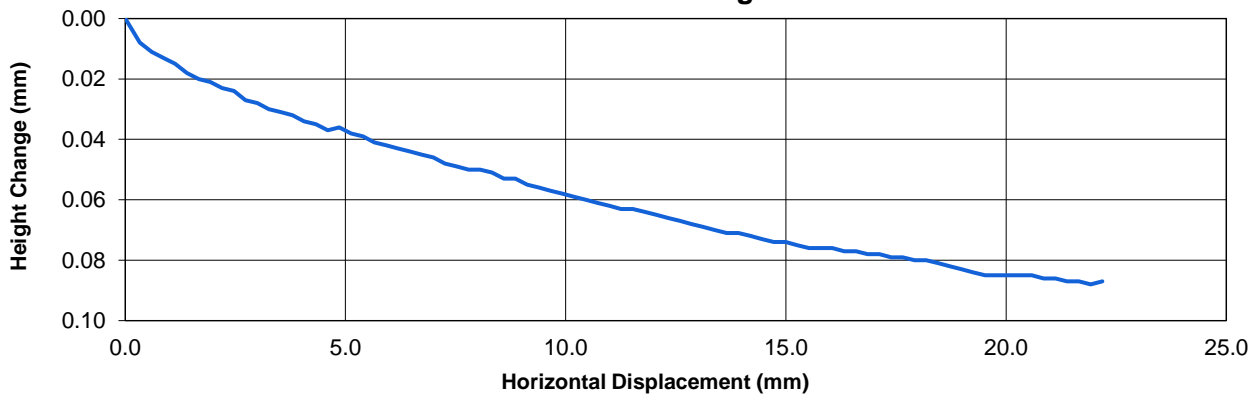
Description:
Brown CLAY.

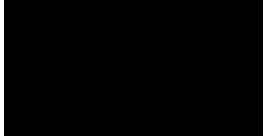
Specimen: 2

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

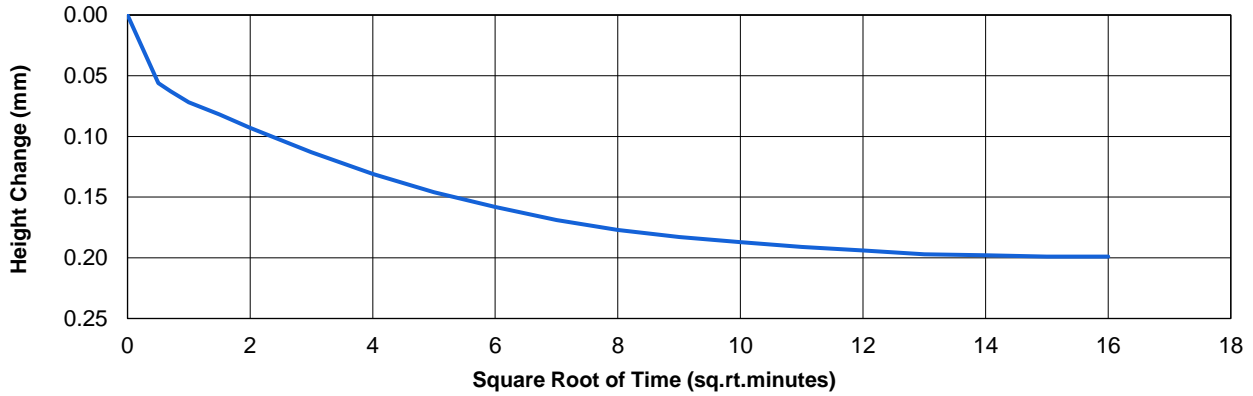
(ring shear apparatus)

Borehole No	ATK_TP04
Sample No	12
Depth (m)	2.55
Sample Type	D

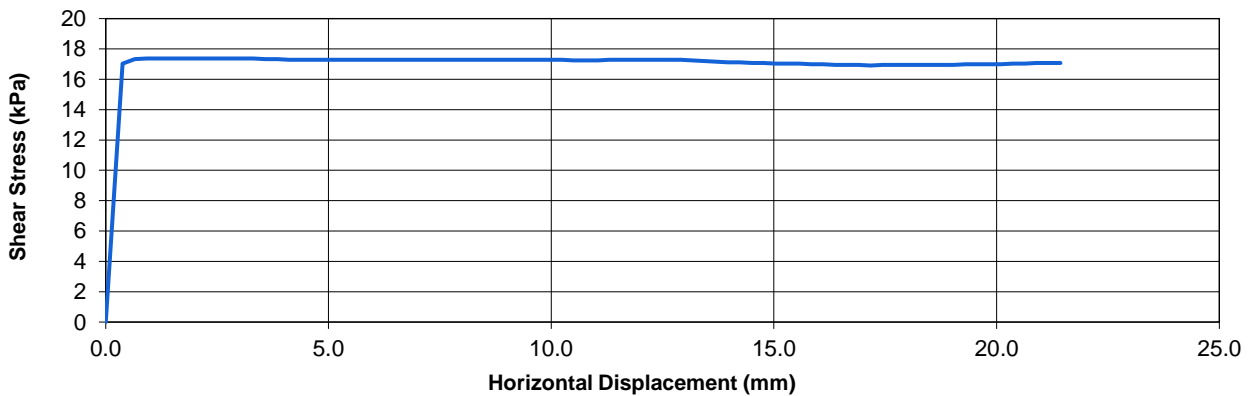
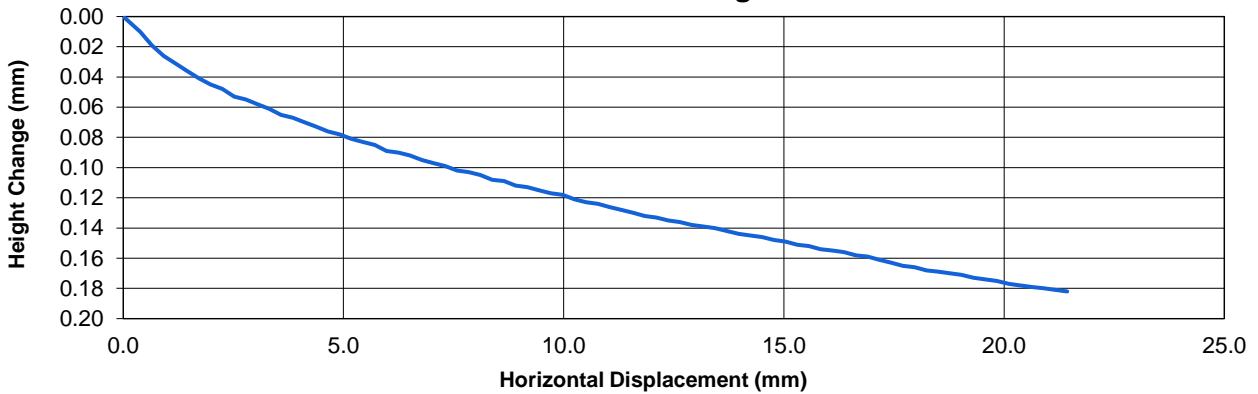
Description:
Brown CLAY.


Specimen: 3

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP06
 Sample No D11
 Depth (m) 2.50
 Sample Type D

Description:

Brown mottled grey CLAY.

Specimen Details

Natural water content	%	34.6
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	35.02
Outer Radius	mm	49.99
Initial height	mm	4.89
Initial water content	%	34.6
Initial bulk density	Mg/m ³	1.85
Initial dry density	Mg/m ³	1.37

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	3	1	1
Residual Conditions:				
Rate of angular displacement	degs/min	0.024	0.024	0.24
Residual shear stress	kPa	6.8	10.2	17.9
Final mean linear displacement	mm	68.4	22.0	213.8

Final Conditions

Final water content	%	39.4
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	10.5
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Notes

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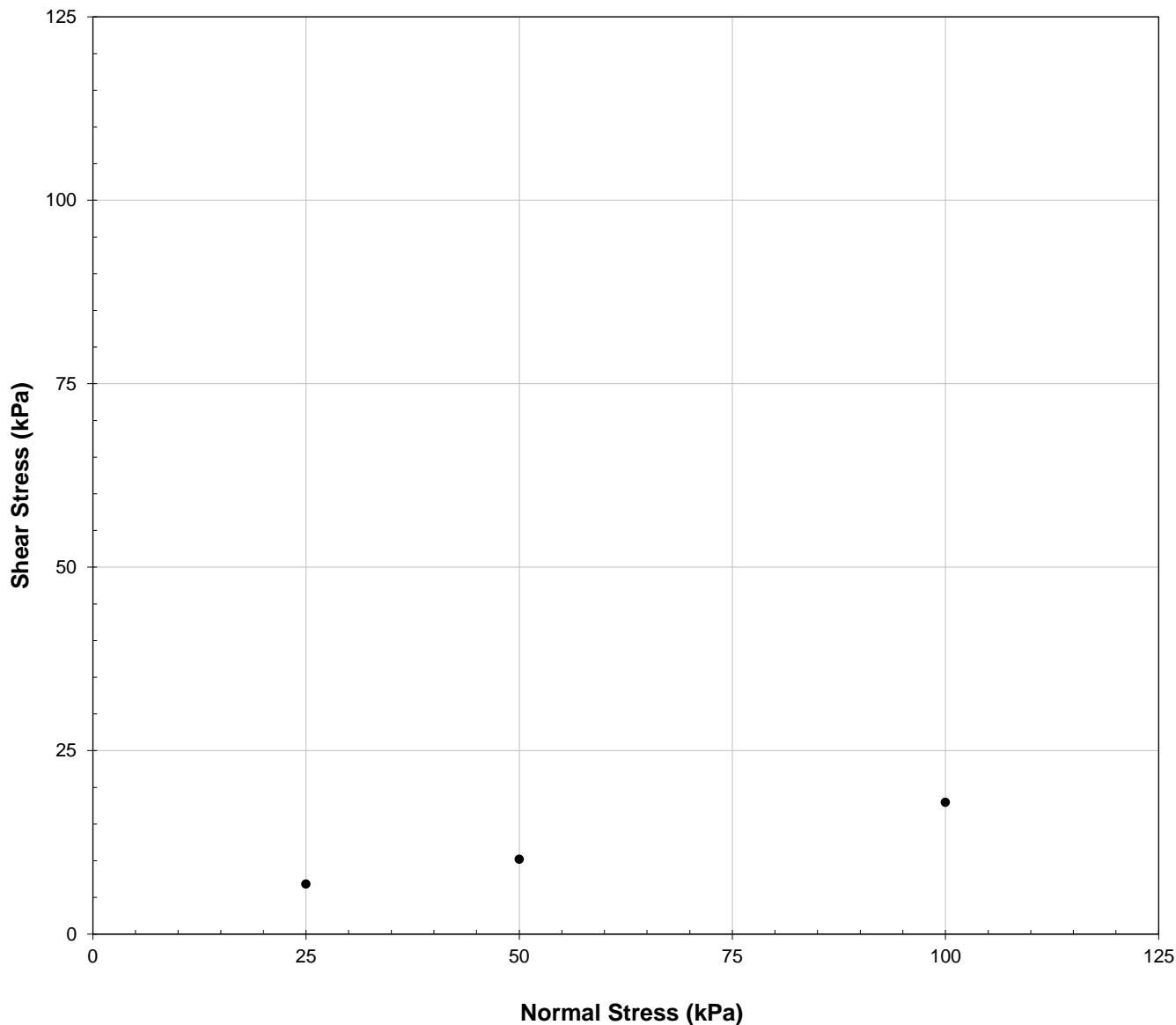
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

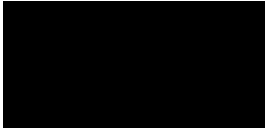
Borehole No	ATK_TP06
Sample No	D11
Depth (m)	2.50
Sample Type	D

Description:
Brown mottled grey CLAY.

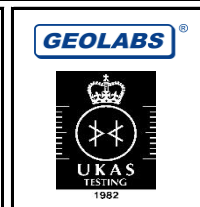
Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 10.5$

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DIRECT SHEAR TEST – RING SHEAR

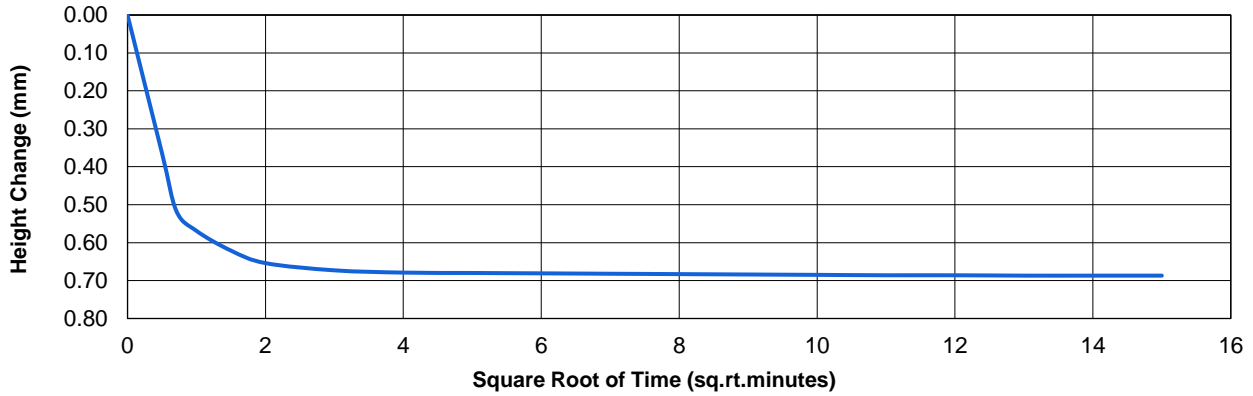
(ring shear apparatus)

Borehole No	ATK_TP06
Sample No	D11
Depth (m)	2.50
Sample Type	D

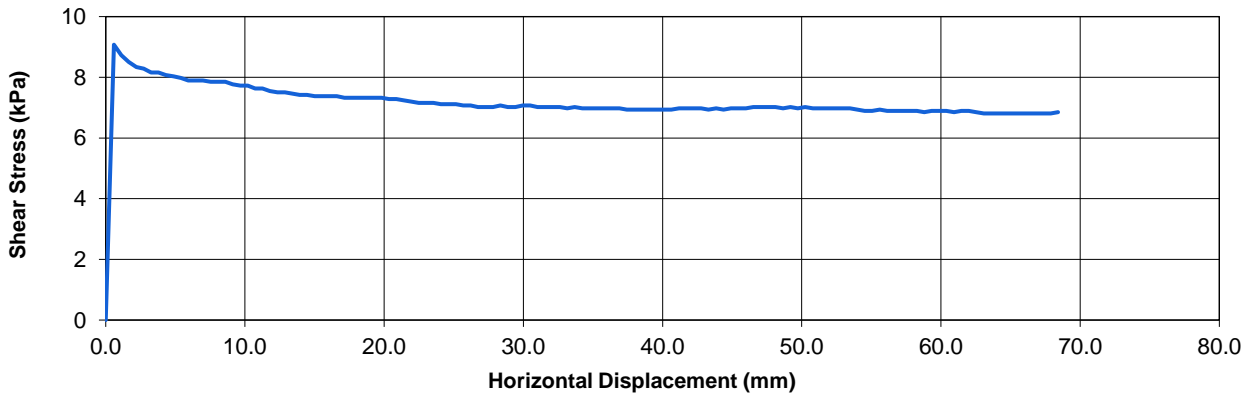
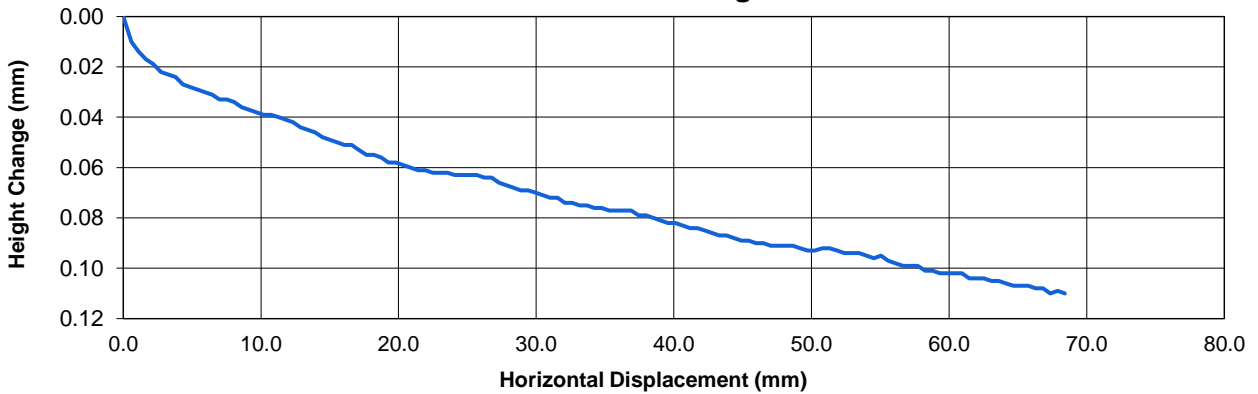
Description:
Brown mottled grey CLAY.


Specimen: 1

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

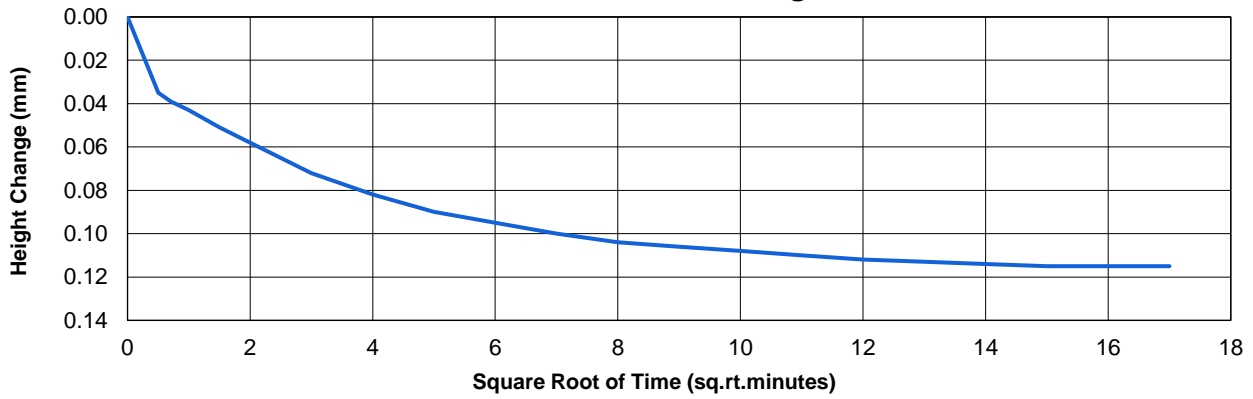
(ring shear apparatus)

Borehole No	ATK_TP06
Sample No	D11
Depth (m)	2.50
Sample Type	D

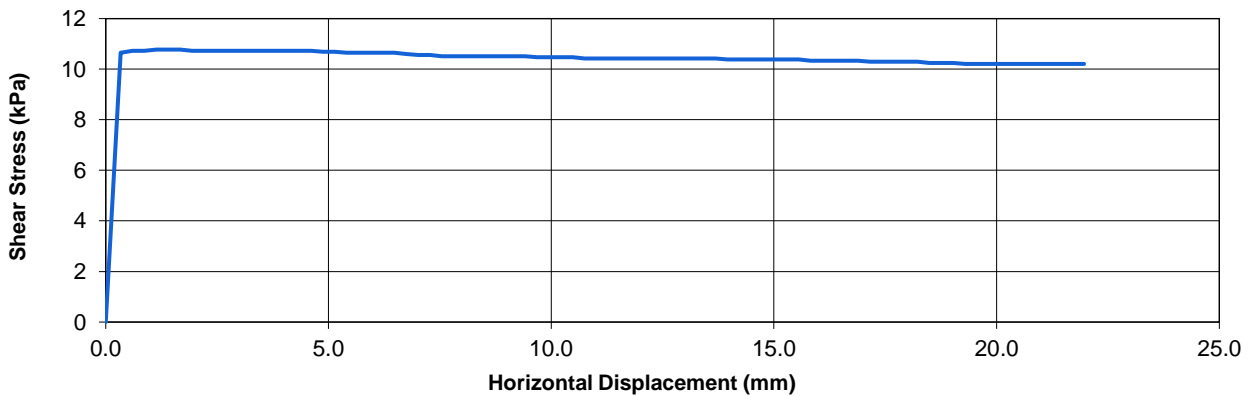
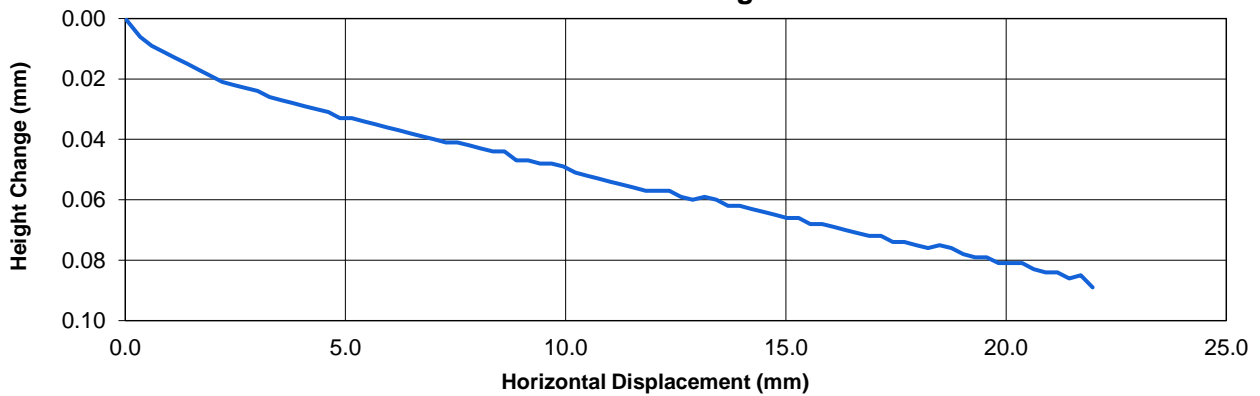
Description:
Brown mottled grey CLAY.

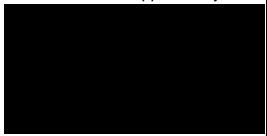
Specimen: 2

Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

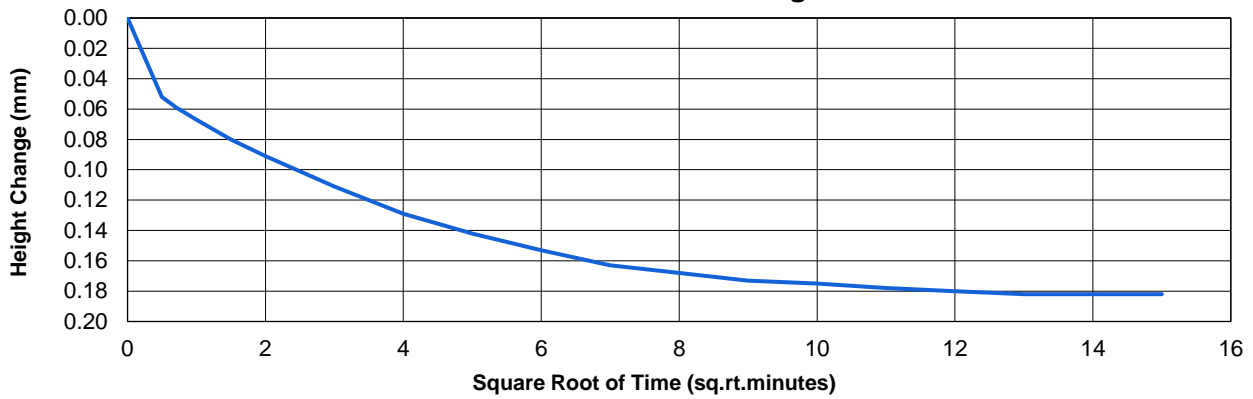
(ring shear apparatus)

Borehole No	ATK_TP06
Sample No	D11
Depth (m)	2.50
Sample Type	D

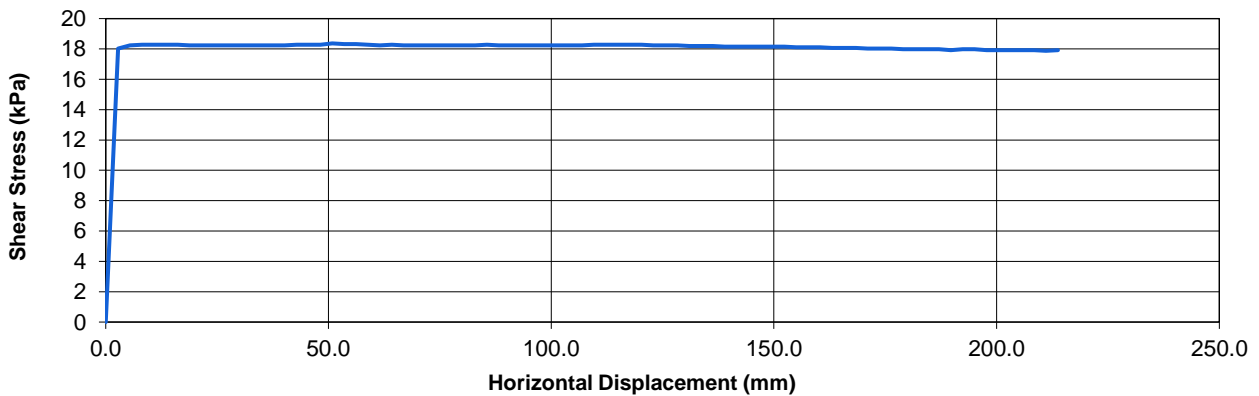
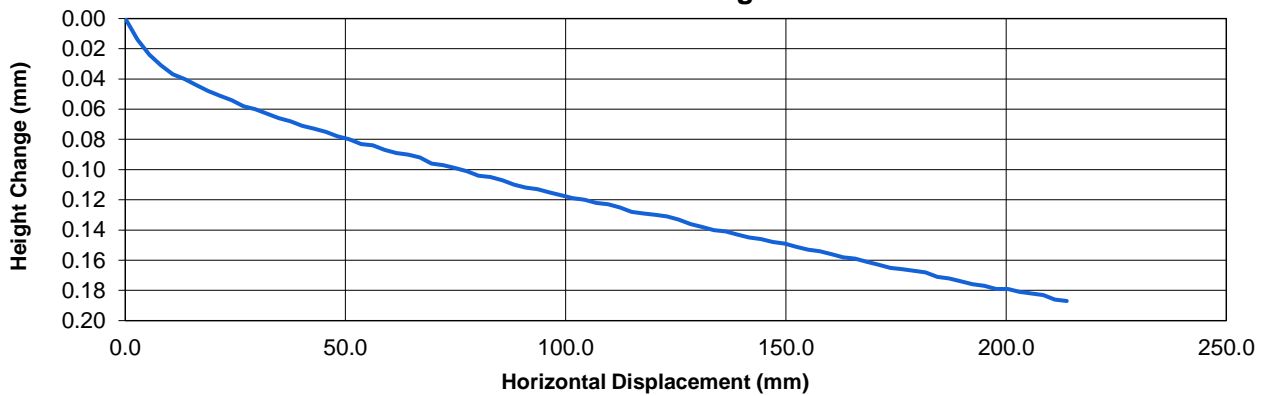
Description:
Brown mottled grey CLAY.

Specimen: 3

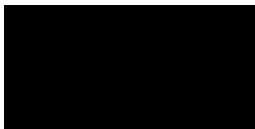
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP07A
 Sample No 104
 Depth (m) 1.00
 Sample Type D

Description:

Brown slightly sandy slightly gravelly CLAY.
 Sand is coarse and gravel fine to medium.

Specimen Details

Natural water content	%	30.4
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.93
Outer Radius	mm	49.94
Initial height	mm	4.88
Initial water content	%	30.4
Initial bulk density	Mg/m ³	1.93
Initial dry density	Mg/m ³	1.48

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	15	30	60
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	15	30	60
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.4	10.0	16.7
Final mean linear displacement	mm	20.6	19.3	28.9

Final Conditions

Final water content	%	32.7
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	16.5
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Notes

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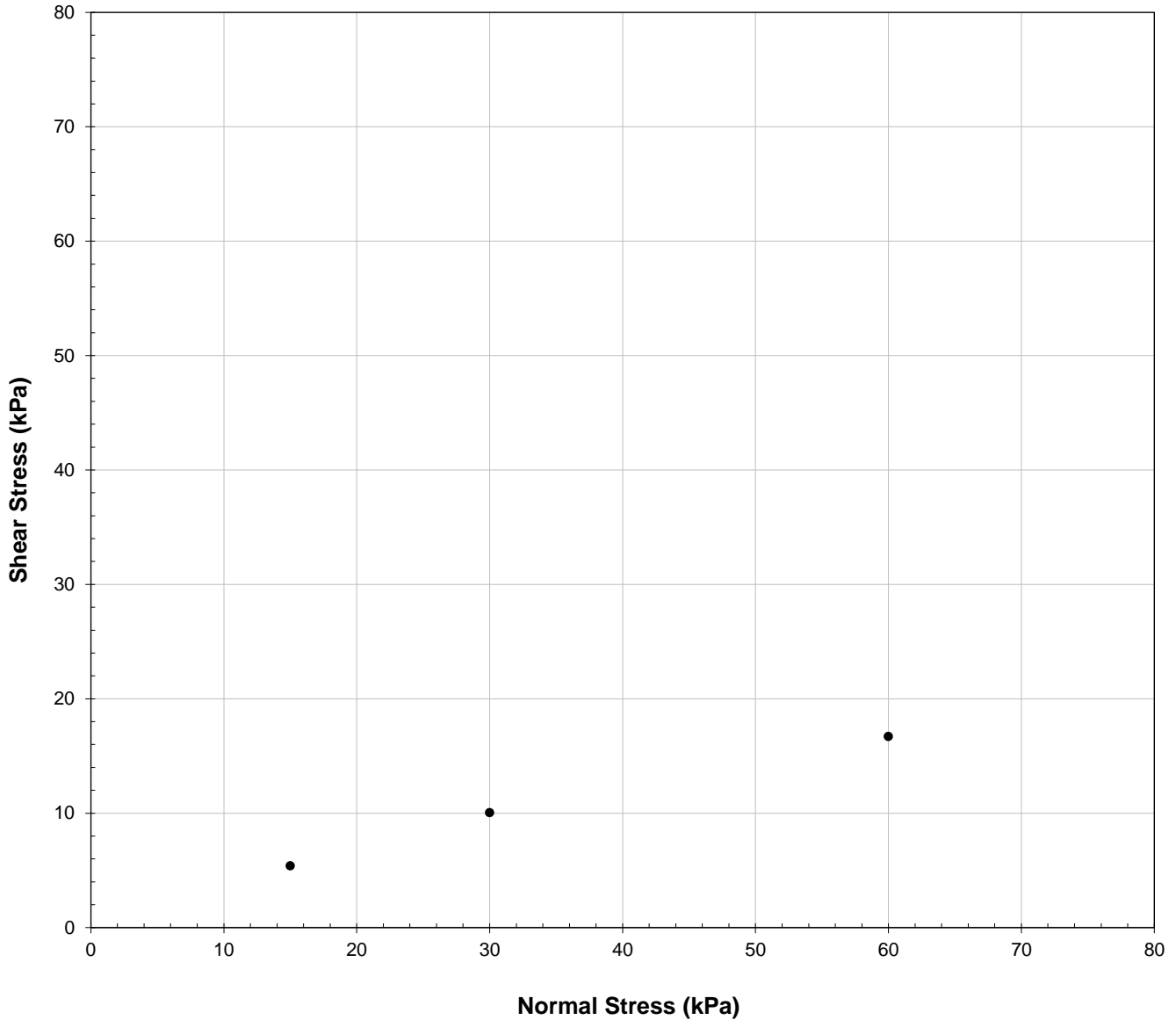
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_TP07A
Sample No	104
Depth (m)	1.00
Sample Type	D

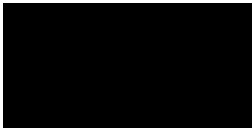
Description:
Brown slightly sandy slightly gravelly CLAY.
Sand is coarse and gravel fine to medium.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 16.5$

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DIRECT SHEAR TEST – RING SHEAR

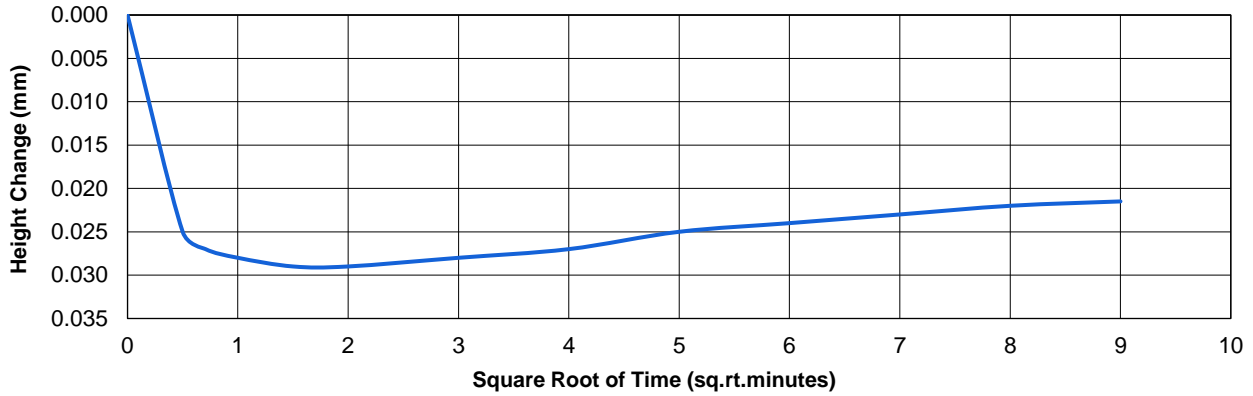
(ring shear apparatus)

Borehole No	ATK_TP07A
Sample No	104
Depth (m)	1.00
Sample Type	D

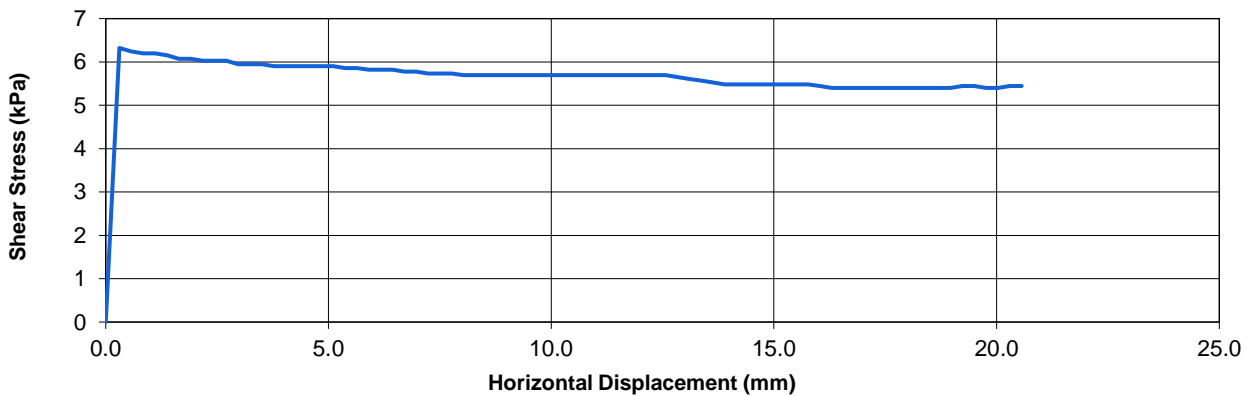
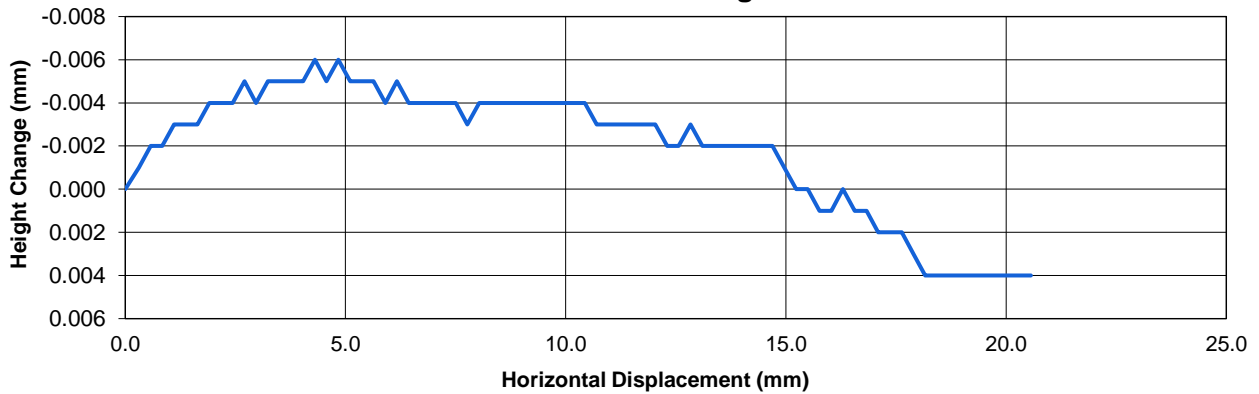
Description:
Brown slightly sandy slightly gravelly CLAY.
Sand is coarse and gravel fine to medium.

Specimen: 1

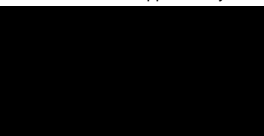
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

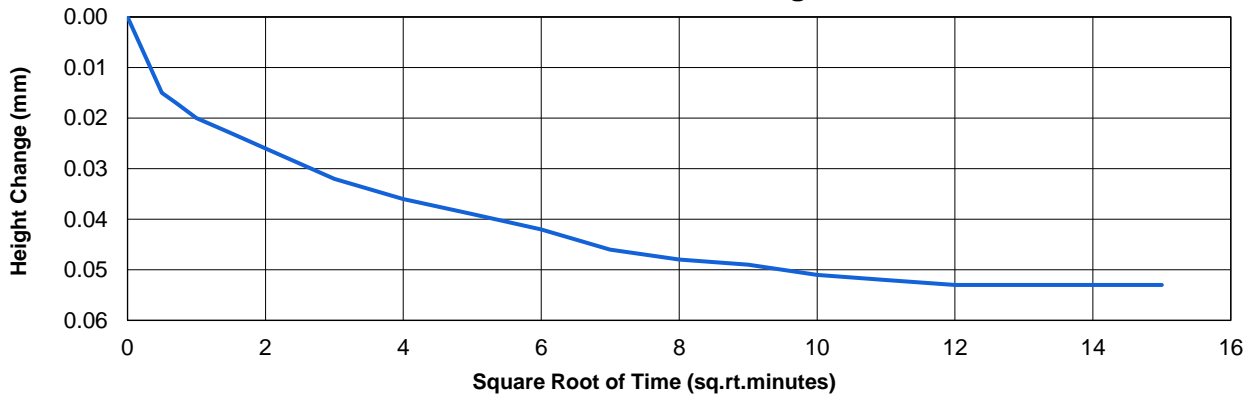
(ring shear apparatus)

Borehole No	ATK_TP07A
Sample No	104
Depth (m)	1.00
Sample Type	D

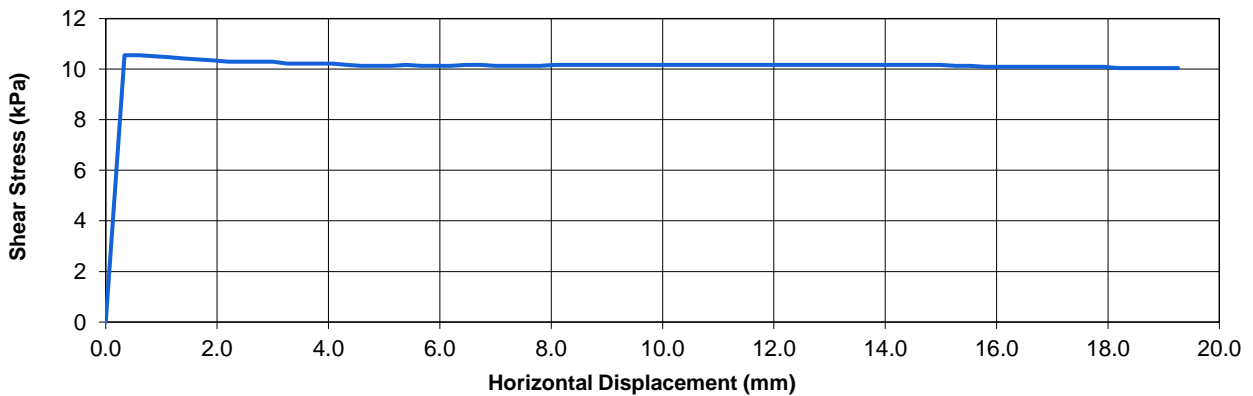
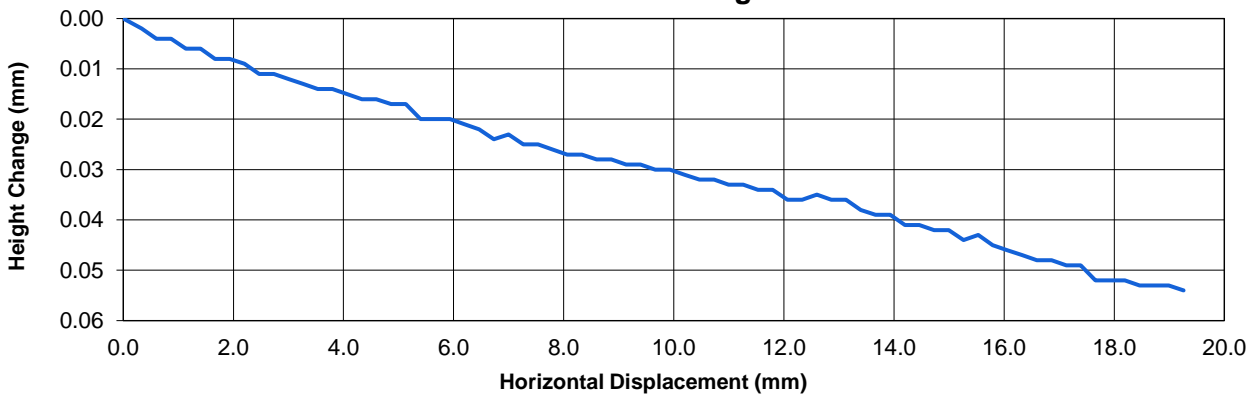
Description:
Brown slightly sandy slightly gravelly CLAY.
Sand is coarse and gravel fine to medium.

Specimen: 2

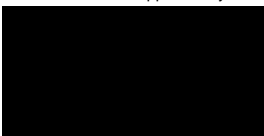
Consolidation Stage



Shear Stage



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DIRECT SHEAR TEST – RING SHEAR

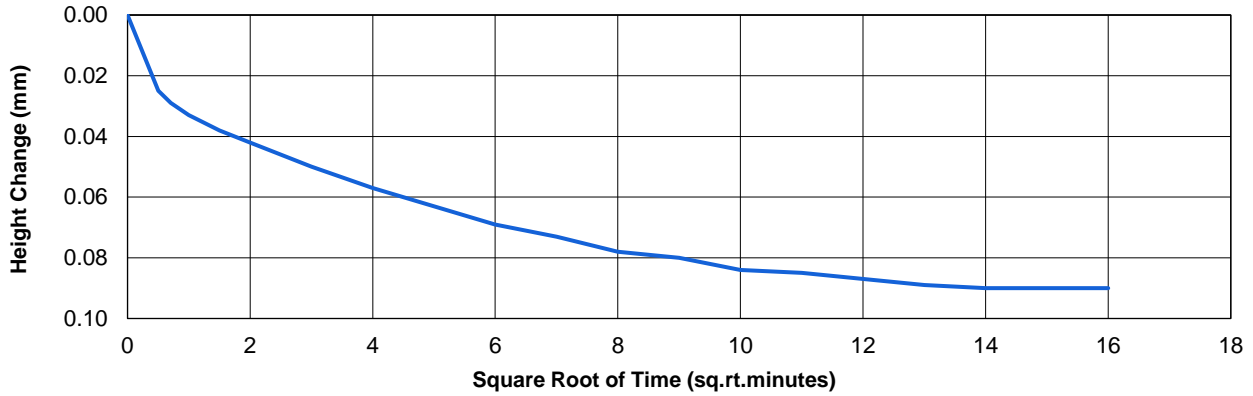
(ring shear apparatus)

Borehole No	ATK_TP07A
Sample No	104
Depth (m)	1.00
Sample Type	D

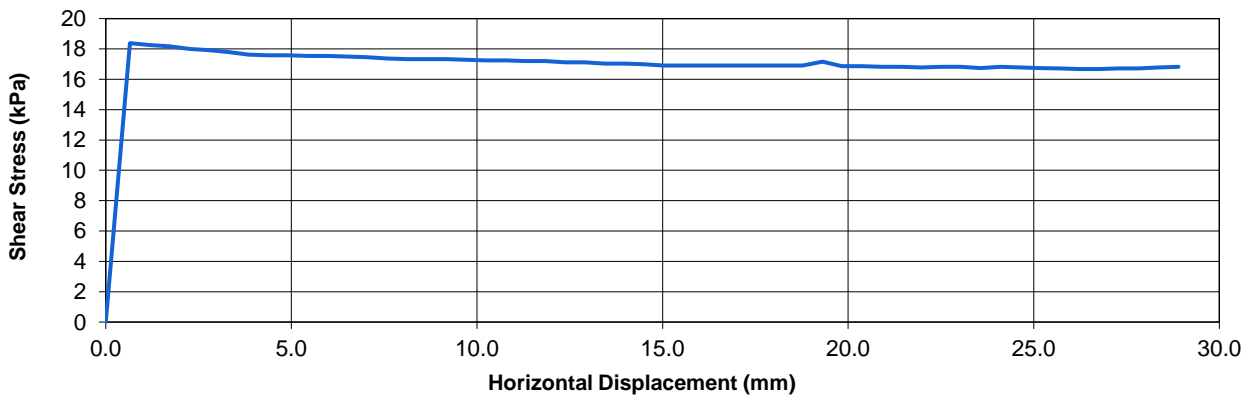
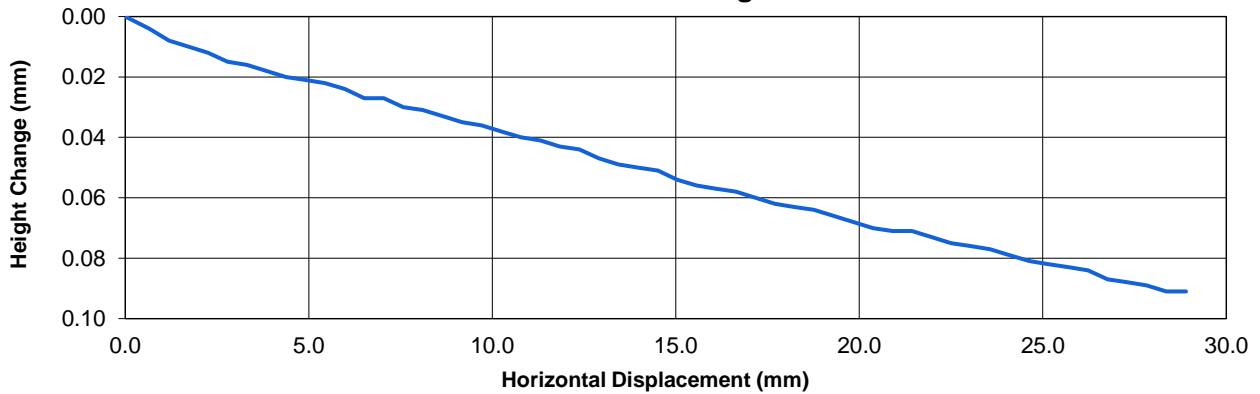
Description:
Brown slightly sandy slightly gravelly CLAY.
Sand is coarse and gravel fine to medium.

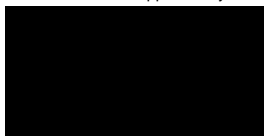
Specimen: 3

Consolidation Stage



Shear Stage



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Project Name:
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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP10
 Sample No 106
 Depth (m) 2.00
 Sample Type D

Description:

Yellowish brown slightly sandy CLAY.

Specimen Details

Natural water content	%	40.2
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	35.02
Outer Radius	mm	49.99
Initial height	mm	4.89
Initial water content	%	40.2
Initial bulk density	Mg/m ³	1.84
Initial dry density	Mg/m ³	1.31

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	20	40	80
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.7	9.0	14.5
Final mean linear displacement	mm	19.8	21.7	18.8

Final Conditions

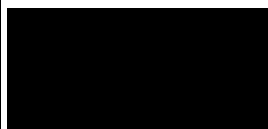
Final water content	%	38.1
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	11
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Notes

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 Checked and Approved by



16/02/2023

Project Number:

GEO / 37073

Project Name:

LYNEHAM BANKS
H2060-22

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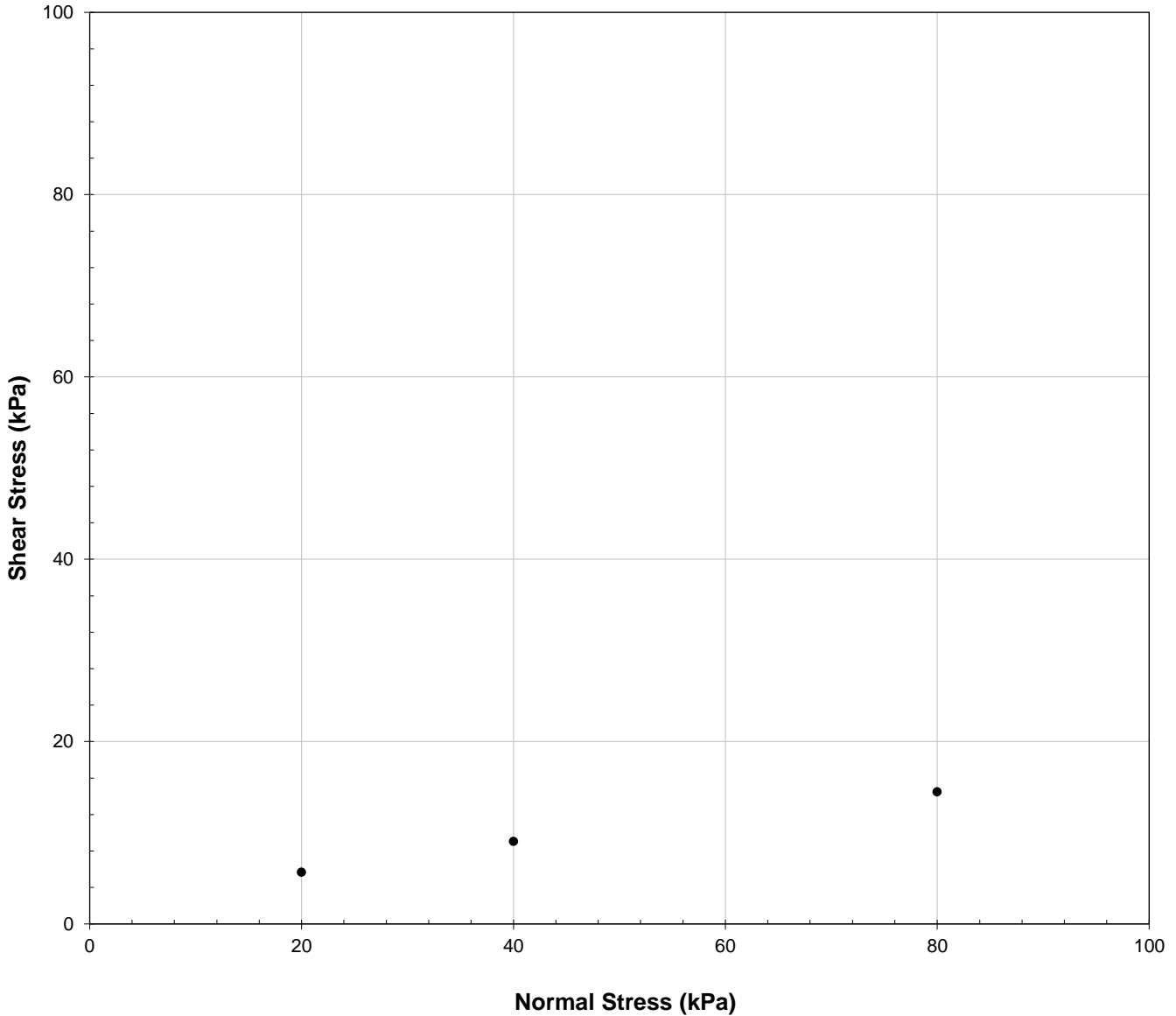
DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No	ATK_TP10
Sample No	106
Depth (m)	2.00
Sample Type	D

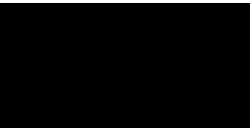
Description:
Yellowish brown slightly sandy CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 11.0$

Tested by SRA
Checked and Approved by



16/02/2023

Project Number:
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Project Name:
**LYNEHAM BANKS
H2060-22**



DIRECT SHEAR TEST – RING SHEAR

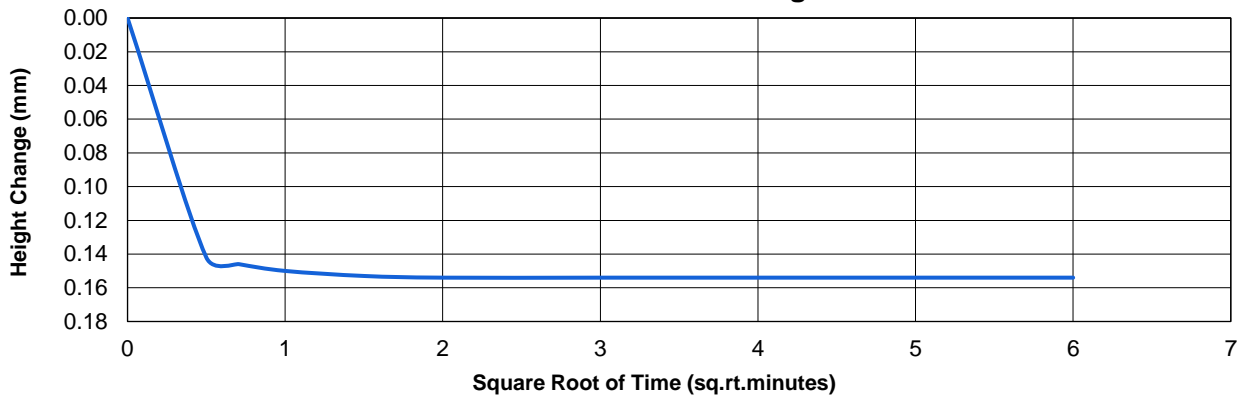
(ring shear apparatus)

Borehole No	ATK_TP10
Sample No	106
Depth (m)	2.00
Sample Type	D

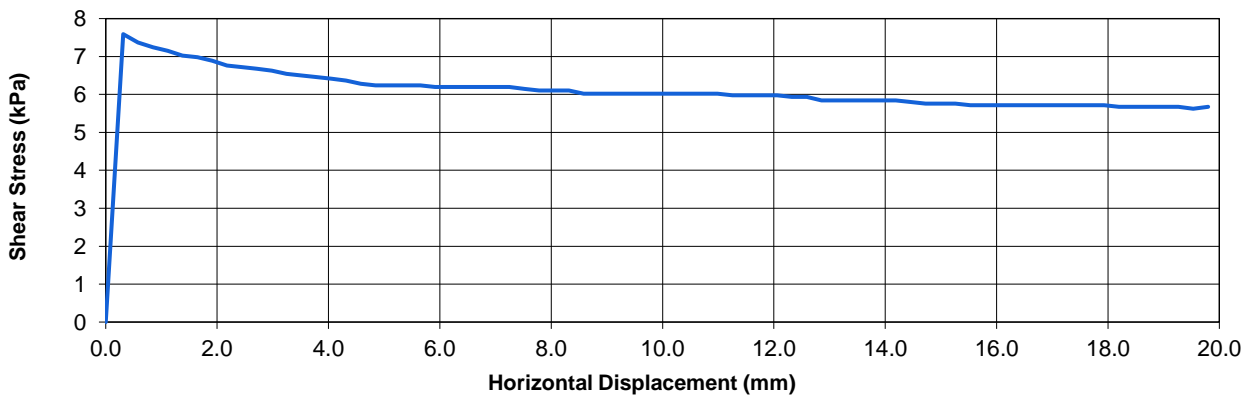
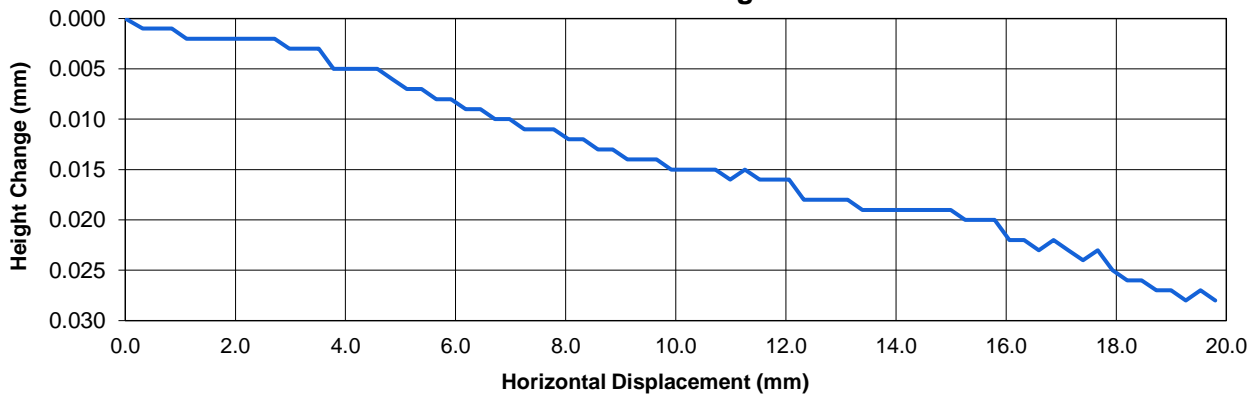
Description:
Yellowish brown slightly sandy CLAY.

Specimen: 1

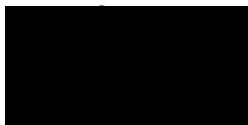
Consolidation Stage



Shear Stage



Tested by SRA
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DIRECT SHEAR TEST – RING SHEAR

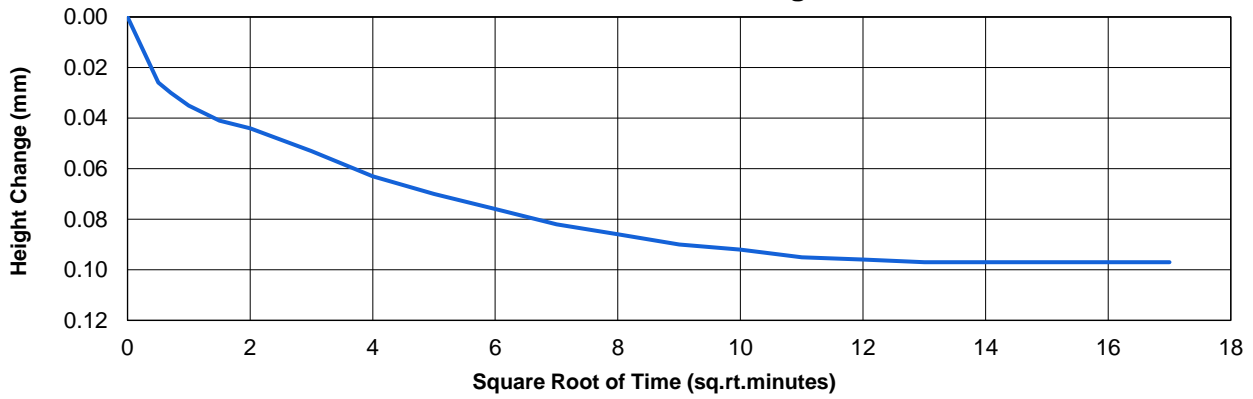
(ring shear apparatus)

Borehole No	ATK_TP10
Sample No	106
Depth (m)	2.00
Sample Type	D

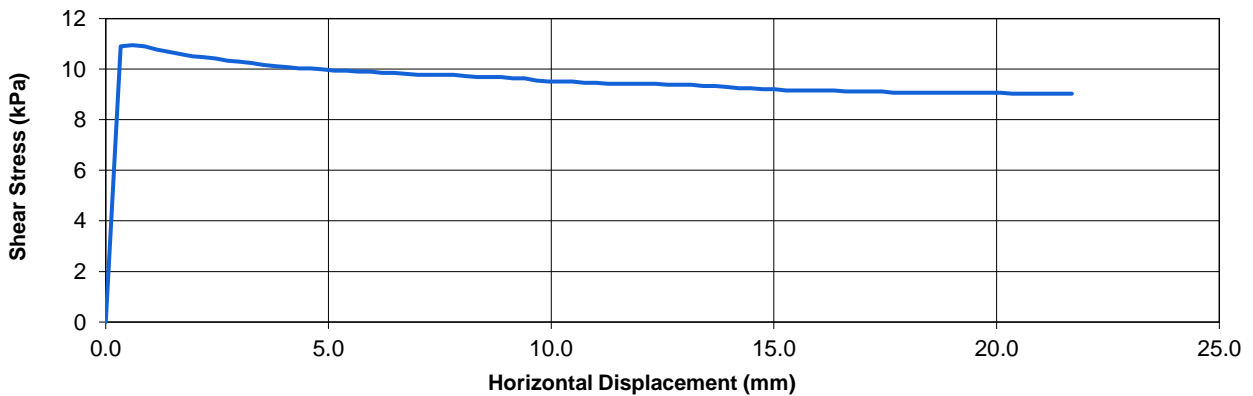
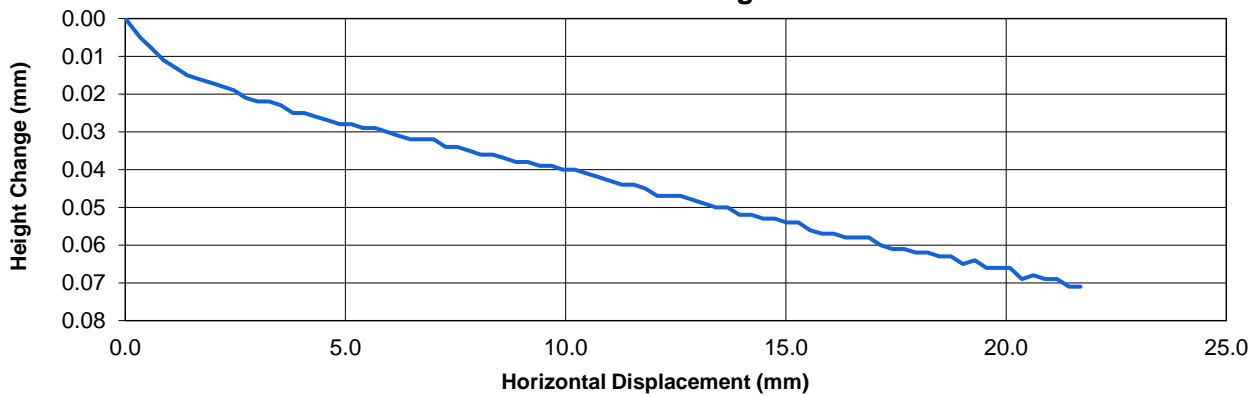
Description:
Yellowish brown slightly sandy CLAY.

Specimen: 2

Consolidation Stage



Shear Stage



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16/02/2023

Project Number:
GEO / 37073

Project Name:
**LYNEHAM BANKS
H2060-22**



DIRECT SHEAR TEST – RING SHEAR

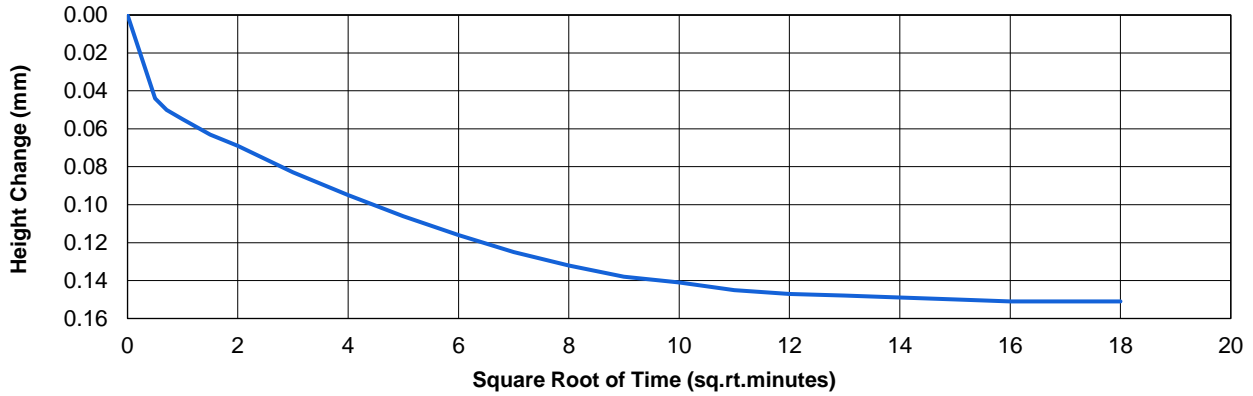
(ring shear apparatus)

Borehole No	ATK_TP10
Sample No	106
Depth (m)	2.00
Sample Type	D

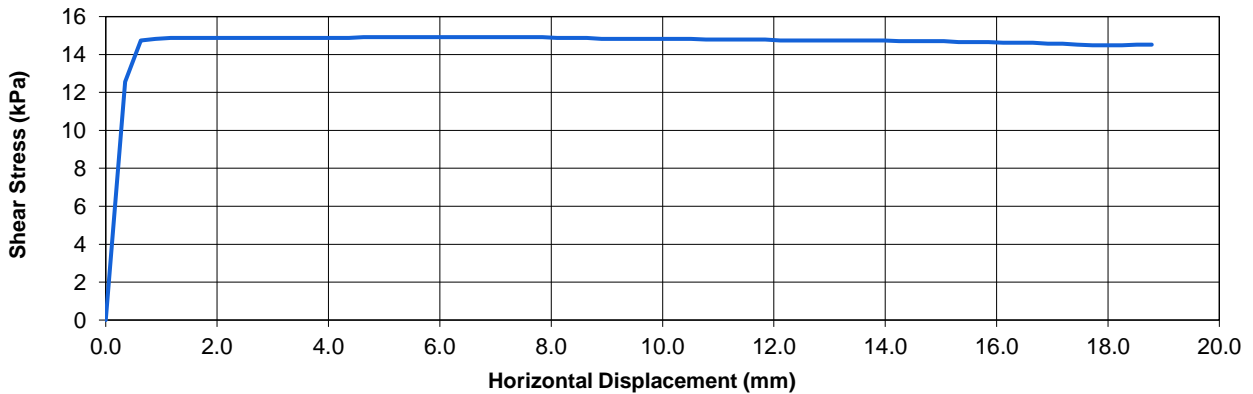
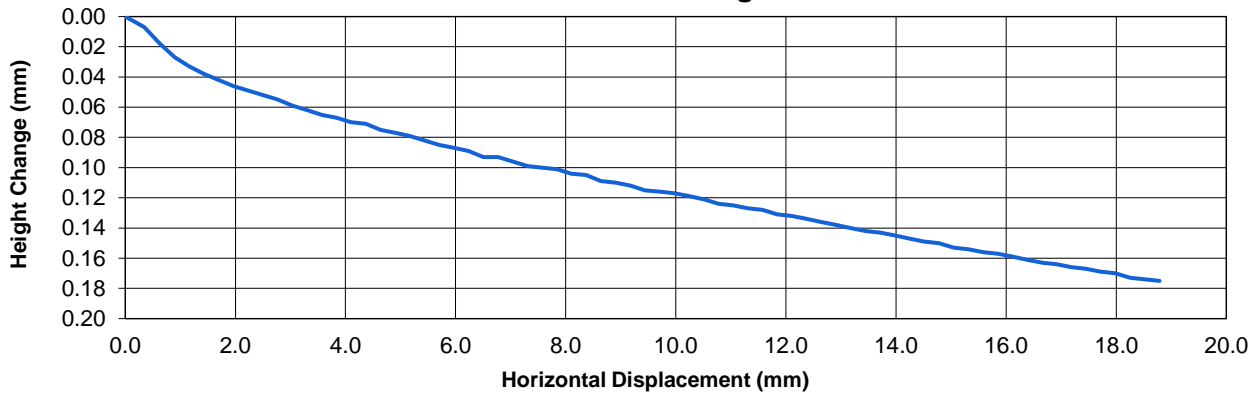
Description:
Yellowish brown slightly sandy CLAY.

Specimen: 3

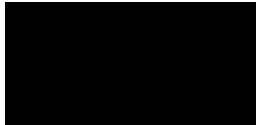
Consolidation Stage



Shear Stage



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16/02/2023

Project Number:
GEO / 37073

Project Name:
**LYNEHAM BANKS
H2060-22**

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1982

DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP11
 Sample No 104
 Depth (m) 1.50
 Sample Type D

Description:

Brown CLAY.

Specimen Details

Natural water content	%	46.9
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	34.85
Outer Radius	mm	49.99
Initial height	mm	5.18
Initial water content	%	46.9
Initial bulk density	Mg/m ³	1.69
Initial dry density	Mg/m ³	1.15

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	15	30	60
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min (±10%) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	15	30	60
Duration	day(s)	1	1	3

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	3.9	6.5	11.3
Final mean linear displacement	mm	20.3	19.2	71.5

Final Conditions

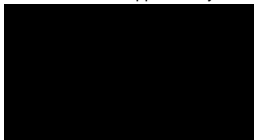
Final water content	%	50.8
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Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	11
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Notes

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21/02/2023

Project Number:

GEO / 37073

Project Name:

LYNEHAM BANKS
H2060-22

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DIRECT SHEAR TEST – RING SHEAR

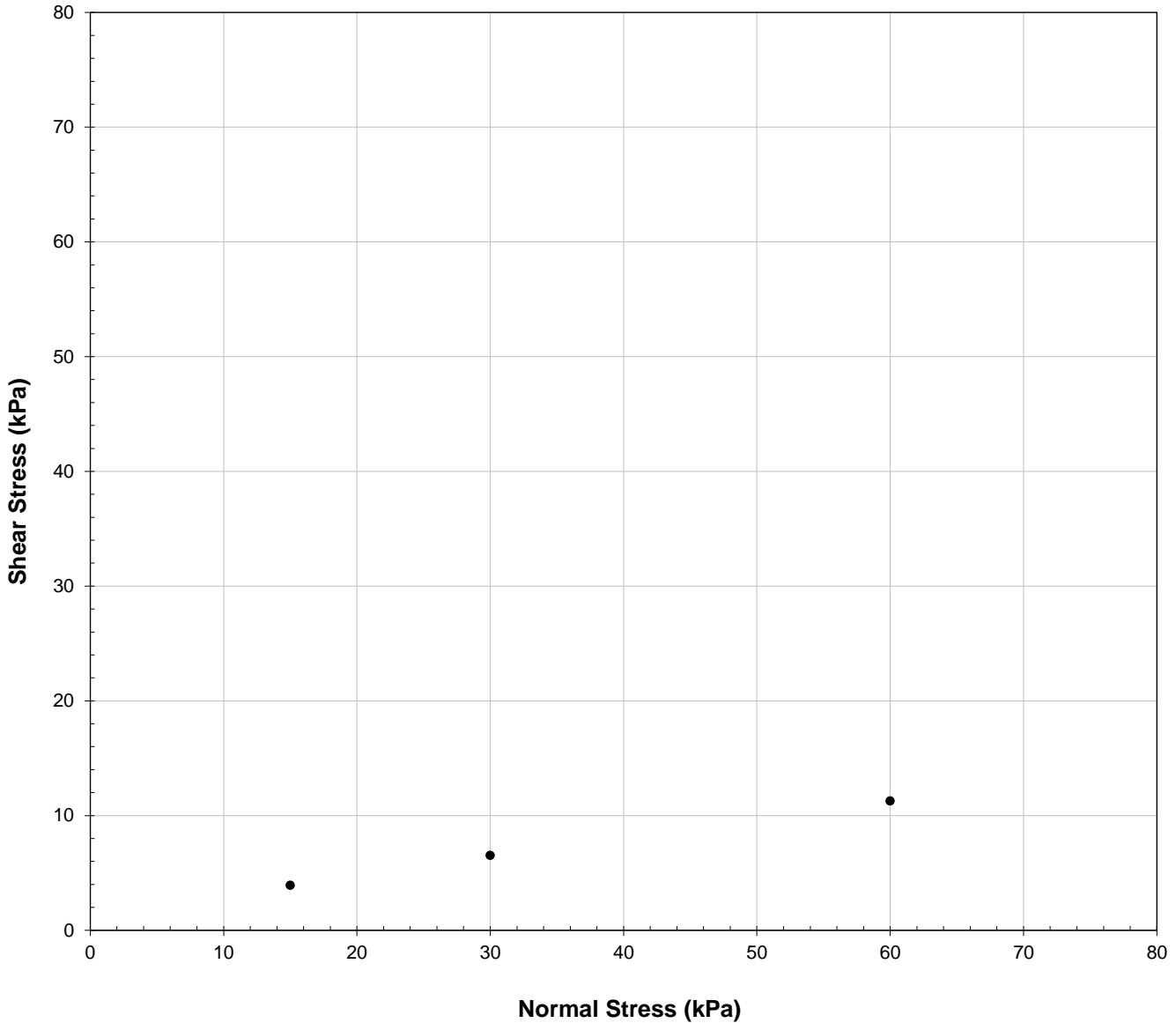
(ring shear apparatus)

Borehole No ATK_TP11
Sample No 104
Depth (m) 1.50
Sample Type D

Description:

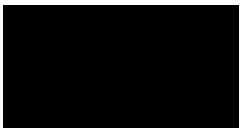
Brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$

$\Phi'_r = 11.0$

Tested by SRA
Checked and Approved by

21/02/2023

Project Number:
GEO / 37073
Project Name:
**LYNEHAM BANKS
H2060-22**



DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

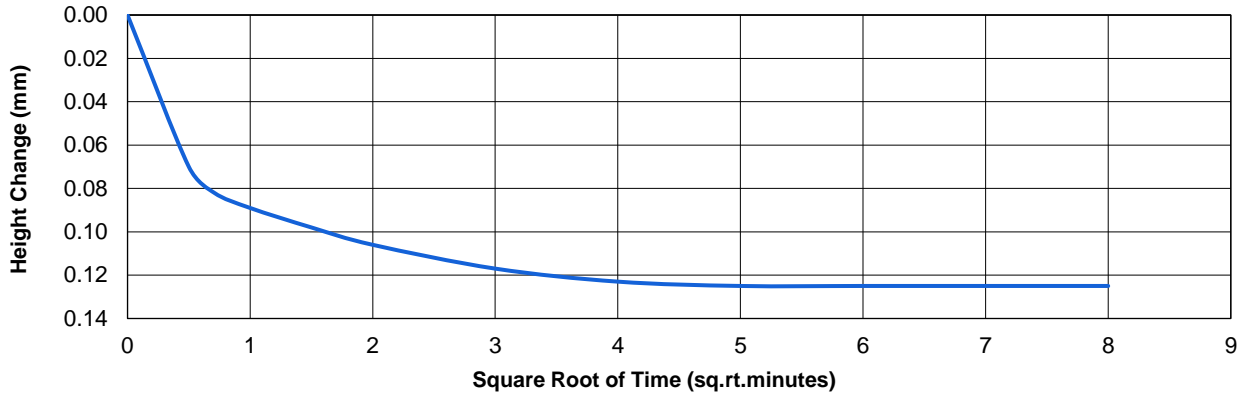
Borehole No	ATK_TP11
Sample No	104
Depth (m)	1.50
Sample Type	D

Description:

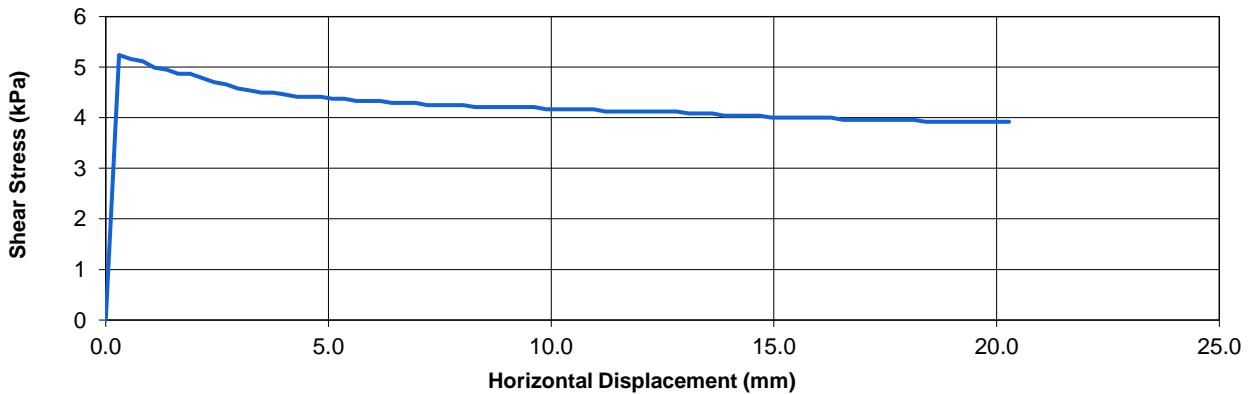
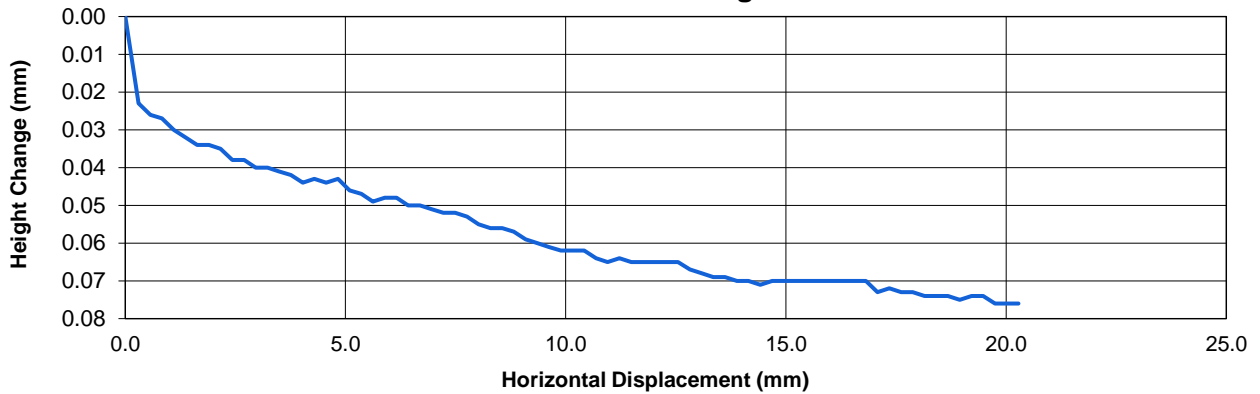
Brown CLAY.

Specimen: 1

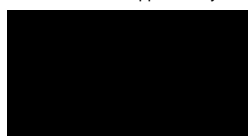
Consolidation Stage



Shear Stage



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21/02/2023

Project Number:
GEO / 37073

Project Name:
**LYNEHAM BANKS
H2060-22**

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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

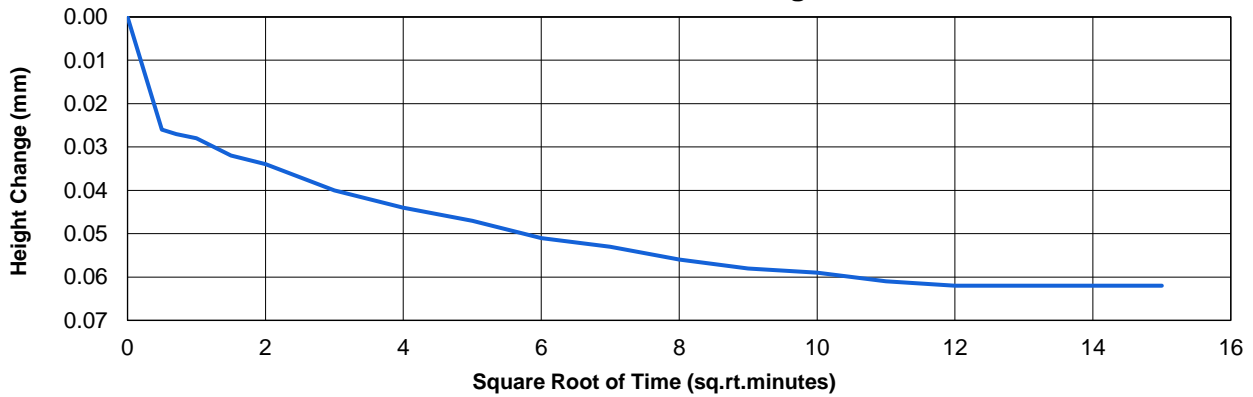
Borehole No	ATK_TP11
Sample No	104
Depth (m)	1.50
Sample Type	D

Description:

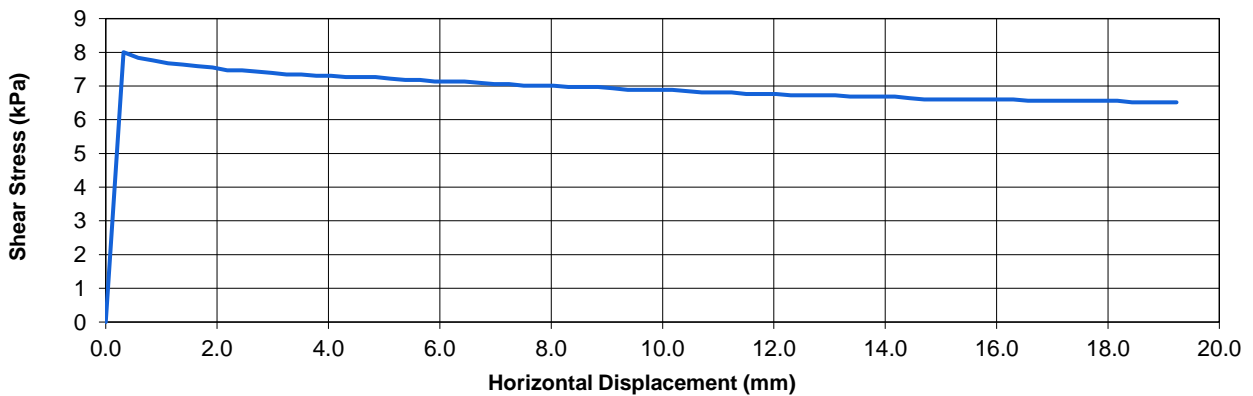
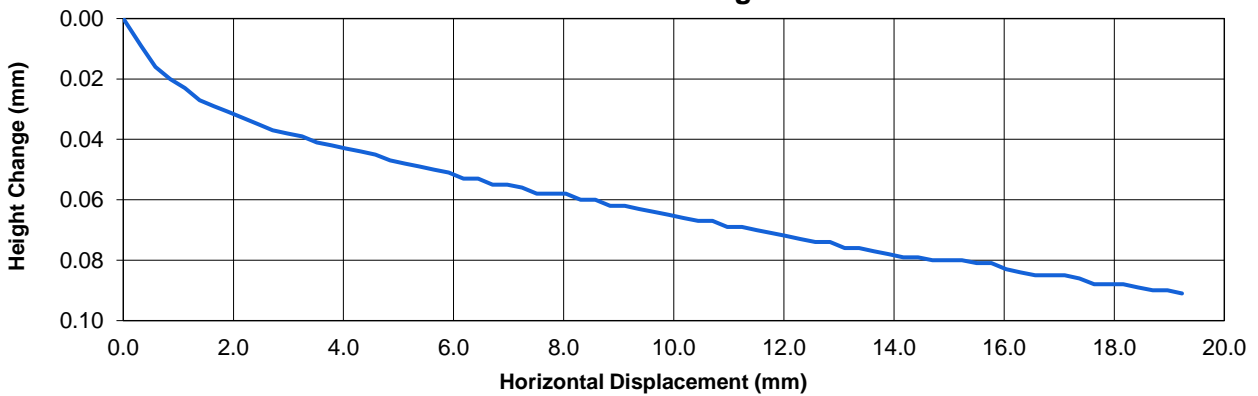
Brown CLAY.

Specimen: 2

Consolidation Stage



Shear Stage



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21/02/2023

Project Number:
GEO / 37073

Project Name:
**LYNEHAM BANKS
H2060-22**



DIRECT SHEAR TEST – RING SHEAR

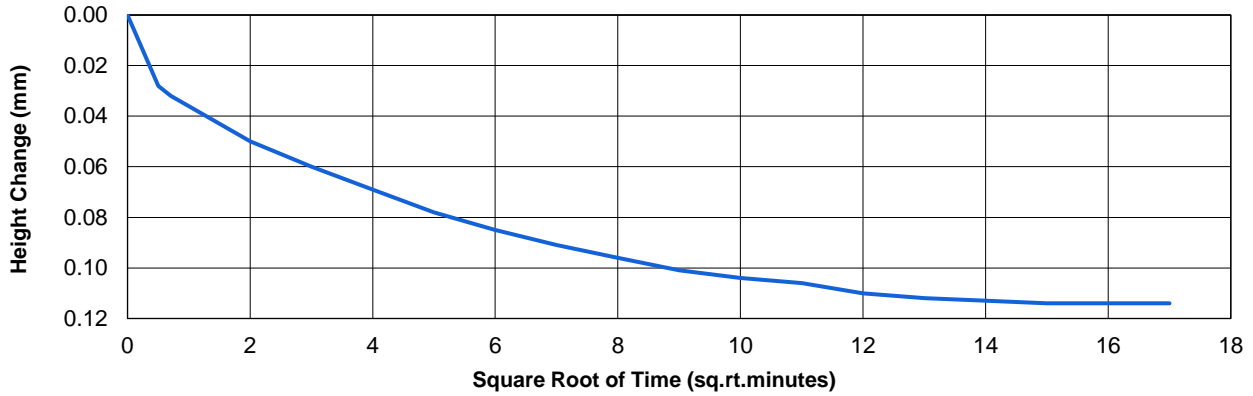
(ring shear apparatus)

Borehole No	ATK_TP11
Sample No	104
Depth (m)	1.50
Sample Type	D

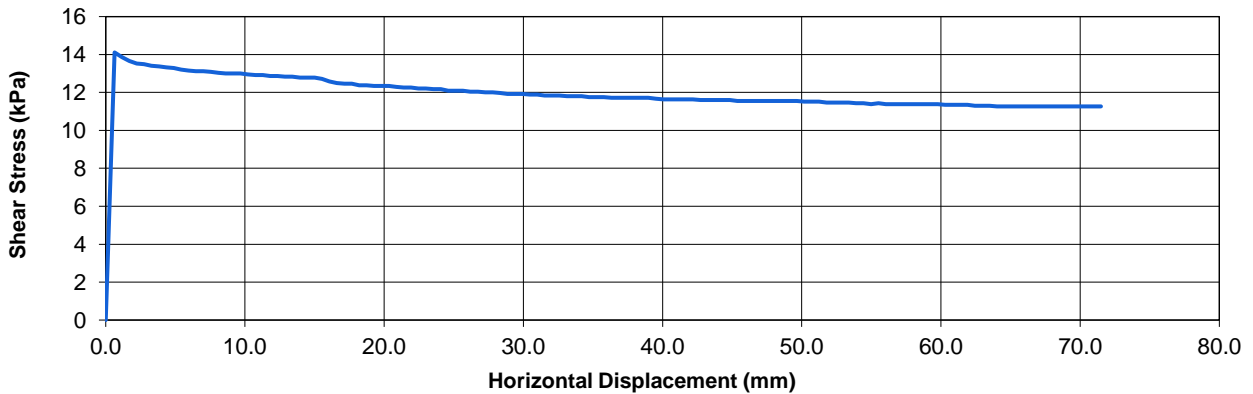
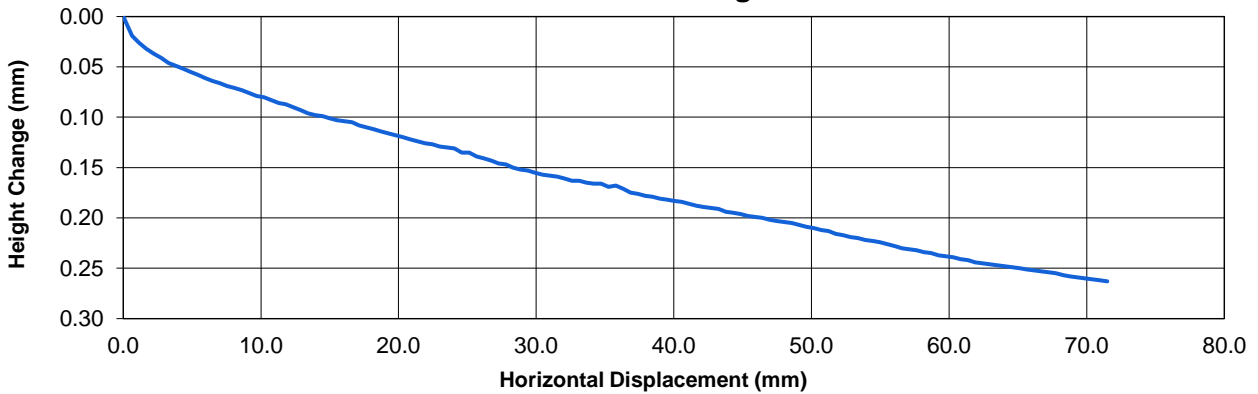
Description:
Brown CLAY.

Specimen: 3


Consolidation Stage



Shear Stage



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21/02/2023

Project Number:
GEO / 37073

Project Name:
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H2060-22**

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DIRECT SHEAR TEST – RING SHEAR

(ring shear apparatus)

Borehole No ATK_TP13
 Sample No 11
 Depth (m) 2.50
 Sample Type D

Description:

Grey mottled brown CLAY.

Specimen Details

Natural water content	%	30.9
Preparation		<1.18 mm material remoulded to maximum achievable density by kneading
Particle density	Mg/m ³	2.70 (assumed)
Inner Radius	mm	35.02
Outer Radius	mm	49.99
Initial height	mm	4.89
Initial water content	%	30.9
Initial bulk density	Mg/m ³	1.92
Initial dry density	Mg/m ³	1.47

Consolidation Stage

Stage Number		1	2	3
Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Pre-Shear

Following consolidation, specimen manually pre-sheared through one rotation at a rate of 360°/min ($\pm 10\%$) and left to stabilize for no less than t100 min before shearing.

Shearing Stage

Applied normal effective stress	kPa	25	50	100
Duration	day(s)	1	1	1

Residual Conditions:

Rate of angular displacement	degs/min	0.024	0.024	0.024
Residual shear stress	kPa	5.0	8.3	17.1
Final mean linear displacement	mm	20.1	19.3	25.7

Final Conditions

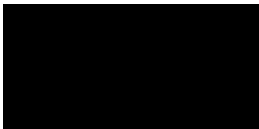
Final water content	%	33.4
---------------------	---	------

Shear Strength Parameters

Angle of Residual Shear Resistance, Φ'_R	deg	9.5
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Notes

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Project Number:

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Project Name:

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H2060-22

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DIRECT SHEAR TEST – RING SHEAR

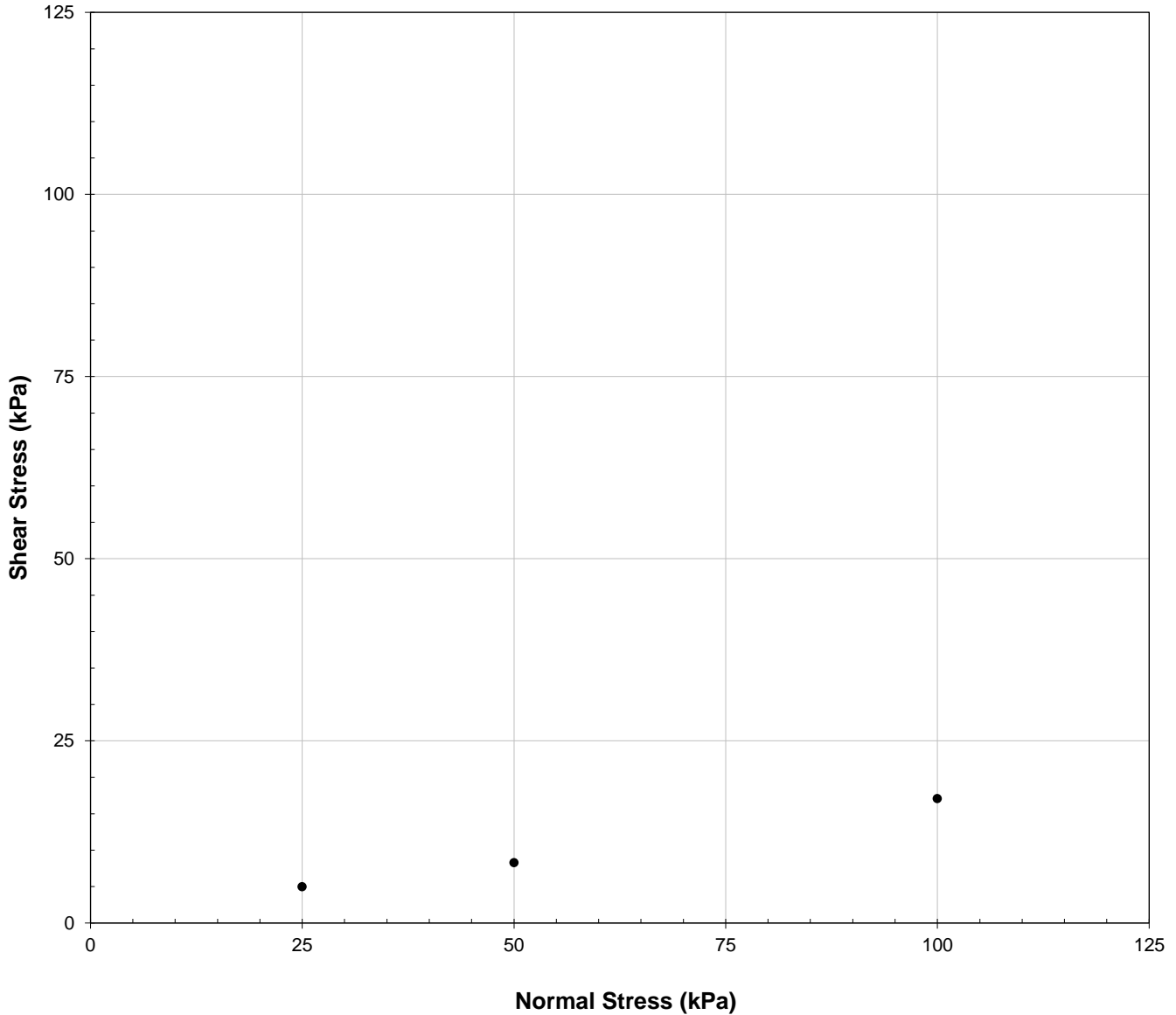
(ring shear apparatus)

Borehole No	ATK_TP13
Sample No	11
Depth (m)	2.50
Sample Type	D

Description:


Grey mottled brown CLAY.

Shear Stress v Normal Stress



Residual: $c'_r = 0$
 $\Phi'_r = 9.5$

Tested by SRA
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21/02/2023

Project Number:
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Project Name:
**LYNEHAM BANKS
H2060-22**



DIRECT SHEAR TEST – RING SHEAR

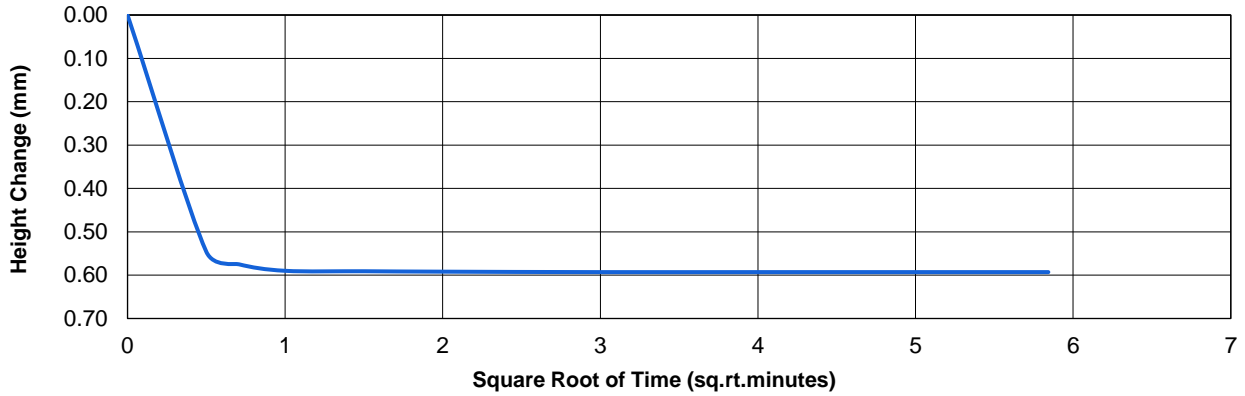
(ring shear apparatus)

Borehole No	ATK_TP13
Sample No	11
Depth (m)	2.50
Sample Type	D

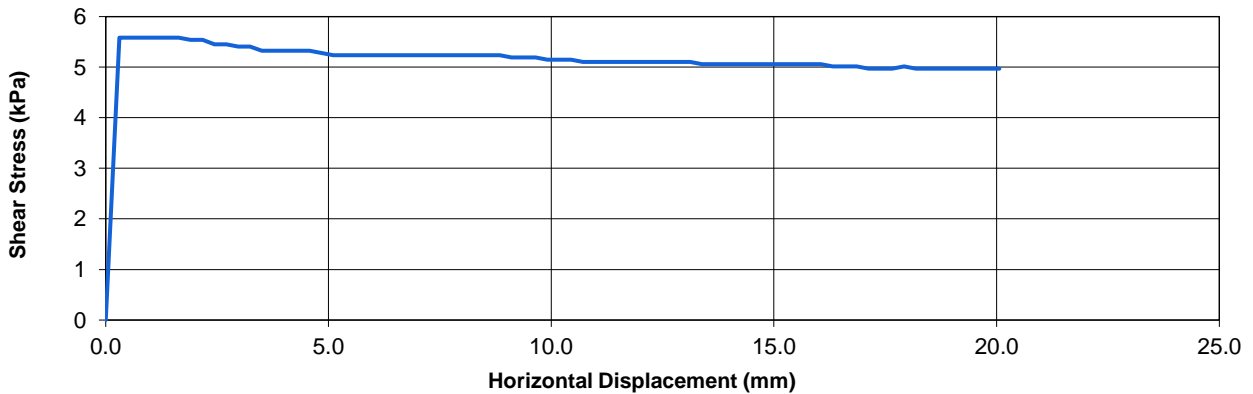
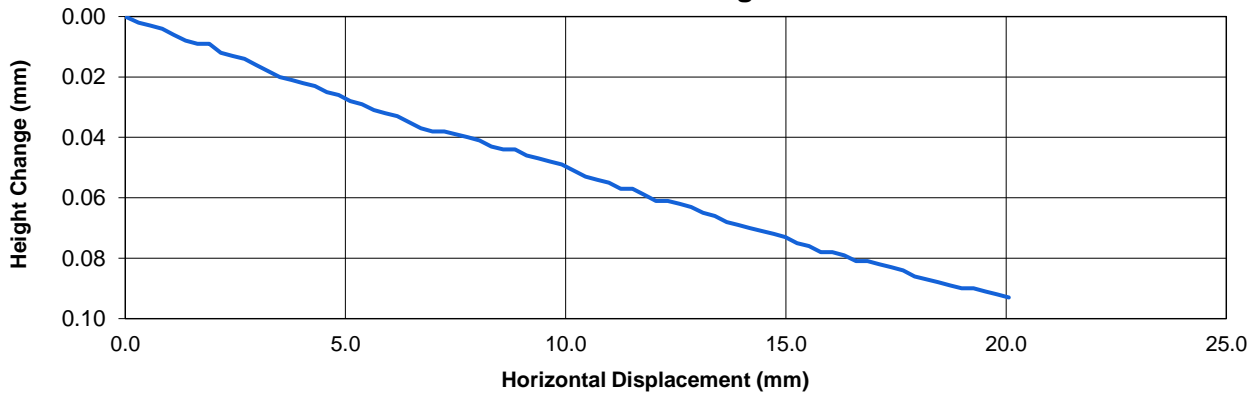
Description:
Grey mottled brown CLAY.


Specimen: 1

Consolidation Stage



Shear Stage



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21/02/2023

Project Number:
GEO / 37073

Project Name:
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H2060-22**



DIRECT SHEAR TEST – RING SHEAR

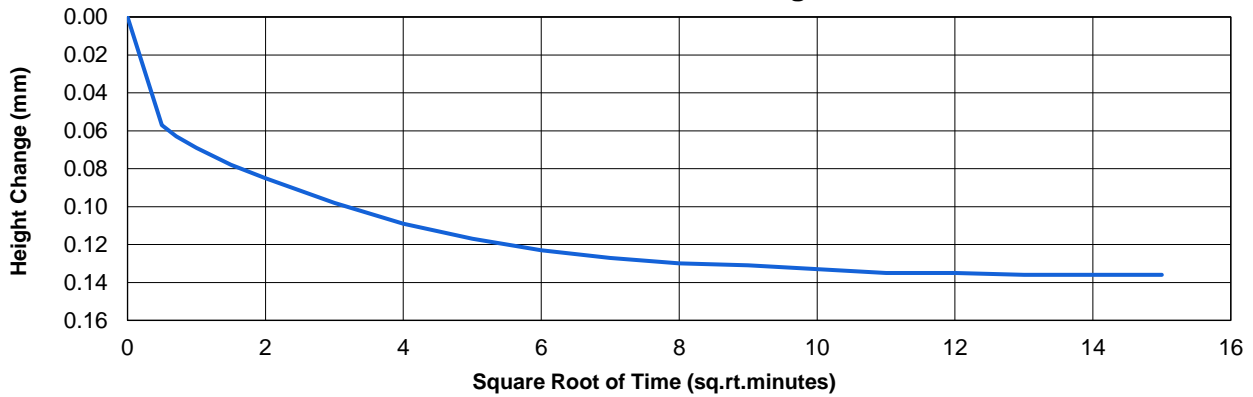
(ring shear apparatus)

Borehole No	ATK_TP13
Sample No	11
Depth (m)	2.50
Sample Type	D

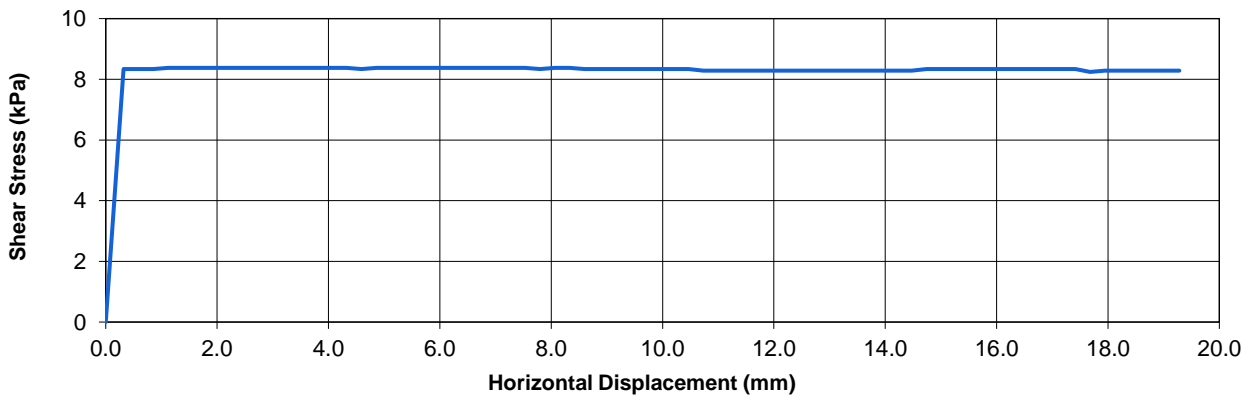
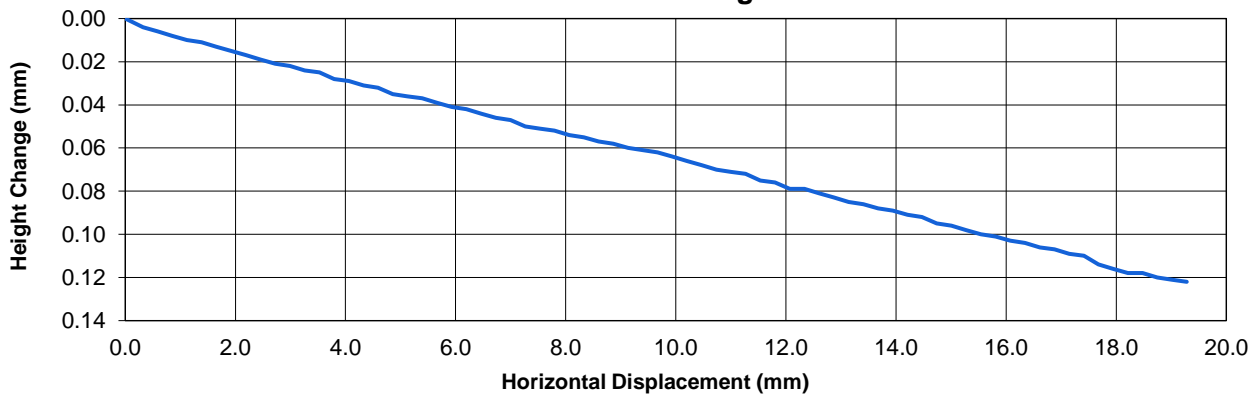
Description:
Grey mottled brown CLAY.

Specimen: 2


Consolidation Stage



Shear Stage



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21/02/2023

Project Number:
GEO / 37073

Project Name:
**LYNEHAM BANKS
H2060-22**



DIRECT SHEAR TEST – RING SHEAR

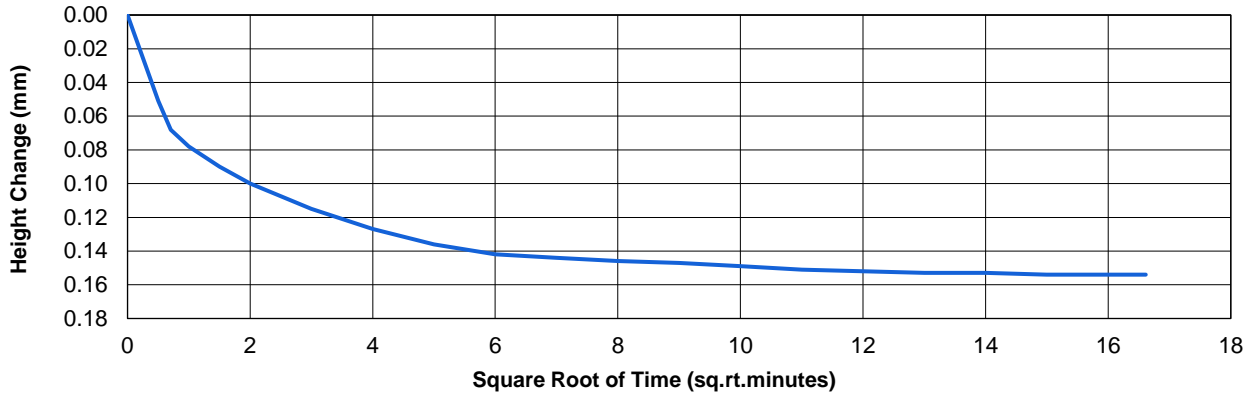
(ring shear apparatus)

Borehole No	ATK_TP13
Sample No	11
Depth (m)	2.50
Sample Type	D

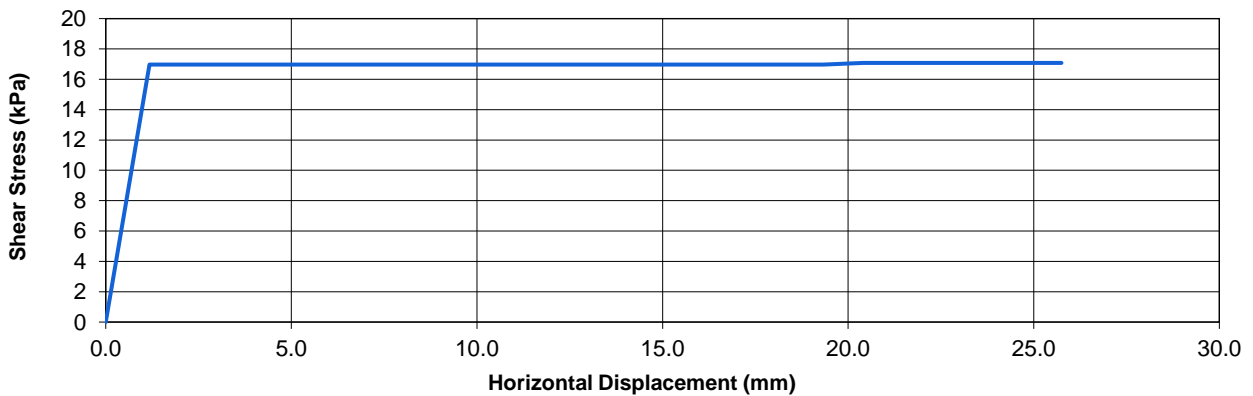
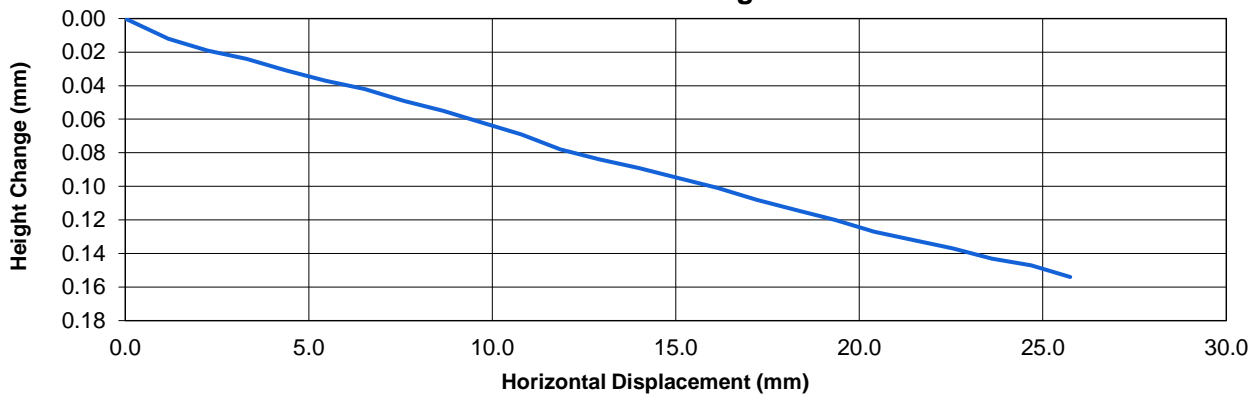
Description:
Grey mottled brown CLAY.

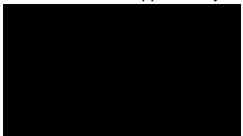
Specimen: 3

Consolidation Stage



Shear Stage



Tested by SRA
Checked and Approved by

21/02/2023

Project Number:
GEO / 37073

Project Name:
**LYNEHAM BANKS
H2060-22**





Final Report

Report No.: 22-44672-1
Initial Date of Issue: 01-Dec-2022
Client: SOCOTEC
Client Address: Unit 15 Crosby Yard Industrial Estate
Wildmill
Bridgend
CF31 1JZ

Contact(s): [REDACTED]

Project: H2060-22 Lyneham Banks

Quotation No.: Q22-29497 **Date Received:** 21-Nov-2022

Order No.: H5067 **Date Instructed:** 21-Nov-2022

No. of Samples: 10

Turnaround (Wkdays): 7 **Results Due:** 29-Nov-2022

Date Approved: 01-Dec-2022

Approved By:
[REDACTED]

Details: [REDACTED] Technical
Manager

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC		Chemtest Job No.:												
Quotation No.: Q22-29497		Chemtest Sample ID.:												
Order No.: H5067		Client Sample Ref.:												
		Sample Location:												
		Sample Type:												
		Top Depth (m):												
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	19	19	23	26	21	12	10	1.4	1.8	29
pH (2.5:1)	N	2010		4.0	[A] 8.4	[A] 8.2	[A] 7.8		[A] 8.4	[A] 8.4	[A] 8.4	[A] 8.4	[A] 8.2	[A] 8.1
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] < 0.010	[A] 0.089	[A] 0.33		[A] < 0.010	[A] 0.041	[A] 0.10	[A] < 0.010	[A] 0.28	[A] 0.27
Total Sulphur	U	2175	%	0.010	[A] 0.11	[A] 1.2	[A] 0.21		[A] 0.057	[A] 0.013	[A] 0.047	[A] 0.081	[A] 1.1	[A] 1.1
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 0.037	[A] 0.42	[A] 0.15		[A] 0.062	[A] 0.031	[A] 0.070	[A] 0.057	[A] 0.24	[A] 0.23
Organic Matter	U	2625	%	0.40				[A] 3.2						

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1549669	12		ATK_TP02		A	Plastic Tub 1000g
1549670	12		ATK_TP03		A	Plastic Tub 1000g
1549671	14		ATK_TP05		A	Plastic Tub 1000g
1549672	11		ATK_TP06		A	Plastic Tub 1000g
1549673	14		ATK_TP06		A	Plastic Tub 1000g
1549674	106		ATK_TP07A		A	Plastic Tub 1000g
1549675	107		ATK_TP10		A	Plastic Tub 1000g
1549676	108		ATK_TP11		A	Plastic Tub 1000g
1549677	12		ATK_TP13		A	Plastic Tub 1000g
1549678	15		ATK_TP17		A	Plastic Tub 1000g

Test Methods

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

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 22-45009-1
Initial Date of Issue: 30-Nov-2022
Client: SOCOTEC
Client Address: Unit 15 Crosby Yard Industrial Estate
Wildmill
Bridgend
CF31 1JZ

Contact(s): [REDACTED]

Project: H2060-22 Lyneham Banks

Quotation No.: Q22-29497 **Date Received:** 23-Nov-2022

Order No.: H/5067 **Date Instructed:** 23-Nov-2022

No. of Samples: 1

Turnaround (Wkdays): 7 **Results Due:** 01-Dec-2022

Date Approved: 30-Nov-2022

Approved By:
[REDACTED]

Details: [REDACTED] Technical
Manager

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC	Chemtest Job No.: 22-45009				
Quotation No.: Q22-29497	Chemtest Sample ID.: 1550975				
Order No.: H/5067	Client Sample Ref.: 109				
	Sample Location: ATK_BH14				
	Sample Type: SOIL				
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	12
pH (2.5:1)	N	2010		4.0	[A] 7.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 0.20
Total Sulphur	U	2175	%	0.010	[A] 2.4
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 1.8

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1550975	109		ATK_BH14		A	Plastic Tub 1000g

Test Methods

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

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 22-45224-1
Initial Date of Issue: 04-Dec-2022
Client: SOCOTEC
Client Address: Unit 15 Crosby Yard Industrial Estate
Wildmill
Bridgend
CF31 1JZ

Contact(s): [REDACTED]

Project: H2060-22 Lyneham Banks

Quotation No.: Q22-29497 **Date Received:** 24-Nov-2022

Order No.: H/5067 **Date Instructed:** 24-Nov-2022

No. of Samples: 3

Turnaround (Wkdays): 7 **Results Due:** 02-Dec-2022

Date Approved: 04-Dec-2022

Approved By:
[REDACTED]

Details: [REDACTED] Technical
Manager

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC		Chemtest Job No.:		22-45224	22-45224	22-45224
Quotation No.: Q22-29497		Chemtest Sample ID.:		1551900	1551901	1551902
Order No.: H/5067		Client Sample Ref.:		105	108	117
		Sample Location:		ATK_BH03	ATK_BH03	ATK_BH03
		Sample Type:		SOIL	SOIL	SOIL
		Top Depth (m):		2.7	4	11
Determinand	Accred.	SOP	Units	LOD		
Moisture	N	2030	%	0.020	26	16
pH (2.5:1)	N	2010		4.0	[A] 7.9	[A] 8.4
Sulphate (2:1 Water Soluble) as SO ₄	U	2120	g/l	0.010	[A] 0.67	[A] 0.18
Total Sulphur	U	2175	%	0.010	[A] 0.070	[A] 1.0
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 0.18	[A] 0.16

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1551900	105		ATK_BH03		A	Plastic Tub 1000g
1551901	108		ATK_BH03		A	Plastic Tub 1000g
1551902	117		ATK_BH03		A	Plastic Tub 1000g

Test Methods

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

Report Information

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N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 22-48947-1
Initial Date of Issue: 10-Jan-2023
Client: SOCOTEC
Client Address: Unit 15 Crosby Yard Industrial Estate
Wildmill
Bridgend
CF31 1JZ

Contact(s): [REDACTED]

Project: H2060-22 Lyneham Banks

Quotation No.: Q22-29497 **Date Received:** 22-Dec-2022

Order No.: H/5067 **Date Instructed:** 22-Dec-2022

No. of Samples: 24

Turnaround (Wkdays): 7 **Results Due:** 06-Jan-2023

Date Approved: 10-Jan-2023

Approved By:
[REDACTED]

Details: [REDACTED] Technical
Manager

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC		Chemtest Job No.:												
Quotation No.: Q22-29497		Chemtest Sample ID.:												
Order No.: H/5067		Client Sample Ref.:												
Sample Location:		ATK_BH04 ATK_BH04 ATK_BH08 ATK_BH09 ATK_BH09 ATK_BH11 ATK_BH11 ATK_BH15 ATK_BH15 ATK_BH15												
Sample Type:		SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL												
Top Depth (m):		6.60 13.50 11.60 1.20 11.60 5.00 12.90 1.00 2.45 3.00												
Bottom Depth (m):		13.50 11.90 1.50 11.90 5.20 13.25 2.50												
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	15	11	16	24	14	12	15	23	20	19
pH (2.5:1)	N	2010		4.0	[A] 8.9	[A] 8.5	[A] 9.1	[A] 8.3	[A] 9.1	[A] 8.3	[A] 8.9			[A] 8.2
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 0.19	[A] 0.091	[A] 0.25	[A] 0.058	[A] 0.13	[A] 0.22	[A] 0.20			[A] 0.044
Total Sulphur	U	2175	%	0.010	[A] 0.91	[A] 1.2	[A] 2.6	[A] 0.091	[A] 0.22	[A] 0.074	[A] 0.76			[A] 0.33
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 0.074	[A] 0.074	[A] 0.12	[A] 0.074	[A] 0.21	[A] 0.14	[A] 0.055			[A] 0.090
Organic Matter	U	2625	%	0.40								[A] 0.89	[A] 3.5	

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC	Chemtest Job No.:				22-48947	22-48947	22-48947	22-48947	22-48947	22-48947	22-48947	22-48947	22-48947	
Quotation No.: Q22-29497	Chemtest Sample ID.:				1568519	1568520	1568521	1568522	1568523	1568524	1568525	1568526	1568527	1568528
Order No.: H/5067	Client Sample Ref.:				105	115	7		106		101	103		105
	Sample Location:				ATK_BH15	ATK_BH15	ATK_BH08	ATK_BH10	ATK_BH10	ATK_BH11	ATK_BH12	ATK_BH12	ATK_BH12	ATK_BH16
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				6.00	14.60	2.70	11.20	4.00	1.20	0.90	2.90	6.45	2.90
	Bottom Depth (m):					14.90		11.65		1.65	1.00	3.00		3.00
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	12	13	18	13	26	26	33	27	13	21
pH (2.5:1)	N	2010		4.0	[A] 8.1	[A] 9.0	[A] 7.9	[A] 8.4	[A] 8.1	[A] 7.9			[A] 8.1	[A] 8.2
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 0.15	[A] 0.21	[A] 0.23	[A] 0.27	[A] 0.16	[A] 0.19			[A] 0.11	[A] 0.36
Total Sulphur	U	2175	%	0.010	[A] 2.6	[A] 0.47	[A] 3.2	[A] 1.5	[A] 0.76	[A] 0.13			[A] 0.58	[A] 0.27
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 0.12	[A] 0.055	[A] 1.5	[A] 0.23	[A] 1.0	[A] 0.10			[A] 1.2	[A] 0.82
Organic Matter	U	2625	%	0.40							[A] 5.2	[A] 1.7		

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC	Chemtest Job No.:				22-48947	22-48947	22-48947	22-48947
Quotation No.: Q22-29497	Chemtest Sample ID.:				1568529	1568530	1568531	1568532
Order No.: H/5067	Client Sample Ref.:				101		107	117
	Sample Location:				ATK_BH16	STKRD_BH01	ATK_BH05	ATK_BH05
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.40	3.20	3.80	12.70
	Bottom Depth (m):				0.50	3.65		12.80
Determinand	Accred.	SOP	Units	LOD				
Moisture	N	2030	%	0.020	50	13	23	14
pH (2.5:1)	N	2010		4.0		[A] 8.3	[A] 8.0	[A] 8.2
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010		[A] 0.067	[A] 0.81	[A] 0.67
Total Sulphur	U	2175	%	0.010		[A] 0.080	[A] 0.37	[A] 1.8
Sulphate (Acid Soluble)	U	2430	%	0.010		[A] 0.052	[A] 0.98	[A] 0.18
Organic Matter	U	2625	%	0.40	[A] 4.3			

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1568509	105		ATK_BH04		A	Plastic Tub 1000g
1568510	116		ATK_BH04		A	Plastic Tub 1000g
1568511	112		ATK_BH08		A	Plastic Tub 1000g
1568512	101		ATK_BH09		A	Plastic Tub 1000g
1568513	112		ATK_BH09		A	Plastic Tub 1000g
1568514	104		ATK_BH11		A	Plastic Tub 1000g
1568515	115		ATK_BH11		A	Plastic Tub 1000g
1568516	101		ATK_BH15		A	Plastic Tub 1000g
1568517	5		ATK_BH15		A	Plastic Tub 1000g
1568518	103		ATK_BH15		A	Plastic Tub 1000g
1568519	105		ATK_BH15		A	Plastic Tub 1000g
1568520	115		ATK_BH15		A	Plastic Tub 1000g
1568521	7		ATK_BH08		A	Plastic Tub 1000g
1568522			ATK_BH10		A	Plastic Tub 1000g
1568523	106		ATK_BH10		A	Plastic Tub 1000g
1568524			ATK_BH11		A	Plastic Tub 1000g
1568525	101		ATK_BH12		A	Plastic Tub 1000g
1568526	103		ATK_BH12		A	Plastic Tub 1000g
1568527			ATK_BH12		A	Plastic Tub 1000g
1568528	105		ATK_BH16		A	Plastic Tub 1000g
1568529	101		ATK_BH16		A	Plastic Tub 1000g
1568530			STKRD_BH01		A	Plastic Tub 1000g
1568531	107		ATK_BH05		A	Plastic Tub 1000g
1568532	117		ATK_BH05		A	Plastic Tub 1000g

Test Methods

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

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
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T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 23-00589-1
Initial Date of Issue: 19-Jan-2023
Client: SOCOTEC
Client Address: Unit 15 Crosby Yard Industrial Estate
Wildmill
Bridgend
CF31 1JZ

Contact(s): [REDACTED]

Project: H2060-22 Lyneham Banks

Quotation No.: Q22-29497 **Date Received:** 11-Jan-2023

Order No.: H/5067 **Date Instructed:** 11-Jan-2023

No. of Samples: 5

Turnaround (Wkdays): 7 **Results Due:** 19-Jan-2023

Date Approved: 19-Jan-2023

Approved By:
[REDACTED]

Details: [REDACTED] Technical
Manager

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC		Chemtest Job No.:		23-00589	23-00589	23-00589	23-00589	23-00589	
Quotation No.: Q22-29497		Chemtest Sample ID.:		1571708	1571709	1571710	1571711	1571712	
Order No.: H/5067		Client Sample Ref.:		7	116	111	104	3	
		Sample Location:		ATK-BH04	ATK-BH04	ATKRD-BH01	ATK-BH11	ATK-BH6	
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):		3.6	13.5	10.6	5.0	1.2	
		Bottom Depth (m):		4.0	13.8	10.7			
Determinand	Accred.	SOP	Units	LOD					
Moisture	N	2030	%	0.020	28	12	17	18	19
pH (2.5:1)	N	2010		4.0	[A] 8.3	[A] 8.2	[A] 8.2	[A] 9.5	[A] 7.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 0.40	[A] 0.15	[A] 0.018	[A] 0.80	[A] 0.36
Total Sulphur	U	2175	%	0.010	[A] 0.066	[A] 0.71	[A] 0.92	[A] 2.7	[A] 0.31
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 0.092	[A] 0.17	[A] 0.34	[A] 2.6	[A] 0.38

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1571708	7		ATK-BH04		A	Plastic Tub 1000g
1571709	116		ATK-BH04		A	Plastic Tub 1000g
1571710	111		ATKRD-BH01		A	Plastic Tub 1000g
1571711	104		ATK-BH11		A	Plastic Tub 1000g
1571712	3		ATK-BH6		A	Plastic Tub 1000g

Test Methods

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

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B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 23-01312-1
Initial Date of Issue: 23-Jan-2023
Client: SOCOTEC
Client Address: Unit 15 Crosby Yard Industrial Estate
Wildmill
Bridgend
CF31 1JZ

Contact(s): [REDACTED]

Project: H2060-22 Lyneham Banks

Quotation No.: Q22-29497 **Date Received:** 18-Jan-2023

Order No.: H/5067 **Date Instructed:** 18-Jan-2023

No. of Samples: 12

Turnaround (Wkdays): 7 **Results Due:** 26-Jan-2023

Date Approved: 23-Jan-2023

Approved By:
[REDACTED]

Details: [REDACTED] Technical
Manager

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC		Chemtest Job No.:		23-01312	23-01312	23-01312	23-01312	23-01312	23-01312	23-01312	23-01312	
Quotation No.: Q22-29497		Chemtest Sample ID.:		1575234	1575235	1575236	1575237	1575238	1575239	1575240	1575241	
Order No.: H/5067		Client Sample Ref.:		5	114	4	5	5	7	102	104	
		Sample Location:		ATKRD_BH03	ATKRD_BH03	ATKRD_BH02	ATKRD_BH02	ATKRD_BH04	ATKRD_BH04	ATKRD_BH04	ATKRD_BH04	
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):		2.2	9.1	1.2	2.2	2.7	4.2	4.4	6.6	
		Bottom Depth (m):		3.2	9.4	2.2	3.2	3.7				
Determinand	Accred.	SOP	Units	LOD								
Moisture	N	2030	%	0.020	16	17	27	22	15	15	14	20
pH (2.5:1)	N	2010		4.0	[A] 7.9	[A] 8.4		[A] 8.0			[A] 7.8	[A] 7.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 0.92	[A] 0.53		[A] 0.020			[A] 1.3	[A] 0.45
Total Sulphur	U	2175	%	0.010	[A] 3.3	[A] 1.6		[A] < 0.010			[A] 2.6	[A] 0.91
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 1.5	[A] 0.28		[A] 0.021			[A] 2.3	[A] 0.71
Organic Matter	U	2625	%	0.40			[A] 1.2		[A] 0.69	[A] 0.48		

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC	Chemtest Job No.:				23-01312	23-01312	23-01312	23-01312
Quotation No.: Q22-29497	Chemtest Sample ID.:				1575242	1575243	1575244	1575245
Order No.: H/5067	Client Sample Ref.:				105	110	117	107
	Sample Location:				ATKRD_BH08	ATKRD_BH08	ATKRD_BH07	ATKRD_BH09
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				4.9	7.5	11.2	5
	Bottom Depth (m):					7.8	11.5	
Determinand	Accred.	SOP	Units	LOD				
Moisture	N	2030	%	0.020	17	17	17	17
pH (2.5:1)	N	2010		4.0	[A] 8.0	[A] 8.1	[A] 9.1	[A] 8.1
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 1.9	[A] 0.95	[A] 0.42	[A] 0.82
Total Sulphur	U	2175	%	0.010	[A] 4.1	[A] 0.98	[A] 1.1	[A] 0.93
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 2.0	[A] 0.46	[A] 0.12	[A] 0.24
Organic Matter	U	2625	%	0.40				

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1575234	5		ATKRD_BH03		A	Plastic Tub 500g
1575235	114		ATKRD_BH03		A	Plastic Tub 500g
1575236	4		ATKRD_BH02		A	Plastic Tub 500g
1575237	5		ATKRD_BH02		A	Plastic Tub 500g
1575238	5		ATKRD_BH04		A	Plastic Tub 500g
1575239	7		ATKRD_BH04		A	Plastic Tub 500g
1575240	102		ATKRD_BH04		A	Plastic Tub 500g
1575241	104		ATKRD_BH04		A	Plastic Tub 500g
1575242	105		ATKRD_BH08		A	Plastic Tub 500g
1575243	110		ATKRD_BH08		A	Plastic Tub 500g
1575244	117		ATKRD_BH07		A	Plastic Tub 500g
1575245	107		ATKRD_BH09		A	Plastic Tub 500g

Test Methods

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

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 23-02351-1
Initial Date of Issue: 31-Jan-2023
Client: SOCOTEC
Client Address: Unit 15 Crosby Yard Industrial Estate
Wildmill
Bridgend
CF31 1JZ

Contact(s): [REDACTED]
[REDACTED]

Project: H2060-22 Lyneham Banks

Quotation No.: Q22-29497 **Date Received:** 26-Jan-2023

Order No.: H/5067 **Date Instructed:** 26-Jan-2023

No. of Samples: 12

Turnaround (Wkdays): 7 **Results Due:** 03-Feb-2023

Date Approved: 31-Jan-2023

Approved By:
[REDACTED]

Details: [REDACTED] Technical
Manager

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC		Chemtest Job No.:												
Quotation No.: Q22-29497		Chemtest Sample ID.:												
Order No.: H/5067		Client Sample Ref.:												
		Sample Location:												
		Sample Type:												
		Top Depth (m):												
		Bottom Depth (m):												
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	21	19	20	20	18	20	22	17	16	17
pH (2.5:1)	N	2010		4.0			[A] 8.1		[A] 8.2		[A] 8.3	[A] 8.1	[A] 7.9	[A] 7.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010			[A] 0.38		[A] 0.44		[A] 0.042	[A] 0.34	[A] 1.4	[A] 0.57
Total Sulphur	U	2175	%	0.010			[A] 0.95		[A] 1.8		[A] 0.047	[A] 2.8	[A] 1.7	[A] 6.1
Sulphate (Acid Soluble)	U	2430	%	0.010			[A] 0.14		[A] 0.31		[A] 0.029	[A] 0.20	[A] 1.5	[A] 0.31
Organic Matter	U	2625	%	0.40	[A] 2.2	[A] 0.51		[A] 1.2		[A] 2.1				

Results - Soil

Project: H2060-22 Lyneham Banks

Client: SOCOTEC	Chemtest Job No.:		23-02351	23-02351		
Quotation No.: Q22-29497	Chemtest Sample ID.:		1579508	1579509		
Order No.: H/5067	Client Sample Ref.:		101	104		
	Sample Location:		ATK_BH10	ATK_BH10		
	Sample Type:		SOIL	SOIL		
	Top Depth (m):		1.5	4.3		
	Bottom Depth (m):					
Determinand	Accred.	SOP	Units	LOD		
Moisture	N	2030	%	0.020	22	17
pH (2.5:1)	N	2010		4.0	[A] 9.2	[A] 8.0
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 0.72	[A] 1.2
Total Sulphur	U	2175	%	0.010	[A] 0.24	[A] 1.0
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 0.24	[A] 0.34
Organic Matter	U	2625	%	0.40		

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1579498	101		ATK_BH02		A	Plastic Tub 1000g
1579499	102		ATK_BH02		A	Plastic Tub 1000g
1579500	108		ATK_BH02		A	Plastic Tub 1000g
1579501	109		ATK_BH02		A	Plastic Tub 1000g
1579502	115		ATK_BH02		A	Plastic Tub 1000g
1579503	5		ATK_BH02		A	Plastic Tub 1000g
1579504	102		ATK_BH05		A	Plastic Tub 1000g
1579505	108		ATK_BH05		A	Plastic Tub 1000g
1579506	105		ATK_BH07		A	Plastic Tub 1000g
1579507	117		ATK_BH07		A	Plastic Tub 1000g
1579508	101		ATK_BH10		A	Plastic Tub 1000g
1579509	104		ATK_BH10		A	Plastic Tub 1000g

Test Methods

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

Report Information

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U	UKAS accredited
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The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

APPENDIX F

GEOENVIRONMENTAL LABORATORY TEST RESULTS

Certificate of Analysis – (Soil/Leachate)

22101672, 22101695, 22101917,
22102115, 22102198, 22102228,
22102381, 22102530, 22110608,
22111179, 22111309, 22112272,
22112350, 22112701, 22120121,
22120123, 22120505, 22120762,
22121105, 22121124, 22121267,
22121318, 22121376, 22121941
and 22122301

Certificate of Analysis – (Water)

22110217, 22120002, 23011854
and 23020203



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22101672

Quote: BEC220926756 V1.3

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 8

Date Received: 21/10/2022

Analysis Date: 14/11/2022

Date Issued: 14/11/2022

Report Type: Final Version 02

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Account Manager

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22101672
Date Issued: 14/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22101672-001	ATK_TP13-1-ES-0.20	19/10/2022 17:00:00	SOLID	Soil Sample
22101672-002	ATK_TP06-10-ES-2.20	19/10/2022 17:00:00	SOLID	Soil Sample
22101672-003	ATK_TP06-2-ES-0.50	19/10/2022 17:00:00	SOLID	Soil Sample
22101672-004	ATK-TP17-2-ES-0.50	19/10/2022 17:00:00	SOLID	Soil Sample
22101672-005	ATK_TP14-1-ES-0.20	19/10/2022 17:00:00	SOLID	Soil Sample
22101672-006	ATK_TP14-4-ES-0.80	19/10/2022 17:00:00	LPL	Soil Sample
22101672-007	ATK_TP14-9-ES-1.70	19/10/2022 17:00:00	SOLID	Soil Sample
22101672-008	ATK_TP14-4-ES-0.80	19/10/2022 17:00:00	LPL	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50	ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.00		1.90		1.20		6.60
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	<0.02		3.86				12.2	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100				<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005				<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100				<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020		<0.020				<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100				<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005				<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100		<0.100				<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.234		<0.262		<0.234		<0.294
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012		<0.013		<0.012		0.029
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.234* _B		<0.262* _B		<0.234* _B		<0.294* _B
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.047* _B		<0.053* _B		<0.047* _B		<0.059* _B
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.234		<0.262		<0.234		<0.294
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012		<0.013		<0.012		<0.015
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.234		<0.262		<0.234		<0.294
Antimony as Sb	ICPMSW (Dissolved)	0.01	mg/kg [^]	N								
Arsenic as As	ICPMSW (Dissolved)	0.01	mg/kg [^]	N								
Barium as Ba	ICPWATVAR (Dissolved)	0.1	mg/kg [^]	N								

Client: SOCOTEC Geotechnical
 Project Name:
 Project No: 22101672
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005		006		007		008	
					Customer ID	ATK_TP14-1-ES-0.20	ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70		ATK_TP14-4-ES-0.80		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID		
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022		
					MDL								
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM	1.20				1.20				
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U			0.08						
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100						
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N			<0.005						
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100						
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N			<0.020						
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100						
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N			<0.005						
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U			<0.100						
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.234				<0.249				
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM	<0.012				<0.013				
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.234* _B				<0.249* _B				
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM	<0.047* _B				<0.051* _B				
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.234				<0.249				
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM	<0.012				<0.013				
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.234				<0.249				
Antimony as Sb	ICPMSW (Dissolved)	0.01	mg/kg [^]	N						<0.01			
Arsenic as As	ICPMSW (Dissolved)	0.01	mg/kg [^]	N						0.02			
Barium as Ba	ICPWATVAR (Dissolved)	0.1	mg/kg [^]	N						0.5			



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101672
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50	ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Cadmium as Cd	ICPMSW (Dissolved)	0.0002	mg/kg [^]	N								
Chloride as Cl	KONENS	10	mg/kg [^]	N								
Total Chromium as Cr	ICPMSW (Dissolved)	0.01	mg/kg [^]	N								
Copper as Cu	ICPMSW (Dissolved)	0.01	mg/kg [^]	N								
Lead as Pb	ICPMSW (Dissolved)	0.01	mg/kg [^]	N								
Mercury as Hg	ICPMSW (Dissolved)	0.0003	mg/kg [^]	N								
Molybdenum as Mo	ICPMSW (Dissolved)	0.01	mg/kg [^]	N								
Nickel as Ni	ICPMSW (Dissolved)	0.01	mg/kg [^]	N								
Selenium as Se	ICPMSW (Dissolved)	0.01	mg/kg [^]	N								
Total Sulphur as SO4	ICPWATVAR (Dissolved)	30	mg/kg [^]	N								
TDS as mg/kg	PHCONDW	700	mg/kg [^]	N								
Leached Organic Carbon	WSLM13	2	mg/kg [^]	N								
Fluoride as F	ISEF	1	mg/kg [^]	N								
Zinc as Zn	ICPMSW (Dissolved)	0.02	mg/kg [^]	N								
Conductivity at 25°C	PHCONDW	100	µS/cm	U								
pH	PHCONDW	1	pH units	U		7.9		8.1			8.3	
TDS as mg/l	PHCONDW	70	mg/l	N								
ANC	ANC	0.04	mol/kg [^]	N								
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM			8.3		8.2	8.1		7.9

Client: SOCOTEC Geotechnical
 Project Name:
 Project No: 22101672
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005	006	007	008		
					Customer ID	ATK_TP14-1-ES-0.20	ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70	ATK_TP14-4-ES-0.80	
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Cadmium as Cd	ICPMSW (Dissolved)	0.0002	mg/kg^	N				<0.0002			
Chloride as Cl	KONENS	10	mg/kg^	N				30			
Total Chromium as Cr	ICPMSW (Dissolved)	0.01	mg/kg^	N				<0.01			
Copper as Cu	ICPMSW (Dissolved)	0.01	mg/kg^	N				0.04			
Lead as Pb	ICPMSW (Dissolved)	0.01	mg/kg^	N				<0.01			
Mercury as Hg	ICPMSW (Dissolved)	0.0003	mg/kg^	N				<0.0003			
Molybdenum as Mo	ICPMSW (Dissolved)	0.01	mg/kg^	N				0.05			
Nickel as Ni	ICPMSW (Dissolved)	0.01	mg/kg^	N				0.02			
Selenium as Se	ICPMSW (Dissolved)	0.01	mg/kg^	N				<0.01			
Total Sulphur as SO4	ICPWATVAR (Dissolved)	30	mg/kg^	N				6730			
TDS as mg/kg	PHCONDW	700	mg/kg^	N				7290			
Leached Organic Carbon	WSLM13	2	mg/kg^	N				63.3			
Fluoride as F	ISEF	1	mg/kg^	N				3			
Zinc as Zn	ICPMSW (Dissolved)	0.02	mg/kg^	N				<0.02			
Conductivity at 25°C	PHCONDW	100	µS/cm	U				1080			
pH	PHCONDW	1	pH units	U		8.0		7.9			
TDS as mg/l	PHCONDW	70	mg/l	N				731			
ANC	ANC	0.04	mol/kg^	N					7.44		
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM	7.8		8.2				

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50	ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Chloride as Cl	KONECL	2	mg/kg [^]	N		134		346		413		143
Chloride as Cl	KONENS	1	mg/l	U	16		20				12	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003		<0.003				<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.5 _D		<0.5 _D		<0.5 _D		<0.5 _D
Nitrite as N	KONENS	0.01	mg/l	U	<0.01		<0.01				0.06	
Nitrate as N	KONENS	0.2	mg/l	U	6.62		<0.20				0.59	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		1.14		0.64		1.35		1.29
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		31.9		<4.0 _D		22.5		<4.0 _D
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02				<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.7		<0.6		<0.7
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02				<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.7		<0.6		<0.7
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6		<0.7		<0.6		<0.7
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02		0.02				<0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6		<0.7		<0.6		0.9
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02				<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.7		<0.6		<0.7
Fluoride as F	ISEF	0.1	mg/l	U								
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		3.41		3.11		3.74		6.23

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Analysis	Method Code	MDL	Units	Accred.	Sample ID	005		006		007		008	
					Customer ID	ATK_TP14-1-ES-0.20	ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70		ATK_TP14-4-ES-0.80		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID		
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022		
Chloride as Cl	KONECL	2	mg/kg^	N	201				66				
Chloride as Cl	KONENS	1	mg/l	U			16				3		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U			<0.003						
Chromium (VI) as Cr	KONENS	0.1	mg/kg^	N	<0.5 _D				<0.5 _D				
Nitrite as N	KONENS	0.01	mg/l	U			0.50						
Nitrate as N	KONENS	0.2	mg/l	U			5.09						
Nitrite as N	KONENS	0.02	mg/kg^	N	1.47				0.54				
Nitrate as N	KONENO3	0.4	mg/kg^	N	37.6				<4.0 _D				
Complex Cyanide	SFAPI	0.02	mg/l	U			<0.02						
Complex Cyanide	SFAPI	0.5	mg/kg^	UM	<0.6				<0.6				
Free Cyanide	SFAPI	0.02	mg/l	U			<0.02						
Free Cyanide	SFAPI	0.5	mg/kg^	UM	<0.6				<0.6				
Phenol Index	SFAPI	0.5	mg/kg^	U	<0.6				<0.6				
Sulphide as S	SFAPI	0.02	mg/l	U			<0.02						
Sulphide as S	SFAPI	0.5	mg/kg^	N	<0.6				<0.6				
Total Cyanide	SFAPI	0.02	mg/l	U			<0.02						
Total Cyanide	SFAPI	0.5	mg/kg^	UM	<0.6				<0.6				
Fluoride as F	ISEF	0.1	mg/l	U							0.3		
Soil Organic Matter	WSLM59	0.04	% m/m^	U	3.40				0.77				



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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50	ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Total Organic Carbon	WSLM59	0.02	% m/m [^]	U								
LOI @ 450°C	LOI(%MM)	0.2	% m/m [^]	N								
Leached Organic Carbon	TOCW	0.4	mg/l	U		10.3		23.9			30.5	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM			16.3		17.3	17.4		26.8
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM			0.9		0.7	0.5		0.4
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM			21.0		42.7	28.7		17.8
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM			55.9		73.8	68.4		39.5
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM			387.2		396.6	533.7		615.4
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM			<0.5		<0.5	<0.5		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM			27.7		31.1	28.0		36.6
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM			4.1		5.5	5.3		5.6
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM			23.5		35.7	28.5		35.5
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM			313.7		175.6	129.9		118.0
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM			1370		107	130		49.4
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U			161000		114000	168000		75600
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM			20100		27500	25500		30400
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U			4140		6580	4180		3110
Boron as B	ICPBOR	0.5	mg/kg [^]	UM			2.5		2.6	3.2		3.5
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM			2410		893	2700		334

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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005		006		007		008	
					Customer ID	ATK_TP14-1-ES-0.20		ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70		ATK_TP14-4-ES-0.80	
					Sample Type	SOLID		LPL	SOLID	SOLID	LPL	SOLID	
					Sampling Date	19/10/2022		19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	
Total Organic Carbon	WSLM59	0.02	% m/m^	U									2.05
LOI @ 450°C	LOI(%MM)	0.2	% m/m^	N									5.6
Leached Organic Carbon	TOCW	0.4	mg/l	U			19.4					6.35	
Arsenic as As	ICPMSS	0.3	mg/kg^	UM	15.5				11.8				
Cadmium as Cd	ICPMSS	0.2	mg/kg^	UM	0.4				<0.2				
Copper as Cu	ICPMSS	1.6	mg/kg^	UM	26.3				18.7				
Lead as Pb	ICPMSS	0.7	mg/kg^	UM	65.5				17.1				
Manganese as Mn	ICPMSS	1	mg/kg^	UM	424.5				335.0				
Mercury as Hg	ICPMSS	0.5	mg/kg^	UM	<0.5				<0.5				
Nickel as Ni	ICPMSS	2	mg/kg^	UM	28.7				49.0				
Selenium as Se	ICPMSS	0.5	mg/kg^	UM	5.4				4.6				
Total Chromium as Cr	ICPMSS	1.2	mg/kg^	UM	34.0				33.4				
Zinc as Zn	ICPMSS	16	mg/kg^	UM	141.4				88.0				
Barium as Ba	ICPSOIL	0.5	mg/kg^	UM	120				31.2				
Calcium as Ca	ICPSOIL	50	mg/kg^	U	142000				22500				
Iron as Fe	ICPSOIL	36	mg/kg^	UM	21200				37600				
Magnesium as Mg	ICPSOIL	10	mg/kg^	U	4100				4220				
Boron as B	ICPBOR	0.5	mg/kg^	UM	4.6				6.5				
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg^	UM	3020				3070				



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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50		ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID	
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	
Antimony as Sb	ICPMSW (Dissolved)	0.001	mg/l	U									
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.001		0.008				0.005		
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	0.00008		0.00002				<0.00002		
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001				<0.001		
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.005		<0.001				0.003		
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	0.015		0.002				<0.001		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	0.00004		<0.00003				<0.00003		
Molybdenum as Mo	ICPMSW (Dissolved)	0.001	mg/l	U									
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.004		0.006				0.006		
Selenium as Se	ICPMSW (Dissolved)	0.001	mg/l	U									
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.010		0.008				0.004		
Barium as Ba	ICPWATVAR (Dissolved)	0.01	mg/l	U									
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.16		0.16				0.18		
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	1830		652				322		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5				<5		
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5				<5		
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10		<10				<10		
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5				<5		
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5				<5		

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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005	006	007	008		
					Customer ID	ATK_TP14-1-ES-0.20	ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70	ATK_TP14-4-ES-0.80	
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Antimony as Sb	ICPMSW (Dissolved)	0.001	mg/l	U					<0.001		
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U		0.002			0.002		
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U		0.00007			<0.00002		
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U		<0.001			<0.001		
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U		0.009			0.004		
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U		0.002			<0.001		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U		<0.00003			<0.00003		
Molybdenum as Mo	ICPMSW (Dissolved)	0.001	mg/l	U					0.005		
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U		0.005			0.002		
Selenium as Se	ICPMSW (Dissolved)	0.001	mg/l	U					<0.001		
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U		0.014			0.002		
Barium as Ba	ICPWATVAR (Dissolved)	0.01	mg/l	U					0.05		
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U		0.47					
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U		2060			675		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N		<5					
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N		<5					
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N		<10					
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N		<5					
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N		<5					



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Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50	ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<13		<12		<15
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12* _B		<13* _B		<12* _B		<15* _B
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<23		<26		<23		<29
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<13		<12		<15
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<13		<12		29
Acenaphthene	PAHMSW	0.01	µg/l	U		<0.01		0.06				<0.01
Acenaphthylene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Chrysene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Coronene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Fluorene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01				<0.01

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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005		006		007		008	
					Customer ID	ATK_TP14-1-ES-0.20		ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70		ATK_TP14-4-ES-0.80	
					Sample Type	SOLID		LPL	SOLID	SOLID	LPL	SOLID	
					Sampling Date	19/10/2022		19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	
Benzene HS_ID_AR	BTEXHSA	10	µg/kg^	UM	<12				<13				
Ethylbenzene HS_ID_AR	BTEXHSA	10	µg/kg^	UM	<12* _B				<13* _B				
m/p-Xylene HS_ID_AR	BTEXHSA	20	µg/kg^	UM	<23				<25				
o-Xylene HS_ID_AR	BTEXHSA	10	µg/kg^	UM	<12				<13				
Toluene HS_ID_AR	BTEXHSA	10	µg/kg^	UM	<12				<13				
Acenaphthene	PAHMSW	0.01	µg/l	U			0.05						
Acenaphthylene	PAHMSW	0.01	µg/l	U			<0.01						
Anthracene	PAHMSW	0.01	µg/l	U			<0.01						
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U			<0.01						
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U			<0.01						
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U			<0.01						
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U			<0.01						
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U			<0.01						
Chrysene	PAHMSW	0.01	µg/l	U			<0.01						
Coronene	PAHMSW	0.01	µg/l	U			<0.01						
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U			<0.01						
Fluoranthene	PAHMSW	0.01	µg/l	U			<0.01						
Fluorene	PAHMSW	0.01	µg/l	U			<0.01						
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U			<0.01						

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50	ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Naphthalene	PAHMSW	0.01	µg/l	U		0.03		0.03			0.03	
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01			<0.01	
Pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01			<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U		0.18		0.23			0.18	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM			<0.09		<0.11	<0.09		<0.12
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U			<0.09		<0.11	<0.09		<0.12
Anthracene	PAHMSUS	0.08	mg/kg [^]	U			0.11		<0.11	0.25		<0.12
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			0.16		<0.11	0.24		<0.12
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.78		<0.11	0.76		0.25
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.45		<0.11	0.40		0.12
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM			0.42		<0.11	0.43		<0.12
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.66		<0.11	0.78		0.16
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM			0.94		<0.11	0.88		0.23
Coronene	PAHMSUS	0.08	mg/kg [^]	N			<0.09		<0.11	<0.09		<0.12
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			0.12		<0.11	0.11		<0.12
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.77		0.11	0.91		0.37
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM			<0.09		<0.11	<0.09		<0.12
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.50		<0.11	0.46		0.13
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM			<0.09		<0.11	<0.09		<0.12

Client: SOCOTEC Geotechnical
 Project Name:
 Project No: 22101672
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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005		006		007		008	
					Customer ID	ATK_TP14-1-ES-0.20	ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70		ATK_TP14-4-ES-0.80		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID		
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022		
Naphthalene	PAHMSW	0.01	µg/l	U			0.30						
Phenanthrene	PAHMSW	0.01	µg/l	U			<0.01						
Pyrene	PAHMSW	0.01	µg/l	U			<0.01						
Total PAH 16	PAHMSW	0.16	µg/l	U			0.49						
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM	<0.09				<0.10				
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U	<0.09				<0.10				
Anthracene	PAHMSUS	0.08	mg/kg [^]	U	0.14				<0.10				
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM	0.13				<0.10				
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM	0.48				<0.10				
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	0.22				<0.10				
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM	0.26				<0.10				
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	0.43				<0.10				
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM	0.44				<0.10				
Coronene	PAHMSUS	0.08	mg/kg [^]	N	<0.09				<0.10				
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM	<0.09				<0.10				
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	0.59				<0.10				
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM	<0.09				<0.10				
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM	0.28				<0.10				
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM	<0.09				<0.10				

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50		ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID	
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09		<0.11		0.22		<0.12	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.71		<0.11		0.82		0.34	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		6.07		1.68		6.63		2.65	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01				<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01				<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01				<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01				<0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.01		<0.01				<0.01	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01				0.01	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.68		<5.25		<4.67		<5.87	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.68		<5.25		5.46		8.56	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.68		5.85		9.42		<5.87	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		45.9		<13.1		43.6		18.2	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		19.4		<7.87		17.3		<8.81	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		68.4		27.0		73.5		40.3	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01		<0.01				<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		0.01		0.01				0.01	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01		<0.01				<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01		0.01				0.01	

Client: SOCOTEC Geotechnical
 Project Name:
 Project No: 22101672
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005		006		007		008	
					Customer ID	ATK_TP14-1-ES-0.20	ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70		ATK_TP14-4-ES-0.80		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID		
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022		
Phenanthrene	PAHMSUS	0.08	mg/kg^	UM	0.13				<0.10				
Pyrene	PAHMSUS	0.08	mg/kg^	UM	0.56				<0.10				
Total PAH 16	PAHMSUS	1.28	mg/kg^	U	4.13				<1.60				
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01					
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01					
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01					
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01					
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N				<0.01					
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01					
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^	U	<4.67				<4.99				
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^	U	<4.67				6.89				
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^	U	7.66				8.02				
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^	U	53.9				15.2				
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^	N	15.5				12.8				
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^	U	77.9				42.9				
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U				<0.01					
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U				0.01					
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U				<0.01					
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U				<0.01					



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101672
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50		ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID	
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01		<0.01			<0.01		
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		0.03		0.04			0.04		
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U			5.80		6.84		6.63		7.47
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U			8.82		11.2		14.0		12.4
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U			6.31		10.9		17.8		11.7
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^A	U			54.4		18.7		61.3		33.8
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^A	N			43.0		15.5		32.7		18.5
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^A	U			106		58.2		123		78.1
Benzene	VOCHSAS	1	µg/kg^A	UM			<1		<1		<1		<2
Ethylbenzene	VOCHSAS	2	µg/kg^A	UM			<3		<3		<2		<3
m and p-Xylene	VOCHSAS	4	µg/kg^A	UM			<5		<5		<5		<6
o-Xylene	VOCHSAS	2	µg/kg^A	UM			<3		<3		<2		<3
Toluene	VOCHSAS	5	µg/kg^A	UM			11		11		<6		157
Dimethylphenols	PHEGCMS	0.0005	mg/l	N		0.0005		<0.0005			0.0006		
Methylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		<0.0005			<0.0005		
Phenol	PHEGCMS	0.0005	mg/l	N		0.0023		0.0042			0.0049		
Total Phenols	PHEGCMS	0.002	mg/l	N		0.0036		0.0054			0.0063		
Trimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		<0.0005			<0.0005		
Total Moisture at 35°C	CLANDPREP	0.1	%	N			14.5		23.8		14.4		31.9

Client: SOCOTEC Geotechnical
 Project Name:
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 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005		006		007		008	
					Customer ID	ATK_TP14-1-ES-0.20	ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70		ATK_TP14-4-ES-0.80		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID		
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022		
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01							
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		0.04							
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^	U	6.74			<4.99					
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^	U	9.42			7.21					
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^	U	10.0			10.2					
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^	U	53.7			18.0					
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^	N	23.6			<7.48					
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^	U	97.3			46.7					
Benzene	VOCHSAS	1	µg/kg^	UM	<1			<1					
Ethylbenzene	VOCHSAS	2	µg/kg^	UM	<2			<2					
m and p-Xylene	VOCHSAS	4	µg/kg^	UM	<5			<5					
o-Xylene	VOCHSAS	2	µg/kg^	UM	<2			<2					
Toluene	VOCHSAS	5	µg/kg^	UM	<6			<6					
Dimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005							
Methylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005							
Phenol	PHEGCMS	0.0005	mg/l	N		0.0023							
Total Phenols	PHEGCMS	0.002	mg/l	N		0.0035							
Trimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005							
Total Moisture at 35°C	CLANDPREP	0.1	%	N	14.4		14.6		19.8			15.0	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101672
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	004	
					Customer ID	ATK_TP13-1-ES-0.20		ATK_TP06-10-ES-2.20		ATK_TP06-2-ES-0.50	ATK-TP17-2-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID	SOLID	LPL	SOLID
					Sampling Date	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022
Description of Solid Material	CLANDPREP		-	N		SILT		CLAY		SILT		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400		0.400				0.400
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		66.9		0				30.3
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		0				0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.715		0.654				0.718
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.485		0.546				0.482
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 10:1		kg	N								
Fraction above 4mm (%)	Leachate Prep CEN 10:1		%	N								
Fraction of non-crushable material (%)	Leachate Prep CEN 10:1		%	N								
Volume of Water for 10:1 Leach (ltr)	Leachate Prep CEN 10:1		l	N								
Weight of Sample Leached (kg)	Leachate Prep CEN 10:1		kg	N								
WAC Report	WAC		-	N								
Asbestos Identification	SUB002		-	N		NAIIS		CH		CH		NAIIS
Asbestos Stage 3	SUB002	0.001	%	N				0.001		<0.001		
Total Nitrogen as N	SUB022	0.08	%	N		0.15		0.16		0.17		0.39

Client: SOCOTEC Geotechnical
 Project Name:
 Project No: 22101672
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	005		006		007		008	
					Customer ID	ATK_TP14-1-ES-0.20		ATK_TP14-4-ES-0.80		ATK_TP14-9-ES-1.70		ATK_TP14-4-ES-0.80	
					Sample Type	SOLID		LPL	SOLID	SOLID	LPL	SOLID	
					Sampling Date	19/10/2022		19/10/2022	19/10/2022	19/10/2022	19/10/2022	19/10/2022	
Description of Solid Material	CLANDPREP		-	N	SILT		SILT	CLAY		SILT			
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N			0.400						
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N			59.3						
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N			0						
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N			0.732						
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N			0.468						
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 10:1		kg	N									0.090
Fraction above 4mm (%)	Leachate Prep CEN 10:1		%	N									63.0
Fraction of non-crushable material (%)	Leachate Prep CEN 10:1		%	N									0
Volume of Water for 10:1 Leach (ltr)	Leachate Prep CEN 10:1		l	N									0.885
Weight of Sample Leached (kg)	Leachate Prep CEN 10:1		kg	N									0.105
WAC Report	WAC		-	N									See Attached
Asbestos Identification	SUB002		-	N	NAIIS				NAIIS				
Asbestos Stage 3	SUB002	0.001	%	N									
Total Nitrogen as N	SUB022	0.08	%	N	0.17				0.06				

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/2

Client	SOCOTEC Geotechnical	
Site	Lyneham Banks	
Project	22101672	
Sample No	Sample Description	Issue Date
22101672-008	ATK_TP14-4-ES-0.80	08/11/2022

Leaching Data	
Weight of Sample (kg)	0.105
Moisture content @ 105°C (% Wet Weight)	14.3
Equivalent weight based on drying @ 105°C (kg)	0.090
Volume of Water required for 10:1 stage (litres)	0.885
Fraction of sample above 4mm %	63.0
Fraction of non-crushable material %	0

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-Reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	2.05	3	5	6
N	LOI450	Loss on Ignition (%)	5.6			10
	BTEXHSA	Sum of BTEX (mg/kg)		6		
	PCBUSECD	Sum of 7 Congener PCBs (mg/kg)		1		
	TPHFIDUS	>C10-C40 Aliphatic (mg/kg) EH_1D_AL		500		
	PAHMSUS	Sum of 17 PAHs (mg/kg)		100		
	PHSOIL	pH (pH Units)			>6	
N	ANC	Acid Neutralisation Capacity (mol/kg)	7.44		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	10:1 Single Stage Leachate	Cumulative Amount Leached at 10:1	Landfill Waste Acceptance Criteria Limit Values		
			mg/l except **	mg/kg (dry wt)	Inert Waste Landfill	Stable Non-Reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM3**	pH (pH Units)	7.9				
U	WSLM2**	Conductivity (µS/cm)	1080				
U	ICPMSW	Arsenic	0.002	0.02	0.5	2	25
U	ICPWATVAR	Barium	0.05	0.5	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.01	0.5	10	70
U	ICPMSW	Copper	0.004	0.04	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.005	0.05	0.5	10	30
U	ICPMSW	Nickel	0.002	0.02	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.01	0.5	10	50
U	ICPMSW	Antimony	<0.001	<0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.002	<0.02	4	50	200
U	KONENS	Chloride	3	30	800	15000	25000
U	ISEF	Fluoride	0.3	3	10	150	500
U	ICPWATVAR	Sulphate as SO4	675	6730	1000	20000	50000
N	WSLM27	Total Dissolved Solids	731	7290	4000	60000	100000
	SFAPI	Phenol Index			1		
U	WSLM13	Dissolved Organic Carbon	6.35	63.3	500	800	1000

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited.

Calculated data is not UKAS accredited

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Analysis Report

Report Number: 22/OCT/COA/864278

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-001

Quote Ref:

Date Sampled: 19 October 2022

Date Received: 26 October 2022

Test Date: 26 October 2022 to 2 November 2022

Date Reported: 2 November 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 864278

6m Bottle:

72m Bottle:

Bio Bottle: 864278

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/OCT/COA/864278

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-001

Laboratory References

Date Sampled: 19 October 2022	Sample Number: 864278
Date Received: 26 October 2022	6m Bottle:
Test Date: 26 October 2022 to 2 November 2022	72m Bottle:
Date Reported: 2 November 2022	Bio Bottle: 864278

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.15	0.15	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/OCT/COA/864279

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-002

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 19 October 2022	Sample Number:	864279
Date Received: 26 October 2022	6m Bottle:	
Test Date: 26 October 2022 to 2 November 2022	72m Bottle:	
Date Reported: 2 November 2022	Bio Bottle:	864279

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/OCT/COA/864279

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-002

Laboratory References

Date Sampled: 19 October 2022
Date Received: 26 October 2022
Test Date: 26 October 2022 to 2 November 2022
Date Reported: 2 November 2022

Sample Number: 864279
6m Bottle:
72m Bottle:
Bio Bottle: 864279

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.16	0.16	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/OCT/COA/864280

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-003

Quote Ref:
Date Sampled: 19 October 2022
Date Received: 26 October 2022
Test Date: 26 October 2022 to 2 November 2022
Date Reported: 2 November 2022

Laboratory References
Sample Matrix: SOIL
Sample Number: 864280
6m Bottle:
72m Bottle:
Bio Bottle: 864280

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/OCT/COA/864280

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-003

Laboratory References

Date Sampled: 19 October 2022	Sample Number: 864280
Date Received: 26 October 2022	6m Bottle:
Test Date: 26 October 2022 to 2 November 2022	72m Bottle:
Date Reported: 2 November 2022	Bio Bottle: 864280

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.17	0.17	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/OCT/COA/864281

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-004

Quote Ref:

Date Sampled: 19 October 2022

Date Received: 26 October 2022

Test Date: 26 October 2022 to 2 November 2022

Date Reported: 2 November 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 864281

6m Bottle:

72m Bottle:

Bio Bottle: 864281

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/OCT/COA/864281

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-004

Laboratory References

Date Sampled: 19 October 2022
Date Received: 26 October 2022
Test Date: 26 October 2022 to 2 November 2022
Date Reported: 2 November 2022

Sample Number: 864281
6m Bottle:
72m Bottle:
Bio Bottle: 864281

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.39	0.39	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/OCT/COA/864282

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-005

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 19 October 2022	Sample Number:	864282
Date Received: 26 October 2022	6m Bottle:	
Test Date: 26 October 2022 to 2 November 2022	72m Bottle:	
Date Reported: 2 November 2022	Bio Bottle:	864282

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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SOCOTEC UK Limited
Reg Office: SOCOTEC House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
Incorporated in England:02880501

Analysis Report

Report Number: 22/OCT/COA/864282

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-005

Laboratory References

Date Sampled: 19 October 2022	Sample Number: 864282
Date Received: 26 October 2022	6m Bottle:
Test Date: 26 October 2022 to 2 November 2022	72m Bottle:
Date Reported: 2 November 2022	Bio Bottle: 864282

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.17	0.17	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/OCT/COA/864283

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-007

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 19 October 2022	Sample Number:	864283
Date Received: 26 October 2022	6m Bottle:	
Test Date: 26 October 2022 to 2 November 2022	72m Bottle:	
Date Reported: 2 November 2022	Bio Bottle:	864283

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

This report may not be reproduced in part without the written permission of SOCOTEC UK Limited.

SOCOTEC UK Limited
Reg Office: SOCOTEC House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
Incorporated in England:02880501

Analysis Report

Report Number: 22/OCT/COA/864283

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101672-007

Laboratory References

Date Sampled: 19 October 2022
Date Received: 26 October 2022
Test Date: 26 October 2022 to 2 November 2022
Date Reported: 2 November 2022

Sample Number: 864283
6m Bottle:
72m Bottle:
Bio Bottle: 864283

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.06	0.06	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22101672
Date Issued: 14/11/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101672
 Date Issued: 14/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
ANC	ANC: Acid Neutralisation Capacity (mol/kg)	Air Dried & Ground
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Antimony (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Antimony in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Arsenic in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Molybdenum (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Molybdenum in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Selenium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Selenium in Solids (BSEN 12457-2)	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc in Solids (BSEN 12457-2)	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Barium (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Barium in Solids (BSEN 12457-2)	Filtered
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 in Solids (BSEN 12457-2)	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101672
 Date Issued: 14/11/2022

ISEF	Fluoride by ISE	Filtered
ISEF	Fluoride in Solids (BSEN 12457-2)	Filtered
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chloride in Solids (BSEN 12457-2)	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 10:1	WAC Leachate Prep, 1-Stage 10:1 (BSEN 12457-2)	As Received
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
LOI(%MM)	LOI: Loss on Ignition @ 450°C	Air Dried & Ground
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	Electrical Conductivity @ 25°C	Filtered
PHCONDW	pH	Filtered
PHCONDW	TDS: Total Dissolved Solids (Calc)	Filtered
PHCONDW	Total Dissolved Solids in Solids (BSEN 12457-2)	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered
SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB002	Asbestos Stage 2+3: Quantification	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WAC	WAC Report	
WSLM13	Leached Organic Carbon in Solids (BSEN 12457-2)	Filtered
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground
WSLM59	TOC: Total Organic Carbon	Air Dried & Ground

[Project Report Notes](#)

V2 - Asbestos stage 1 results amended



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22101672
Date Issued: 14/11/2022

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22101672
Date Issued: 14/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22101695

Quote: BEC220926756 V1.3

Project Ref: H2060-22

Site: Lyneham banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 3

Date Received: 21/10/2022

Analysis Date: 08/11/2022

Date Issued: 08/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory



Reported by Account Manager



01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22101695
Date Issued: 08/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22101695-001	ATK_TP04-2-ES-0.50	18/10/2022 16:09:00	SOLID	Soil Sample
22101695-002	ATK_TP03-2-ES-0.30	18/10/2022 16:09:00	SOLID	Soil Sample
22101695-003	ATK_TP05-5-ES-0.70	18/10/2022 16:09:00	LPL	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.40		1.40		1.50	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.08		0.04		0.14		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		<0.100		
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		<0.005		
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		<0.100		
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020		<0.020		<0.020		
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		<0.100		
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		<0.005		
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100		<0.100		<0.100		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.240		<0.240		<0.234	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012		<0.012		<0.012	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.240		<0.240		<0.234	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.048		<0.048		<0.047	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.240		<0.240		<0.234	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012		<0.012		<0.012	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.240		<0.240		<0.234	
pH	PHCONDW	1	pH units	U	8.0		7.9		8.0		
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		7.6		7.7		7.9	
Chloride as Cl	KONECL	2	mg/kg [^]	N		79		1030		158	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Chloride as Cl	KONENS	1	mg/l	U	9		5		17		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003		0.040		<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.5 _D		<0.5 _D		<0.5 _D	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01		0.44		0.93		
Nitrate as N	KONENS	0.2	mg/l	U	8.32		2.98		3.10		
Nitrite as N	KONENS	0.02	mg/kg [^]	N		2.88		<0.10 _D		1.58	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		17.6		<4.0 _D		28.7	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.6		<0.6	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.6		<0.6	
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6		<0.6		<0.6	
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02		<0.02		0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6		<0.6		<0.6	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.6		<0.6	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		3.75		3.33		4.87	
Leached Organic Carbon	TOCW	0.4	mg/l	U	12.4		13.4		14.7		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		17.3		22.8		13.7	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		0.3		0.3		0.4	
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		20.3		17.9		21.3	
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		46.2		42.6		65.2	
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		441.4		205.7		381.0	
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5		<0.5	
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		32.2		23.3		23.3	
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		5.1		5.0		5.1	
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		32.4		31.1		22.1	
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		104.9		87.3		96.4	
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		99.3		112		99.8	
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		143000		55300		119000	
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		23500		23700		19300	
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		4820		3210		3670	
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		2.7		2.5		2.1	
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		1740		1700		2210	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U		0.002		0.001		0.002	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U		0.00004		0.00003		0.00008	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U		0.002		<0.001		<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U		0.005		0.006		0.005	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001		<0.001		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003		<0.00003		<0.00003		
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.003		0.003		0.004		
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.003		0.002		0.007		
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.10		0.09		0.19		
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	1050		956		1150		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		<5		
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		<5		
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10		<10		<10		
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		<5		
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		<5		
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<12		<12	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<12		<12	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<24		<24		<23	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<12		<12	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<12		<12	
Acenaphthene	PAHMSW	0.01	µg/l	U	0.04		0.03		<0.01		
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Anthracene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22101695
 Date Issued: 08/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Chrysene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Coronene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Fluorene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Naphthalene	PAHMSW	0.01	µg/l	U	0.11		0.03		0.01		
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Pyrene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		<0.01		
Total PAH 16	PAHMSW	0.16	µg/l	U	0.34		0.20		0.16		
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		<0.10		<0.09	
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.10		<0.10		<0.09	
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.10		0.16		<0.09	
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		0.11		0.80		0.20	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.11		0.88			0.26
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.13		1.01			0.31
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		0.10		0.52			0.18
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		0.46			0.13
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		0.12		0.98			0.27
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.10		0.16			<0.09
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		0.15			<0.09
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.15		1.39			0.35
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		<0.10			<0.09
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		0.57			0.18
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		<0.10			<0.09
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		0.42			0.09
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.14		1.21			0.30
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		1.73		8.93			2.83
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01			<0.04 _D
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01			<0.04 _D
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01			<0.04 _D
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01			<0.04 _D
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		0.01		<0.01			<0.04 _D

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.01		0.02		<0.04 _D		
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.81	4.81			<4.68	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.81	10.0			8.96	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		6.00	14.2			12.2	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		63.7	70.5			48.9	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		27.7	24.5			17.5	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		93.9	117			87.0	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01		<0.01		<0.04 _D		
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.01		<0.01		<0.04 _D		
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01		<0.01		<0.04 _D		
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01		<0.01		<0.04 _D		
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01		<0.01		<0.04 _D		
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02		0.02		<0.04 _D		
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		5.02	6.25			4.75	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		8.79	10.3			10.4	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		13.6	16.3			16.4	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		70.4	68.6			42.8	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		42.6	29.1			14.5	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		129	122			85.4	



Client: SOCOTEC Geotechnical
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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1		<1		<1	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2		<2		<2	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5		<5		<5	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2		<2		<2	
Toluene	VOCHSAS	5	µg/kg [^]	UM		<6		<6		<6	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		<0.0005		<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		<0.0005		<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N		0.0011		0.0023		0.0059	
Total Phenols	PHEGCMS	0.002	mg/l	N		0.0023		0.0035		0.0071	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		<0.0005		<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N			16.8		16.7		14.6
Description of Solid Material	CLANDPREP		-	N			SILT		CLAY		SILT
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N			0.400		0.400		0.400
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N			100		100		87.6
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N			0		0		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N			0.721		0.742		0.716
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N			0.479		0.458		0.484
Asbestos Identification	SUB002		-	N			NAIIS		NAIIS		CH
Asbestos Stage 3	SUB002	0.001	%	N							0.002



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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	ATK_TP04-2-ES-0.50		ATK_TP03-2-ES-0.30		ATK_TP05-5-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID
					Sampling Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Total Nitrogen as N	SUB022	0.08	%	N		4.1		3.7		2.9	

Analysis Report

Report Number: 22/OCT/COA/864201

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site SOCOTEC BRETBY

Grade: 42202

Our Ref: SOCOTEC - HMRC

Customer Ref: 22101695-001

Quote Ref:

Date Sampled: 18 October 2022

Date Received: 25 October 2022

Test Date: 25 October 2022 to 28 October 2022

Date Reported: 28 October 2022

Laboratory References

Sample Matrix WASTEFINES

Sample Number: 864201

6m Bottle:

72m Bottle:

Bio Bottle: 864201

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report Additional Tests

Report Number: 22/OCT/COA/864201
 Supplier: Contaminated Land
 PO Box 100
 Ashby Road
 Burton on Trent
 Staffs

Site: SOCOTEC BRETBY
 Grade: 42202
 Our Ref: SOCOTEC - HMRC
 Customer Ref: 22101695-001

Laboratory References

Date Sampled: 18 October 2022
 Date Received: 25 October 2022
 Test Date: 25 October 2022 to 28 October 2022
 Date Reported: 28 October 2022

Sample Number: 864201
 6m Bottle:
 72m Bottle:
 Bio Bottle: 864201

Method	Units	Test	Result
SP19a	gms	Sample Mass Received	1082.1
SP19a	gms	Dry Weight	954.3
SP19a	gms	200g Sub Sample	234.6
SP19a	gms	+20mm Mass Removed	114.7
CA3a	%	LOI440	6.1
CA3a	%	LOI440 Whole Sample	4.1

--END OF REPORT--

Analysis Report

Report Number: 22/OCT/COA/864202

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site SOCOTEC BRETBY

Grade: 42202

Our Ref: SOCOTEC - HMRC

Customer Ref: 22101695-002

Quote Ref:

Date Sampled: 18 October 2022

Date Received: 25 October 2022

Test Date: 25 October 2022 to 28 October 2022

Date Reported: 28 October 2022

Laboratory References

Sample Matrix WASTEFINES

Sample Number: 864202

6m Bottle:

72m Bottle:

Bio Bottle: 864202

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report Additional Tests

Report Number: 22/OCT/COA/864202
 Supplier: Contaminated Land
 PO Box 100
 Ashby Road
 Burton on Trent
 Staffs

Site: SOCOTEC BRETBY
 Grade: 42202
 Our Ref: SOCOTEC - HMRC
 Customer Ref: 22101695-002

Laboratory References

Date Sampled: 18 October 2022
 Date Received: 25 October 2022
 Test Date: 25 October 2022 to 28 October 2022
 Date Reported: 28 October 2022

Sample Number: 864202
 6m Bottle:
 72m Bottle:
 Bio Bottle: 864202

Method	Units	Test	Result
SP19a	gms	Sample Mass Received	1097.2
SP19a	gms	Dry Weight	921.2
SP19a	gms	200g Sub Sample	237.8
SP19a	gms	+20mm Mass Removed	36.7
CA3a	%	LOI440	4.3
CA3a	%	LOI440 Whole Sample	3.7

--END OF REPORT--

Analysis Report

Report Number: 22/OCT/COA/864203

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site SOCOTEC BRETBY

Grade: 42202

Our Ref: SOCOTEC - HMRC

Customer Ref: 22101695-003

Quote Ref:

Date Sampled: 18 October 2022

Date Received: 25 October 2022

Test Date: 25 October 2022 to 28 October 2022

Date Reported: 28 October 2022

Laboratory References

Sample Matrix WASTEFINES

Sample Number: 864203

6m Bottle:

72m Bottle:

Bio Bottle: 864203

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report Additional Tests

Report Number: 22/OCT/COA/864203

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site SOCOTEC BRETBY

Grade: 42202

Our Ref: SOCOTEC - HMRC

Customer Ref: 22101695-003

Laboratory References

Date Sampled: 18 October 2022

Sample Number: 864203

Date Received: 25 October 2022

6m Bottle:

Test Date: 25 October 2022 to 28 October 2022

72m Bottle:

Date Reported: 28 October 2022

Bio Bottle: 864203

Method	Units	Test	Result
SP19a	gms	Sample Mass Received	1062.7
SP19a	gms	Dry Weight	943.5
SP19a	gms	200g Sub Sample	238.9
SP19a	gms	+20mm Mass Removed	92.9
CA3a	%	LOI440	4.0
CA3a	%	LOI440 Whole Sample	2.9

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22101695
Date Issued: 08/11/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22101695
 Date Issued: 08/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22101695
 Date Issued: 08/11/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB002	Asbestos Stage 2+3: Quantification	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22101695
Date Issued: 08/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22101917

Quote: BEC220926756 V1.3

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 5

Date Received: 24/10/2022

Analysis Date: 10/11/2022

Date Issued: 10/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Account Manager

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22101917
Date Issued: 10/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22101917-001	ATK_TP01-1-ES-0.20	20/10/2022 00:00:00	SOLID	Soil Sample
22101917-002	ATK_TP018-5-ES-1.00	20/10/2022 00:00:00	SOLID	Soil Sample
22101917-003	ATK_TP019-1-ES-0.10	20/10/2022 00:00:00	SOLID	Soil Sample
22101917-004	ATK_TP019-3-ES-0.60	20/10/2022 00:00:00	LPL	Soil Sample
22101917-005	ATK_TP02-2-ES-0.50	20/10/2022 00:00:00	SOLID	Soil Sample



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101917
 Date Issued: 10/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005		
					Customer ID	ATK_TP01-1-ES-0.20	ATK_TP018-5-ES-1.00		ATK_TP019-1-ES-0.10	ATK_TP019-3-ES-0.60		ATK_TP02-2-ES-0.50
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID	SOLID
					Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM	1.80		1.20	1.50		1.20		
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U		0.14		0.10				
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.1		<0.1				
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N		<0.005		<0.005				
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100		<0.100				
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N		<0.020		<0.020				
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100		<0.100				
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N		0.006		0.006				
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U		<0.100		<0.100				
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.25		<0.237	<0.258		<0.256		
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM	<0.013		<0.012	<0.013		<0.013		
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.250		<0.237	<0.258		<0.256		
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM	<0.051		<0.048	<0.052		<0.052		
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.250* _B		<0.237* _B	<0.258* _B		<0.256* _B		
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM	0.015		0.014	0.018		0.015		
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.250		<0.237	<0.258		<0.256		
pH	PHCONDW	1	pH units	U		8.2		8.2				
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM	7.8		8.5	8.0		8.4		
Chloride as Cl	KONECL	2	mg/kg [^]	N	23		4	16		3		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		004		005	
					Customer ID	ATK_TP01-1-ES-0.20		ATK_TP018-5-ES-1.00		ATK_TP019-1-ES-0.10		ATK_TP019-3-ES-0.60		ATK_TP02-2-ES-0.50	
					Sample Type	SOLID		LPL	SOLID	SOLID	LPL	SOLID	SOLID		
					Sampling Date	20/10/2022		20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022		
Chloride as Cl	KONENS	1	mg/l	U		<1				2					
Chromium (VI) as Cr	KONENS	0.003	mg/l	U		<0.003				<0.003					
Chromium (VI) as Cr	KONENS	0.1	mg/kg ^A	N	<0.1		<0.1	<0.1							<0.1
Nitrite as N	KONENS	0.01	mg/l	U		<0.01				<0.01					
Nitrate as N	KONENS	0.2	mg/l	U		<0.20				0.58					
Nitrite as N	KONENS	0.02	mg/kg ^A	N	0.16		<0.02	0.33							<0.02
Nitrate as N	KONENO3	0.4	mg/kg ^A	N	1.2		0.5	1.9							2.3
Complex Cyanide	SFAPI	0.02	mg/l	U		<0.02				<0.02					
Complex Cyanide	SFAPI	0.5	mg/kg ^A	UM	<0.6		<0.6	<0.6							<0.6
Free Cyanide	SFAPI	0.02	mg/l	U		<0.02				<0.02					
Free Cyanide	SFAPI	0.5	mg/kg ^A	UM	<0.6		<0.6	<0.6							<0.6
Phenol Index	SFAPI	0.5	mg/kg ^A	U	<0.6		<0.6	<0.6							<0.6
Sulphide as S	SFAPI	0.02	mg/l	U		0.02				<0.02					
Sulphide as S	SFAPI	0.5	mg/kg ^A	N	<3.1 _D		<3.0 _D	<3.2 _D							3.4
Total Cyanide	SFAPI	0.02	mg/l	U		<0.02				<0.02					
Total Cyanide	SFAPI	0.5	mg/kg ^A	UM	<0.6		<0.6	<0.6							<0.6
Soil Organic Matter	WSLM59	0.04	% m/m ^A	U	3.29		1.73	3.75							0.85
Leached Organic Carbon	TOCW	0.4	mg/l	U		10.4				4.29					
Arsenic as As	ICPMSS	0.3	mg/kg ^A	UM	16.2		33.2	23.1							9.0

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		004		005	
					Customer ID	ATK_TP01-1-ES-0.20	ATK_TP018-5-ES-1.00		ATK_TP019-1-ES-0.10		ATK_TP019-3-ES-0.60		ATK_TP02-2-ES-0.50		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID	SOLID			
					Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022			
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM	0.6		0.3		0.3						0.3
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM	18.2		9.1		12.6						8.3
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM	48.7		16.7		30.0						12.9
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM	459.3		1055		622.5						981.5
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM	<0.5		<0.5		<0.5						<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM	24.2		41.6		40.7						38.6
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM	0.5		<0.5		0.5						0.9
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM	24.9		27.7		29.1						19.2
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM	101.0		92.2		87.2						69.7
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM	123		26.1		45.9						39.7
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U	136000		168000		54800						91000
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM	22100		31800		31500						42100
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U	4640		3420		3320						3260
Boron as B	ICPBOR	0.5	mg/kg [^]	UM	2.5		1.6		1.9						1.4
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM	2240		83		37						41
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U			<0.001								<0.001
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U			<0.00002								<0.00002
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U			<0.001								<0.001
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U			<0.001								0.001

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		004		005	
					Customer ID	ATK_TP01-1-ES-0.20	ATK_TP018-5-ES-1.00		ATK_TP019-1-ES-0.10		ATK_TP019-3-ES-0.60		ATK_TP02-2-ES-0.50		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID	SOLID			
					Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022			
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U		<0.001				<0.001					
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U		<0.00003				<0.00003					
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U		<0.001				0.001					
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U		0.004				0.003					
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U		0.02				0.03					
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U		13				8					
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N		6				6					
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N		<5				<5					
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N		<10				<10					
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N		<5				<5					
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N		<5				<5					
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		15		14		18					15
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<12		<13					<13
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<25		<24		<26					<26
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<12		<13					<13
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<12		<13					<13
Acenaphthene	PAHMSW	0.01	µg/l	U		<0.02 _b				<0.01					
Acenaphthylene	PAHMSW	0.01	µg/l	U		<0.02 _b				<0.01					
Anthracene	PAHMSW	0.01	µg/l	U		<0.02 _b				<0.01					



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101917
 Date Issued: 10/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005		
					Customer ID	ATK_TP01-1-ES-0.20	ATK_TP018-5-ES-1.00		ATK_TP019-1-ES-0.10	ATK_TP019-3-ES-0.60		ATK_TP02-2-ES-0.50
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID	SOLID
					Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Chrysene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Coronene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Fluorene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Naphthalene	PAHMSW	0.01	µg/l	U		0.03			0.02			
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Pyrene	PAHMSW	0.01	µg/l	U		<0.02 _b			<0.01			
Total PAH 16	PAHMSW	0.16	µg/l	U		0.36			0.17			
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM	<0.10		<0.09	<0.10		<0.10		
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U	<0.10		<0.09	<0.10		<0.10		
Anthracene	PAHMSUS	0.08	mg/kg [^]	U	<0.10		<0.09	<0.10		<0.10		
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM	0.14		<0.09	<0.10		<0.10		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005		
					Customer ID	ATK_TP01-1-ES-0.20	ATK_TP018-5-ES-1.00	ATK_TP019-1-ES-0.10	ATK_TP019-3-ES-0.60	ATK_TP02-2-ES-0.50		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID	SOLID
					Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM	<0.10		<0.09	<0.10		<0.10		
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	0.12		<0.09	<0.10		<0.10		
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM	<0.10		<0.09	<0.10		<0.10		
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	0.11		<0.09	<0.10		<0.10		
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM	0.14		<0.09	<0.10		<0.10		
Coronene	PAHMSUS	0.08	mg/kg [^]	N	<0.10		<0.09	<0.10		<0.10		
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM	<0.10		<0.09	<0.10		<0.10		
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	0.17		<0.09	<0.10		<0.10		
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM	<0.10		<0.09	<0.10		<0.10		
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM	<0.10		<0.09	<0.10		<0.10		
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM	<0.10		<0.09	<0.10		<0.10		
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM	0.14		<0.09	<0.10		<0.10		
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM	0.25		<0.09	<0.10		<0.10		
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U	1.97		<1.52	<1.65		<1.64		
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _b			<0.01			
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _b			<0.01			
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _b			<0.01			
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _b			<0.01			
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.02 _b			<0.01			

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		004		005	
					Customer ID	ATK_TP01-1-ES-0.20		ATK_TP018-5-ES-1.00		ATK_TP019-1-ES-0.10		ATK_TP019-3-ES-0.60		ATK_TP02-2-ES-0.50	
					Sample Type	SOLID		LPL	SOLID	SOLID	LPL	SOLID	SOLID		
					Sampling Date	20/10/2022		20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022		
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		0.03					<0.01				
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U	<5.01		<4.74	<5.16						<5.12	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U	<5.01		<4.74	<5.16						<5.12	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U	<5.01		<4.74	<5.16						<5.12	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^A	U	22.0		<11.8	15.3						18.4	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^A	N	10.6		<7.11	9.38						7.88	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^A	U	30.8		<23.7	<25.8						25.7	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.02 _D					<0.01				
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.02 _D					0.01				
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.02 _D					<0.01				
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.02 _D					<0.01				
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.02 _D					<0.01				
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		0.04					0.02				
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U	<5.01		<4.74	<5.16						<5.12	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U	<5.01		<4.74	<5.16						<5.12	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U	<5.01		<4.74	9.77						8.71	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^A	U	30.0		12.4	35.7						33.6	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^A	N	15.9		<7.11	10.3						16.4	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^A	U	55.7		29.8	63.1						67.1	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101917
 Date Issued: 10/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005		
					Customer ID	ATK_TP01-1-ES-0.20	ATK_TP018-5-ES-1.00	ATK_TP019-1-ES-0.10	ATK_TP019-3-ES-0.60	ATK_TP02-2-ES-0.50		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID	SOLID
					Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM	<1	<1	<1	<1	<1	<1		
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM	<2	<2	<3	<3	<3	<3		
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM	<5	<5	<6	<6	<6	<5		
o-Xylene	VOCHSAS	2	µg/kg [^]	UM	<2	<2	<3	<3	<3	<3		
Toluene	VOCHSAS	5	µg/kg [^]	UM	<6	<6	<7	<7	<7	<7		
Dimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		<0.0005				
Methylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		<0.0005				
Phenol	PHEGCMS	0.0005	mg/l	N		0.0065		0.0018				
Total Phenols	PHEGCMS	0.002	mg/l	N		0.0077		0.0030				
Trimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		<0.0005				
Total Moisture at 35°C	CLANDPREP	0.1	%	N	20.1	15.6	22.5	22.0	21.8	21.8		
Description of Solid Material	CLANDPREP		-	N	CLAY	CLAY	CLAY	CLAY	CLAY	CLAY		
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400		0.400				
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0		0				
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		0				
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.681		0.656				
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.519		0.544				
Asbestos Identification	SUB002		-	N	CH	NAIIS	NAIIS	NAIIS		NAIIS		
Asbestos Stage 3	SUB002	0.001	%	N	0.001							



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101917
 Date Issued: 10/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005		
					Customer ID	ATK_TP01-1-ES-0.20	ATK_TP018-5-ES-1.00	ATK_TP019-1-ES-0.10	ATK_TP019-3-ES-0.60	ATK_TP02-2-ES-0.50		
					Sample Type	SOLID	LPL	SOLID	SOLID	LPL	SOLID	SOLID
					Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Total Nitrogen as N	SUB022	0.08	%	N	0.18		0.11	0.24			<0.04	

Analysis Report

Report Number: 22/NOV/COA/864695

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101917-001

Quote Ref:

Date Sampled: 20 October 2022

Date Received: 2 November 2022

Test Date: 2 November 2022 to 4 November 2022

Date Reported: 4 November 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 864695

6m Bottle:

72m Bottle:

Bio Bottle: 864695

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864695

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101917-001

Laboratory References

Date Sampled: 20 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864695
6m Bottle:
72m Bottle:
Bio Bottle: 864695

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.18	0.18	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/NOV/COA/864696

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101917-002

Quote Ref:
Date Sampled: 20 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Laboratory References
Sample Matrix: SOIL
Sample Number: 864696
6m Bottle:
72m Bottle:
Bio Bottle: 864696

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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SOCOTEC UK Limited
Reg Office: SOCOTEC House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
Incorporated in England:02880501

Analysis Report

Report Number: 22/NOV/COA/864696

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101917-002

Laboratory References

Date Sampled: 20 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864696
6m Bottle:
72m Bottle:
Bio Bottle: 864696

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.11	0.11	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/NOV/COA/864697

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101917-003

Quote Ref:

Date Sampled: 20 October 2022

Date Received: 2 November 2022

Test Date: 2 November 2022 to 4 November 2022

Date Reported: 4 November 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 864697

6m Bottle:

72m Bottle:

Bio Bottle: 864697

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:

██████████
Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864697

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101917-003

Laboratory References

Date Sampled: 20 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864697
6m Bottle:
72m Bottle:
Bio Bottle: 864697

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.24	0.24	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/NOV/COA/864698

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101917-005

Quote Ref:

Date Sampled: 20 October 2022

Date Received: 2 November 2022

Test Date: 2 November 2022 to 4 November 2022

Date Reported: 4 November 2022

Laboratory References

Sample Matrix: SOIL

Sample Number: 864698

6m Bottle:

72m Bottle:

Bio Bottle: 864698

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864698

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22101917-005

Laboratory References

Date Sampled: 20 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864698
6m Bottle:
72m Bottle:
Bio Bottle: 864698

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	< 0.04	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101917
 Date Issued: 10/11/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATK_TP01-1-ES-0.20	22101917-001	PHSOIL						✓
ATK_TP018-5-ES-1.00	22101917-002	PHCONDW						✓
ATK_TP018-5-ES-1.00	22101917-002	PHSOIL						✓
ATK_TP019-1-ES-0.10	22101917-003	PHSOIL						✓
ATK_TP019-3-ES-0.60	22101917-004	PHCONDW						✓
ATK_TP02-2-ES-0.50	22101917-005	PHSOIL						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101917
 Date Issued: 10/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22101917
 Date Issued: 10/11/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB002	Asbestos Stage 2+3: Quantification	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22101917
Date Issued: 10/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22102115

Quote: BEC220926756 V1.3

Project Ref: H2060-22

Site: Lyneham banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 3

Date Received: 26/10/2022

Analysis Date: 10/11/2022

Date Issued: 10/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]

Reported by Account Manager

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22102115
Date Issued: 10/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22102115-001	Atk_TP16-1-ES-0.20	21/10/2022 17:07:00	SOLID	Soil Sample
22102115-002	Atk_TP16-2-ES-0.50	21/10/2022 17:07:00	LPL	Soil Sample
22102115-003	Atk_TP15-4-ES-1.00	21/10/2022 17:07:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	
					Customer ID	Atk_TP16-1-ES-0.20	Atk_TP16-2-ES-0.50		Atk_TP15-4-ES-1.00
					Sample Type	SOLID	LPL	SOLID	SOLID
					Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.60		1.40	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U			0.08		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.1		
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N			<0.005		
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100		
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N			<0.020		
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100		
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N			0.006		
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U			<0.100		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.245		<0.246	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012		<0.012	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		0.941		<0.246	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		0.053		<0.049	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.245* _B		<0.246* _B	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012		<0.012	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		1.07		<0.246	
pH	PHCONDW	1	pH units	U			8.1		
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		11.9		9.0	
Chloride as Cl	KONECL	2	mg/kg [^]	N		31		35	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	
					Customer ID	Atk_TP16-1-ES-0.20	Atk_TP16-2-ES-0.50		Atk_TP15-4-ES-1.00
					Sample Type	SOLID	LPL	SOLID	SOLID
					Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Chloride as Cl	KONENS	1	mg/l	U			15		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U			<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N	<0.1			<0.1	
Nitrite as N	KONENS	0.01	mg/l	U			<0.01		
Nitrate as N	KONENS	0.2	mg/l	U			5.34		
Nitrite as N	KONENS	0.02	mg/kg [^]	N	0.26			0.26	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N	10.8			6.0	
Complex Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM	<0.6			<0.6	
Free Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM	<0.6			<0.6	
Phenol Index	SFAPI	0.5	mg/kg [^]	U	<0.6			<0.6	
Sulphide as S	SFAPI	0.02	mg/l	U			<0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N	<0.6			<0.6	
Total Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM	<0.6			<0.6	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U	4.92			3.17	
Leached Organic Carbon	TOCW	0.4	mg/l	U			9.58		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM	13.6			18.8	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	
					Customer ID	Atk_TP16-1-ES-0.20	Atk_TP16-2-ES-0.50		Atk_TP15-4-ES-1.00
					Sample Type	SOLID	LPL	SOLID	SOLID
					Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		0.3		0.2	
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		23.4		21.9	
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		52.6		48.2	
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		342.5		375.1	
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5	
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		19.2		22.3	
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5	
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		24.9		25.6	
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		100.5		100.8	
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		173		88.9	
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		97900		127000	
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		23400		41900	
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		4020		2960	
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		2.0		2.0	
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		626		2010	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U			0.001		
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U			<0.00002		
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U			0.001		
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U			0.007		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		
					Customer ID	Atk_TP16-1-ES-0.20		Atk_TP16-2-ES-0.50		Atk_TP15-4-ES-1.00		
					Sample Type	SOLID		LPL	SOLID		SOLID	
					Sampling Date	21/10/2022		21/10/2022	21/10/2022		21/10/2022	
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U			<0.001					
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U			<0.00003					
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U			0.004					
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U			0.007					
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U			0.09					
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U			360					
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N			6					
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N			<5					
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N			<10					
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N			<5					
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N			<5					
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12				<12		
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		16				<12		
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<25				<25		
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12				<12		
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12				<12		
Acenaphthene	PAHMSW	0.01	µg/l	U			<0.01					
Acenaphthylene	PAHMSW	0.01	µg/l	U			0.02					
Anthracene	PAHMSW	0.01	µg/l	U			<0.01					



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102115
 Date Issued: 10/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	
					Customer ID	Atk_TP16-1-ES-0.20	Atk_TP16-2-ES-0.50		Atk_TP15-4-ES-1.00
					Sample Type	SOLID	LPL	SOLID	SOLID
					Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U		<0.01			
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U		<0.01			
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01			
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.01			
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01			
Chrysene	PAHMSW	0.01	µg/l	U		<0.01			
Coronene	PAHMSW	0.01	µg/l	U		<0.01			
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.01			
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.01			
Fluorene	PAHMSW	0.01	µg/l	U		<0.01			
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.01			
Naphthalene	PAHMSW	0.01	µg/l	U		0.11* B			
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.01			
Pyrene	PAHMSW	0.01	µg/l	U		<0.01			
Total PAH 16	PAHMSW	0.16	µg/l	U		0.27			
Acenaphthene	PAHMSUS	0.08	mg/kg^	UM	<0.10			<0.10	
Acenaphthylene	PAHMSUS	0.08	mg/kg^	U	<0.10			<0.10	
Anthracene	PAHMSUS	0.08	mg/kg^	U	0.19			<0.10	
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg^	UM	0.92			0.21	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	
					Customer ID	Atk_TP16-1-ES-0.20	Atk_TP16-2-ES-0.50		Atk_TP15-4-ES-1.00
					Sample Type	SOLID	LPL	SOLID	SOLID
					Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		1.13		0.35	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		1.16		0.33	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		0.71		0.24	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.62		0.20	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		1.12		0.37	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		0.19		<0.10	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		0.13		<0.10	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		2.45		0.45	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		<0.10	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.61		0.23	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		<0.10	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		0.36		0.13	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		2.11		0.42	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		11.9		3.51	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01		
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01		
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01		
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01		
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N			<0.01		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003	
					Customer ID	Atk_TP16-1-ES-0.20		Atk_TP16-2-ES-0.50		Atk_TP15-4-ES-1.00	
					Sample Type	SOLID		LPL	SOLID	SOLID	
					Sampling Date	21/10/2022		21/10/2022	21/10/2022	21/10/2022	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01					
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U	<4.90				<4.93		
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U	<4.90				<4.93		
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U	<4.90				<4.93		
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^A	U	29.6				19.8		
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^A	N	24.1				9.03		
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^A	U	50.8				28.1		
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01					
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01					
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01					
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01					
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01					
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		0.03					
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U	<4.90				<4.93		
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U	<4.90* _B				5.52* _B		
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U	<4.90* _B				<4.93* _B		
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^A	U	37.6				26.9		
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^A	N	18.1				9.16		
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^A	U	58.0				47.2		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	
					Customer ID	Atk_TP16-1-ES-0.20	Atk_TP16-2-ES-0.50		Atk_TP15-4-ES-1.00
					Sample Type	SOLID	LPL	SOLID	SOLID
					Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM	<1		<1		
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM	<3		<2		
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM	<5		<5		
o-Xylene	VOCHSAS	2	µg/kg [^]	UM	<3		<2		
Toluene	VOCHSAS	5	µg/kg [^]	UM	<7		<6		
Dimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005			
Methylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005			
Phenol	PHEGCMS	0.0005	mg/l	N		0.0039			
Total Phenols	PHEGCMS	0.002	mg/l	N		0.0051			
Trimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005			
Total Moisture at 35°C	CLANDPREP	0.1	%	N	18.3		18.4	18.8	
Description of Solid Material	CLANDPREP		-	N	CLAY		CLAY	CLAY	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N			0.400		
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N			0		
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N			0		
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N			0.704		
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N			0.496		
Asbestos Identification	SUB002		-	N	CH			NAIS	
Asbestos Stage 3	SUB002	0.001	%	N	0.009				



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102115
 Date Issued: 10/11/2022



Analysis Results

					Sample ID	001	002	003
					Customer ID	Atk_TP16-1-ES-0.20	Atk_TP16-2-ES-0.50	Atk_TP15-4-ES-1.00
					Sample Type	SOLID	LPL	SOLID
					Sampling Date	21/10/2022	21/10/2022	21/10/2022
Analysis	Method Code	MDL	Units	Accred.				
Total Nitrogen as N	SUB022	0.08	%	N	0.18			0.18

Analysis Report

Report Number: 22/NOV/COA/864699

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102115-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 21 October 2022	Sample Number:	864699
Date Received: 2 November 2022	6m Bottle:	
Test Date: 2 November 2022 to 4 November 2022	72m Bottle:	
Date Reported: 4 November 2022	Bio Bottle:	864699

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864699

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102115-001

Laboratory References

Date Sampled: 21 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864699
6m Bottle:
72m Bottle:
Bio Bottle: 864699

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.18	0.18	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/NOV/COA/864700

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102115-003

Quote Ref:

Date Sampled: 21 October 2022

Date Received: 2 November 2022

Test Date: 2 November 2022 to 4 November 2022

Date Reported: 4 November 2022

Laboratory References

Sample Matrix: SOIL

Sample Number: 864700

6m Bottle:

72m Bottle:

Bio Bottle: 864700

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864700

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102115-003

Laboratory References

Date Sampled: 21 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864700
6m Bottle:
72m Bottle:
Bio Bottle: 864700

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.18	0.18	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102115
 Date Issued: 10/11/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
Atk_TP16-1-ES-0.20	22102115-001	GROHSA/BTEXHSA						✓
Atk_TP15-4-ES-1.00	22102115-003	GROHSA/BTEXHSA						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102115
 Date Issued: 10/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102115
 Date Issued: 10/11/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB002	Asbestos Stage 2+3: Quantification	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22102115
Date Issued: 10/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22102198

Quote: BEC220926756 V1.3

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 27/10/2022

Analysis Date: 13/11/2022

Date Issued: 14/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]

Reported by Account Manager

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22102198
Date Issued: 14/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22102198-001	ATK_BH03-1-ES-0.30-0.60	25/10/2022 15:58:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH03-1-ES-0.30-0.60	
Sample Type					LPL	SOLID
Sampling Date					25/10/2022	25/10/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.40
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.03	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.1	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	0.006	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.229
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.229
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.047
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.229
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.229
pH	PHCONDW	1	pH units	U	7.9	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.3
Chloride as Cl	KONECL	2	mg/kg [^]	N		510



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102198
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH03-1-ES-0.30-0.60	
Sample Type					LPL	SOLID
Sampling Date					25/10/2022	25/10/2022
Analysis	Method Code	MDL	Units	Accred.		
Chloride as Cl	KONENS	1	mg/l	U	36	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	<0.01	
Nitrate as N	KONENS	0.2	mg/l	U	5.55	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.17
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		13.9
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6
Sulphide as S	SFAPI	0.02	mg/l	U	0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		2.59
Leached Organic Carbon	TOCW	0.4	mg/l	U	9.21	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		13.8



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102198
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH03-1-ES-0.30-0.60	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					25/10/2022	25/10/2022
Analysis	Method Code	MDL	Units	Accred.		
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		0.3
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		52.8
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		75.4
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		536.7
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		21.6
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		23.1
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		137.7
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		169
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		219000
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		20300
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		4460
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		2.6
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		3090
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.006	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH03-1-ES-0.30-0.60	
Sample Type					LPL	SOLID
Sampling Date					25/10/2022	25/10/2022
Analysis Results						
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.003	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.005	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.27	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	1650	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	6	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<12
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<12
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg [^]	UM		<23
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<12
Toluene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<12
Acenaphthene	PAHMSW	0.01	µg/l	U	0.03	
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01	
Anthracene	PAHMSW	0.01	µg/l	U	0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102198
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH03-1-ES-0.30-0.60	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					25/10/2022	25/10/2022
Analysis	Method Code	MDL	Units	Accred.		
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Chrysene	PAHMSW	0.01	µg/l	U	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	0.04	
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01	
Pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	0.21	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.09
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		0.10
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		0.48

Analysis Results

					Sample ID	001	
					Customer ID	ATK_BH03-1-ES-0.30-0.60	
					Sample Type	LPL	SOLID
					Sampling Date	25/10/2022	25/10/2022
Analysis	Method Code	MDL	Units	Accred.			
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.68
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.67
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM			0.40
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.39
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM			0.63
Coronene	PAHMSUS	0.08	mg/kg [^]	N			0.11
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			0.12
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.87
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM			<0.09
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.43
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM			<0.09* _B
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM			0.26
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.75
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U			6.14
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01		
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01		
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01		
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01		
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01		



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102198
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH03-1-ES-0.30-0.60	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					25/10/2022	25/10/2022
Analysis	Method Code	MDL	Units	Accred.		
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<4.58
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		5.26
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		5.64
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^A	U		20.7
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^A	N		10.0
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^A	U		41.9
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.04	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		<4.58
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		5.33
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		6.41
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^A	U		20.5
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^A	N		<6.87
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^A	U		39.1



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102198
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH03-1-ES-0.30-0.60	
					LPL	SOLID
					25/10/2022	25/10/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2
Toluene	VOCHSAS	5	µg/kg [^]	UM		<6
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0018	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0030	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		12.7
Description of Solid Material	CLANDPREP		-	N		SILT
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.742
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.458
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.13

Analysis Report

Report Number: 22/OCT/COA/864527

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102198-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 25 October 2022	Sample Number:	864527
Date Received: 31 October 2022	6m Bottle:	
Test Date: 31 October 2022 to 2 November 2022	72m Bottle:	
Date Reported: 2 November 2022	Bio Bottle:	864527

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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SOCOTEC UK Limited
Reg Office: SOCOTEC House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
Incorporated in England:02880501

Analysis Report

Report Number: 22/OCT/COA/864527

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102198-001

Laboratory References

Date Sampled: 25 October 2022
Date Received: 31 October 2022
Test Date: 31 October 2022 to 2 November 2022
Date Reported: 2 November 2022

Sample Number: 864527
6m Bottle:
72m Bottle:
Bio Bottle: 864527

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.13	0.13	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22102198
Date Issued: 14/11/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102198
 Date Issued: 14/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102198
 Date Issued: 14/11/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22102198
Date Issued: 14/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22102228

Quote: BEC220926756 V1.3

Project Ref: H2060-22

Site: H2060-22 Lyneham

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

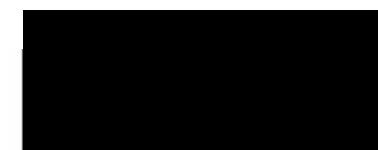
Date Received: 27/10/2022

Analysis Date: 13/11/2022

Date Issued: 14/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory



Reported by Account Manager

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22102228
Date Issued: 14/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22102228-001	ATK_TP09-103-ES-1.00	25/10/2022 00:00:00	SOLID	Soil Sample
22102228-002	ATK_TP10-103-ES-0.70	25/10/2022 00:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATK_TP09-103-ES-1.00		ATK_TP10-103-ES-0.70
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	25/10/2022	25/10/2022	25/10/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.90	1.40	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.10			
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.1			
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005			
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020			
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	0.006			
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100			
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.267	<0.267	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013	<0.013	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.267	<0.267	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.053	<0.053	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.267	<0.267	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013	<0.013	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.267	<0.267	
pH	PHCONDW	1	pH units	U	8.3			
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.3	8.3	
Chloride as Cl	KONECL	2	mg/kg [^]	N		14	22	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002
					Customer ID	ATK_TP09-103-ES-1.00	ATK_TP10-103-ES-0.70
					Sample Type	LPL	SOLID
					Sampling Date	25/10/2022	25/10/2022
Chloride as Cl	KONENS	1	mg/l	U		2	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U		0.012	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N			<0.1
Nitrite as N	KONENS	0.01	mg/l	U		<0.01	
Nitrate as N	KONENS	0.2	mg/l	U		0.39	
Nitrite as N	KONENS	0.02	mg/kg [^]	N			0.17
Nitrate as N	KONENO3	0.4	mg/kg [^]	N			1.0
Complex Cyanide	SFAPI	0.02	mg/l	U		<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM			<0.7
Free Cyanide	SFAPI	0.02	mg/l	U		<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM			<0.7
Phenol Index	SFAPI	0.5	mg/kg [^]	U			<0.7
Sulphide as S	SFAPI	0.02	mg/l	U		0.03	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N			<0.7
Total Cyanide	SFAPI	0.02	mg/l	U		<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM			<0.7
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U			1.86
Leached Organic Carbon	TOCW	0.4	mg/l	U		6.89	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM			14.3

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATK_TP09-103-ES-1.00		ATK_TP10-103-ES-0.70
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	25/10/2022	25/10/2022	25/10/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2	<0.2	
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		16.1	14.3	
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		21.7	15.1	
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		372.2	677.2	
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5	<0.5	
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		35.4	35.6	
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5	<0.5	
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		33.8	29.6	
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		78.5	57.4	
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		51.1	45.3	
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		10500	7440	
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		35700	34300	
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3210	3160	
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		1.7	1.5	
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		20	<20	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.003			
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002			
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001			
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.004			

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_TP09-103-ES-1.00		ATK_TP10-103-ES-0.70	
					Sample Type	LPL	SOLID	SOLID	
					Sampling Date	25/10/2022	25/10/2022	25/10/2022	
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	0.002				
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003				
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.009				
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.015				
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.03				
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	10				
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	6				
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5				
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10				
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5				
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5				
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<27		<27	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13	
Acenaphthene	PAHMSW	0.01	µg/l	U	<0.01				
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01				
Anthracene	PAHMSW	0.01	µg/l	U	0.01				

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID			
					Customer ID	001	002	
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	25/10/2022	25/10/2022	25/10/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	ATK_TP09-103-ES-1.00	<0.01		
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	ATK_TP10-103-ES-0.70	<0.01		
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.01		
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		
Chrysene	PAHMSW	0.01	µg/l	U		<0.01		
Coronene	PAHMSW	0.01	µg/l	U		<0.01		
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.01		
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		
Fluorene	PAHMSW	0.01	µg/l	U		<0.01		
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.01		
Naphthalene	PAHMSW	0.01	µg/l	U		0.03		
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.01		
Pyrene	PAHMSW	0.01	µg/l	U		<0.01		
Total PAH 16	PAHMSW	0.16	µg/l	U		0.18		
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.11	<0.11	
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.11	<0.11	
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATK_TP09-103-ES-1.00		ATK_TP10-103-ES-0.70
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	25/10/2022	25/10/2022	25/10/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.11	<0.11	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11* _B	<0.11* _B	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.71	<1.71	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01			

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATK_TP09-103-ES-1.00		ATK_TP10-103-ES-0.70
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	25/10/2022	25/10/2022	25/10/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<5.33	<5.33	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<5.33	<5.33	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		6.40	<5.33	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^A	U		16.9	<13.3	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^A	N		<8.00	<8.00	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^A	U		37.5	27.7	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01			
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.01			
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01			
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01			
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01			
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.03			
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		6.33	6.99	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		12.6	12.5	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		19.9	17.2	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^A	U		35.8	31.2	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^A	N		14.9	15.7	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^A	U		87.6	81.9	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002
					Customer ID	ATK_TP09-103-ES-1.00	ATK_TP10-103-ES-0.70
					Sample Type	LPL	SOLID
					Sampling Date	25/10/2022	25/10/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1	<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3	<3
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5	<6
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3	<3
Toluene	VOCHSAS	5	µg/kg [^]	UM		<6	<7
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		
Phenol	PHEGCMS	0.0005	mg/l	N	0.0061		
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0073		
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		
Total Moisture at 35°C	CLANDPREP	0.1	%	N		25.0	25.0
Description of Solid Material	CLANDPREP		-	N		CLAY	CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400	
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0	
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0	
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.640	
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.560	
Asbestos Identification	SUB002		-	N		NAIIS	NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.13	0.07

Analysis Report

Report Number: 22/NOV/COA/864701

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102228-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 25 October 2022	Sample Number:	864701
Date Received: 2 November 2022	6m Bottle:	
Test Date: 2 November 2022 to 4 November 2022	72m Bottle:	
Date Reported: 4 November 2022	Bio Bottle:	864701

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864701

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102228-001

Laboratory References

Date Sampled: 25 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864701
6m Bottle:
72m Bottle:
Bio Bottle: 864701

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.13	0.13	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/NOV/COA/864702

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102228-002

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 25 October 2022	Sample Number:	864702
Date Received: 2 November 2022	6m Bottle:	
Test Date: 2 November 2022 to 4 November 2022	72m Bottle:	
Date Reported: 4 November 2022	Bio Bottle:	864702

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864702

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102228-002

Laboratory References

Date Sampled: 25 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864702
6m Bottle:
72m Bottle:
Bio Bottle: 864702

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.07	0.07	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22102228
Date Issued: 14/11/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22102228
 Date Issued: 14/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22102228
 Date Issued: 14/11/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22102228
Date Issued: 14/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22102381

Quote: BEC220926756 V1.3

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

Date Received: 28/10/2022

Analysis Date: 14/11/2022

Date Issued: 14/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Account Manager

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22102381
Date Issued: 14/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22102381-001	ATK_TP08A-101-ES-0.30	26/10/2022 16:10:00	SOLID	Soil Sample
22102381-002	ATK_TP07A-103-ES-0.80	26/10/2022 16:10:00	LPL	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	002
					Customer ID	
					Sample Type	
					Sampling Date	
					ATK_TP08A-101-ES-0.30	ATK_TP07A-103-ES-0.80
					SOLID	LPL SOLID
					26/10/2022	26/10/2022 26/10/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM	1.10	1.10
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U		0.04
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N		<0.005
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N		<0.020
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N		<0.100
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N		<0.005
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U		<0.100
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.295	<0.274
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM	<0.015	<0.014
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.295	<0.274
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM	<0.060	<0.055
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.295	<0.274
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM	<0.015	<0.014
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM	<0.295	<0.274
pH	PHCONDW	1	pH units	U		8.1
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM	8.2	9.1
Chloride as Cl	KONECL	2	mg/kg [^]	N	36	24

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	002		
					001	002		
					Customer ID	ATK_TP08A-101-ES-0.30	ATK_TP07A-103-ES-0.80	
					Sample Type	SOLID	LPL	SOLID
					Sampling Date	26/10/2022	26/10/2022	26/10/2022
Chloride as Cl	KONENS	1	mg/l	U			17	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U			<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N	<0.1			<0.1
Nitrite as N	KONENS	0.01	mg/l	U			<0.01	
Nitrate as N	KONENS	0.2	mg/l	U			<0.20	
Nitrite as N	KONENS	0.02	mg/kg [^]	N	0.11			<0.02
Nitrate as N	KONENO3	0.4	mg/kg [^]	N	3.0			1.0
Complex Cyanide	SFAPI	0.02	mg/l	U			<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM	<0.7			<0.7
Free Cyanide	SFAPI	0.02	mg/l	U			<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM	<0.7			<0.7
Phenol Index	SFAPI	0.5	mg/kg [^]	U	<0.7			<0.7
Sulphide as S	SFAPI	0.02	mg/l	U			0.03	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N	<0.7			<0.7
Total Cyanide	SFAPI	0.02	mg/l	U			<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM	<0.7			<0.7
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U	3.30			1.54
Leached Organic Carbon	TOCW	0.4	mg/l	U			2.89	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM	14.6			45.0



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102381
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	002	
					Customer ID	ATK_TP07A-103-ES-0.80	
					Sample Type	LPL	SOLID
					Sampling Date	26/10/2022	26/10/2022
					Sample ID	001	
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM	ATK_TP08A-101-ES-0.30	<0.2	0.3
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		8.2	10.6
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		19.7	17.9
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		223.7	2654
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5	<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		20.1	70.2
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5	0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		29.1	26.1
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		152.0	110.4
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		47.0	85.8
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		13400	41300
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		30900	72000
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3340	3150
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		2.9	1.6
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		66	54
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U			<0.001
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U			<0.00002
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U			<0.001
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U			0.001

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_TP08A-101-ES-0.30		ATK_TP07A-103-ES-0.80	
					Sample Type	SOLID	LPL	SOLID	
					Sampling Date	26/10/2022	26/10/2022	26/10/2022	
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U			<0.001		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U			<0.00003		
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U			0.020		
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U			0.004		
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U			0.02		
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U			25		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N			<10		
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<15			<14	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<15			<14	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM	<30			<27	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<15			<14	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<15			<14	
Acenaphthene	PAHMSW	0.01	µg/l	U			0.03		
Acenaphthylene	PAHMSW	0.01	µg/l	U			0.02		
Anthracene	PAHMSW	0.01	µg/l	U			<0.01		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_TP08A-101-ES-0.30		ATK_TP07A-103-ES-0.80	
					Sample Type	SOLID		LPL	SOLID
					Sampling Date	26/10/2022		26/10/2022	26/10/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U			<0.01		
Chrysene	PAHMSW	0.01	µg/l	U			<0.01		
Coronene	PAHMSW	0.01	µg/l	U			<0.01		
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U			<0.01		
Fluoranthene	PAHMSW	0.01	µg/l	U			<0.01		
Fluorene	PAHMSW	0.01	µg/l	U			<0.01		
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Naphthalene	PAHMSW	0.01	µg/l	U			0.08		
Phenanthrene	PAHMSW	0.01	µg/l	U			<0.01		
Pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Total PAH 16	PAHMSW	0.16	µg/l	U			0.26		
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12			<0.11	
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U	<0.12			<0.11	
Anthracene	PAHMSUS	0.08	mg/kg [^]	U	<0.12			<0.11	
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12			<0.11	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	002	
					001		
					Customer ID	ATK_TP07A-103-ES-0.80	
					Sample Type	LPL	SOLID
					Sampling Date	26/10/2022	26/10/2022
					Customer ID	ATK_TP08A-101-ES-0.30	
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Coronene	PAHMSUS	0.08	mg/kg [^]	N	<0.12		<0.11
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM	<0.12		<0.11
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U	<1.89		<1.76
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.01	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	002
					ATK_TP08A-101-ES-0.30	ATK_TP07A-103-ES-0.80
					SOLID	LPL
					26/10/2022	26/10/2022
						SOLID
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		0.01
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U	<5.90	<5.49
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U	<5.90	<5.49
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U	<5.90	<5.49
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U	<14.7	<13.7
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N	<8.85	<8.23
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U	<29.5	<27.4
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		0.01
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		0.03
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U	6.01	8.51
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U	<5.90	7.92
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U	<5.90	<5.49
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U	<14.7	13.9
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N	10.8	19.2
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U	<29.5	48.4



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102381
 Date Issued: 14/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATK_TP08A-101-ES-0.30	ATK_TP07A-103-ES-0.80	
					Sample Type	SOLID	LPL	SOLID
					Sampling Date	26/10/2022	26/10/2022	26/10/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3		<3
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<6		<5
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3		<3
Toluene	VOCHSAS	5	µg/kg [^]	UM		<7		<7
Dimethylphenols	PHEGCMS	0.0005	mg/l	N			<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N			<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N			0.0012	
Total Phenols	PHEGCMS	0.002	mg/l	N			0.0024	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N			<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		32.2		27.1
Description of Solid Material	CLANDPREP		-	N		CLAY		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N				0.400
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N				17.5
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N				0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N				0.644
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N				0.556
Asbestos Identification	SUB002		-	N		NAIIS		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.25		0.11

Analysis Report

Report Number: 22/NOV/COA/864703

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102381-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 26 October 2022	Sample Number:	864703
Date Received: 2 November 2022	6m Bottle:	
Test Date: 2 November 2022 to 4 November 2022	72m Bottle:	
Date Reported: 4 November 2022	Bio Bottle:	864703

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864703

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102381-001

Laboratory References

Date Sampled: 26 October 2022	Sample Number: 864703
Date Received: 2 November 2022	6m Bottle:
Test Date: 2 November 2022 to 4 November 2022	72m Bottle:
Date Reported: 4 November 2022	Bio Bottle: 864703

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.25	0.25	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/NOV/COA/864704

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102381-002

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 26 October 2022	Sample Number:	864704
Date Received: 2 November 2022	6m Bottle:	
Test Date: 2 November 2022 to 4 November 2022	72m Bottle:	
Date Reported: 4 November 2022	Bio Bottle:	864704

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864704

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102381-002

Laboratory References

Date Sampled: 26 October 2022
Date Received: 2 November 2022
Test Date: 2 November 2022 to 4 November 2022
Date Reported: 4 November 2022

Sample Number: 864704
6m Bottle:
72m Bottle:
Bio Bottle: 864704

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.11	0.11	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22102381
Date Issued: 14/11/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102381
 Date Issued: 14/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22102381
 Date Issued: 14/11/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22102381
Date Issued: 14/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22102530

Quote: BEC220926756 V1.3

Project Ref: H2060-22

Site: Lyneham banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

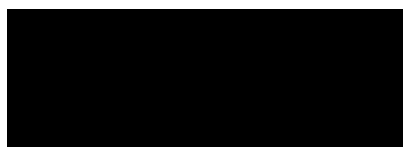
Date Received: 31/10/2022

Analysis Date: 21/11/2022

Date Issued: 22/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory



Reported by Account Manager

[REDACTED]
01283 554434



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22102530
Date Issued: 22/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22102530-001	ATK_TP12-103-ES-0.80	27/10/2022 16:21:00	SOLID	Soil Sample
22102530-002	ATK_TP11-101-ES-0.30	27/10/2022 16:21:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	002
					ATK_TP12-103-ES-0.80	ATK_TP11-101-ES-0.30
					LPL	SOLID
					27/10/2022	27/10/2022
					27/10/2022	27/10/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		0.90
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.04	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.267
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.267
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.054
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.267
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.267
pH	PHCONDW	1	pH units	U	8.2	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.7
Chloride as Cl	KONECL	2	mg/kg [^]	N		32
						70

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATK_TP12-103-ES-0.80		ATK_TP11-101-ES-0.30
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	27/10/2022	27/10/2022	27/10/2022
Chloride as Cl	KONENS	1	mg/l	U		14		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U		<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1	<0.1	
Nitrite as N	KONENS	0.01	mg/l	U		<0.01		
Nitrate as N	KONENS	0.2	mg/l	U		0.29		
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.06	0.18	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		<0.8 _D	<0.8 _D	
Complex Cyanide	SFAPI	0.02	mg/l	U		<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7	<0.7	
Free Cyanide	SFAPI	0.02	mg/l	U		<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7	<0.7	
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.7	<0.7	
Sulphide as S	SFAPI	0.02	mg/l	U		<0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.7	1.0	
Total Cyanide	SFAPI	0.02	mg/l	U		<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7	<0.7	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		0.81	2.52	
Leached Organic Carbon	TOCW	0.4	mg/l	U		1.90		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		32.6	25.0	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102530
 Date Issued: 22/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_TP12-103-ES-0.80		ATK_TP11-101-ES-0.30	
					Sample Type	LPL	SOLID	SOLID	
					Sampling Date	27/10/2022	27/10/2022	27/10/2022	
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		0.2		<0.2	
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		9.1		8.4	
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		18.1		21.7	
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		1048		638.3	
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5	
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		57.0		37.3	
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5		0.7	
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		25.5		28.4	
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		106.4		98.2	
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		35.9		40.5	
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		42400		9050	
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		36600		35100	
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3220		3660	
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		1.4		2.5	
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		73		58	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001				
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002				
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001				
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001				

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_TP12-103-ES-0.80		ATK_TP11-101-ES-0.30	
					Sample Type	LPL	SOLID	SOLID	
					Sampling Date	27/10/2022	27/10/2022	27/10/2022	
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001				
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003				
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.002				
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	<0.002				
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.01				
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	49				
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5				
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5				
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10				
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5				
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5				
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<14	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<14	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<27		<27	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<14	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<14	
Acenaphthene	PAHMSW	0.01	µg/l	U	0.03				
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01				
Anthracene	PAHMSW	0.01	µg/l	U	<0.01				



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102530
 Date Issued: 22/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID			
					Customer ID	001	002	
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	27/10/2022	27/10/2022	27/10/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	ATK_TP12-103-ES-0.80	<0.01		
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	ATK_TP11-101-ES-0.30	<0.01		
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.01		
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		
Chrysene	PAHMSW	0.01	µg/l	U		<0.01		
Coronene	PAHMSW	0.01	µg/l	U		<0.01		
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.01		
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		
Fluorene	PAHMSW	0.01	µg/l	U		<0.01		
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.01		
Naphthalene	PAHMSW	0.01	µg/l	U		0.04		
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.01		
Pyrene	PAHMSW	0.01	µg/l	U		<0.01		
Total PAH 16	PAHMSW	0.16	µg/l	U		0.20		
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.11	<0.11	
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.11	<0.11	
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATK_TP12-103-ES-0.80		ATK_TP11-101-ES-0.30
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	27/10/2022	27/10/2022	27/10/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.11	<0.11	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11	<0.11	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.71	<1.75	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01			
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01			

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	002
					Customer ID	
					ATK_TP12-103-ES-0.80	
					ATK_TP11-101-ES-0.30	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					27/10/2022	27/10/2022
						27/10/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.35
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.35* B
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.46
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		<13.6
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<8.19
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		<27.3
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.04	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.35
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.35* B
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.46
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		<13.6
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		23.4
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		<27.3



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102530
 Date Issued: 22/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATK_TP12-103-ES-0.80	ATK_TP11-101-ES-0.30	
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	27/10/2022	27/10/2022	27/10/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1	<2	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3	<3	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<6	<6	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3	<3	
Toluene	VOCHSAS	5	µg/kg [^]	UM		<7	<8	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005			
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005			
Phenol	PHEGCMS	0.0005	mg/l	N	0.0009			
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0021			
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005			
Total Moisture at 35°C	CLANDPREP	0.1	%	N		25.2	26.7	
Description of Solid Material	CLANDPREP		-	N		CLAY	CLAY	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400		
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		8.5		
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.648		
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.552		
Asbestos Identification	SUB002		-	N		NAIIS	NAIIS	
Total Nitrogen as N	SUB022	0.08	%	N		0.05	0.20	

Analysis Report

Report Number: 22/NOV/COA/864821

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102530-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 27 October 2022	Sample Number:	864821
Date Received: 3 November 2022	6m Bottle:	
Test Date: 3 November 2022 to 9 November 2022	72m Bottle:	
Date Reported: 9 November 2022	Bio Bottle:	864821

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/864821

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102530-001

Laboratory References

Date Sampled: 27 October 2022	Sample Number: 864821
Date Received: 3 November 2022	6m Bottle:
Test Date: 3 November 2022 to 9 November 2022	72m Bottle:
Date Reported: 9 November 2022	Bio Bottle: 864821

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.05	0.05	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/NOV/COA/864822

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102530-002

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 27 October 2022	Sample Number:	864822
Date Received: 3 November 2022	6m Bottle:	
Test Date: 3 November 2022 to 9 November 2022	72m Bottle:	
Date Reported: 9 November 2022	Bio Bottle:	864822

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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SOCOTEC UK Limited
Reg Office: SOCOTEC House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
Incorporated in England:02880501

Analysis Report

Report Number: 22/NOV/COA/864822

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22102530-002

Laboratory References

Date Sampled: 27 October 2022
Date Received: 3 November 2022
Test Date: 3 November 2022 to 9 November 2022
Date Reported: 9 November 2022

Sample Number: 864822
6m Bottle:
72m Bottle:
Bio Bottle: 864822

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.20	0.20	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102530
 Date Issued: 22/11/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATK_TP12-103-ES-0.80	22102530-001	BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	GROHSA/BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	GROHSA/BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	GROHSA/BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	GROHSA/BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	GROHSA/BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	GROHSA/BTEXHSA						✓
ATK_TP12-103-ES-0.80	22102530-001	GROHSA/BTEXHSA						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102530
 Date Issued: 22/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22102530
 Date Issued: 22/11/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22102530
Date Issued: 22/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22110608

Quote: BEC220926756 V2.1

Project Ref: H2060-22

Site: H2060-Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 07/11/2022

Analysis Date: 28/11/2022

Date Issued: 28/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Account Manager

[REDACTED]
01283 554434



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-Lyneham Banks
Project No: 22110608
Date Issued: 28/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22110608-001	ATK_BH05-2-ES-0.70-1.00	01/11/2022 00:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH05-2-ES-0.70-1.00	
Sample Type					LPL	SOLID
Sampling Date					01/11/2022	01/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.30
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.09	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.248
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.248
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.05
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.248
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.248
pH	PHCONDW	1	pH units	U	8.3	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.1
Chloride as Cl	KONECL	2	mg/kg [^]	N		61

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH05-2-ES-0.70-1.00	
Sample Type					LPL	SOLID
Sampling Date					01/11/2022	01/11/2022
Chloride as Cl	KONENS	1	mg/l	U	40	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	<0.01	
Nitrate as N	KONENS	0.2	mg/l	U	7.94	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.20
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		11.8
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		2.47
Leached Organic Carbon	TOCW	0.4	mg/l	U	7.73	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		12.4

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH05-2-ES-0.70-1.00	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					01/11/2022	01/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		17.8
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		22.0
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		80.9
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		12.9
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		15.7
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		51.3
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		58.8
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		22700
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		14300
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		2100
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		2.3
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		177
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	0.00019	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.004	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH05-2-ES-0.70-1.00	
Sample Type					LPL	SOLID
Sampling Date					01/11/2022	01/11/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.003	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.05	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	128	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<25
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12
Acenaphthene	PAHMSW	0.01	µg/l	U	0.01	
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01	
Anthracene	PAHMSW	0.01	µg/l	U	<0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-Lyneham Banks
 Project No: 22110608
 Date Issued: 28/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH05-2-ES-0.70-1.00	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					01/11/2022	01/11/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Chrysene	PAHMSW	0.01	µg/l	U	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	0.03	
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01	
Pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	0.19	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.10
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.10* _B
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10

Analysis Results

					Sample ID	001	
					Customer ID	ATK_BH05-2-ES-0.70-1.00	
					Sample Type	LPL	SOLID
					Sampling Date	01/11/2022	01/11/2022
Analysis	Method Code	MDL	Units	Accred.			
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.10	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.58	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01		
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01		
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01		
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.01		
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	0.01		



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-Lyneham Banks
 Project No: 22110608
 Date Issued: 28/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH05-2-ES-0.70-1.00	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					01/11/2022	01/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.02	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.95
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.95
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.95
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		<12.4
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<7.43
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		<24.8
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.01	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.03	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		8.88
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		11.6
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		7.95
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		19.9
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		18.1
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		65.4



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-Lyneham Banks
 Project No: 22110608
 Date Issued: 28/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH05-2-ES-0.70-1.00	
					LPL	SOLID
					01/11/2022	01/11/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2
Toluene	VOCHSAS	5	µg/kg [^]	UM		<6
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0032	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0044	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		19.2
Description of Solid Material	CLANDPREP		-	N		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.700
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.500
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.15

Analysis Report

Report Number: 22/NOV/COA/865253

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22110608-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 1 November 2022	Sample Number:	865253
Date Received: 9 November 2022	6m Bottle:	
Test Date: 9 November 2022 to 14 November 2022	72m Bottle:	
Date Reported: 14 November 2022	Bio Bottle:	865253

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/865253

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22110608-001

Laboratory References

Date Sampled: 1 November 2022
Date Received: 9 November 2022
Test Date: 9 November 2022 to 14 November 2022
Date Reported: 14 November 2022

Sample Number: 865253
6m Bottle:
72m Bottle:
Bio Bottle: 865253

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.15	0.15	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-Lyneham Banks
Project No: 22110608
Date Issued: 28/11/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATK_BH05-2-ES-0.70-1.00	22110608-001	VOHSAS						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-Lyneham Banks
 Project No: 22110608
 Date Issued: 28/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-Lyneham Banks
 Project No: 22110608
 Date Issued: 28/11/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-Lyneham Banks
Project No: 22110608
Date Issued: 28/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22111179

Quote: BEC220926756 V2.1

Project Ref: H2060-22

Site: Lyneham banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 11/11/2022

Analysis Date: 02/12/2022

Date Issued: 05/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22111179
Date Issued: 05/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22111179-001	ATK_BH08-102-ES-1.30-1.40	10/11/2022 17:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH08-102-ES-1.30-1.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					10/11/2022	10/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		10.0
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.64	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.268
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.268
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.054
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.268
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.268
pH	PHCONDW	1	pH units	U	8.5	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		9.6
Chloride as Cl	KONECL	2	mg/kg [^]	N		79

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH08-102-ES-1.30-1.40	
Sample Type					LPL	SOLID
Sampling Date					10/11/2022	10/11/2022
Chloride as Cl	KONENS	1	mg/l	U	36	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	0.005	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	0.02	
Nitrate as N	KONENS	0.2	mg/l	U	0.49	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.19
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		<0.8 D
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7
Free Cyanide	SFAPI	0.02	mg/l	U	0.15	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.7
Sulphide as S	SFAPI	0.02	mg/l	U	0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.7
Total Cyanide	SFAPI	0.02	mg/l	U	0.15	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		1.16
Leached Organic Carbon	TOCW	0.4	mg/l	U	26.1	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		21.8



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111179
 Date Issued: 05/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH08-102-ES-1.30-1.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					10/11/2022	10/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		10.9
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		18.0
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		581.7
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		40.9
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		24.9
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		80.3
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		31.7
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		50300
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		31900
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3500
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		0.9
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		303
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.004	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH08-102-ES-1.30-1.40	
Sample Type					LPL	SOLID
Sampling Date					10/11/2022	10/11/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.006	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.004	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.03	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	26	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<27
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13
Acenaphthene	PAHMSW	0.01	µg/l	U	<0.01	
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01	
Anthracene	PAHMSW	0.01	µg/l	U	<0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111179
 Date Issued: 05/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH08-102-ES-1.30-1.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					10/11/2022	10/11/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01* _B	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Chrysene	PAHMSW	0.01	µg/l	U	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	<0.01* _B	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	0.02	
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01	
Pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	0.17	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.11
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.11
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH08-102-ES-1.30-1.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					10/11/2022	10/11/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.11
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.71
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.02 _D	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.03	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.03	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.06	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	0.06	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111179
 Date Issued: 05/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH08-102-ES-1.30-1.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					10/11/2022	10/11/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.17	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.35
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		5.91
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.35
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		<13.4
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<8.03
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		<26.8
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.04	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.04	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.09	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	0.10	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.27	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.35
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		10.9
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.35
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		<13.4
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		<8.03
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		<26.8



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111179
 Date Issued: 05/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH08-102-ES-1.30-1.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					10/11/2022	10/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<6
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3
Toluene	VOCHSAS	5	µg/kg [^]	UM		<7
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0191	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0203	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		25.3
Description of Solid Material	CLANDPREP		-	N		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.408
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.342
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.08

Analysis Report

Report Number: 22/NOV/COA/865791

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22111179-001

Quote Ref:
Date Sampled: 10 November 2022
Date Received: 16 November 2022
Test Date: 16 November 2022 to 21 November 2022
Date Reported: 21 November 2022

Laboratory References
Sample Matrix: SOIL
Sample Number: 865791
6m Bottle:
72m Bottle:
Bio Bottle: 865791

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by SOCOTEC UK Limited

Report Authorised By:

Head of Reporting

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/865791

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22111179-001

Laboratory References

Date Sampled: 10 November 2022 Sample Number: 865791
Date Received: 16 November 2022 6m Bottle:
Test Date: 16 November 2022 to 21 November 2022 72m Bottle:
Date Reported: 21 November 2022 Bio Bottle: 865791

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.08	0.08	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22111179
Date Issued: 05/12/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111179
 Date Issued: 05/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111179
 Date Issued: 05/12/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22111179
Date Issued: 05/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22111309

Quote: BEC220926756 V2.1

Project Ref: H2060-22

Site: Lyneham banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

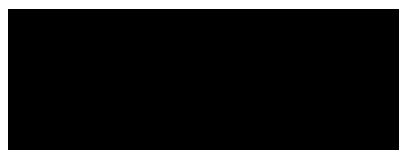
Date Received: 14/11/2022

Analysis Date: 06/12/2022

Date Issued: 07/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory



Reported by Customer Service Specialist

[REDACTED]
01283 554434



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22111309
Date Issued: 07/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22111309-001	ATK_BH16-102-ES-0.70-0.90	10/11/2022 16:11:00	SOLID	Soil Sample
22111309-002	ATK_BH02-102-ES-0.50-0.70	10/11/2022 16:11:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH16-102-ES-0.70-0.90		ATK_BH02-102-ES-0.50-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	10/11/2022	10/11/2022	10/11/2022	10/11/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.30		1.20	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.13		0.08		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020		<0.020		
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100		<0.100		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.266		<0.254	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013		<0.013	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.266		<0.254	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.053		<0.051	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.266* _B		<0.254* _B	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013		<0.013	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.266		<0.254	
pH	PHCONDW	1	pH units	U	8.1		7.8		
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.7		8.4	
Chloride as Cl	KONECL	2	mg/kg [^]	N		26		22	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH16-102-ES-0.70-0.90		ATK_BH02-102-ES-0.50-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	10/11/2022	10/11/2022	10/11/2022	10/11/2022
Chloride as Cl	KONENS	1	mg/l	U	14		8		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003		<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1		<0.1	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01		<0.01		
Nitrate as N	KONENS	0.2	mg/l	U	<0.20		0.27		
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.04		0.24	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		<0.8 _D		<0.8 _D	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7		<0.6	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7		<0.6	
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.7		1.1	
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.7		<0.6	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7		<0.6	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		1.10		2.05	
Leached Organic Carbon	TOCW	0.4	mg/l	U	2.19		8.77		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		12.4		13.6	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID	
					001		002	
					ATK_BH16-102-ES-0.70-0.90		ATK_BH02-102-ES-0.50-0.70	
					LPL	SOLID	LPL	SOLID
					10/11/2022	10/11/2022	10/11/2022	10/11/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2		0.2
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		19.0		25.5
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		18.7		28.1
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		288.5		363.9
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		40.2		23.6
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		27.1		28.1
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		87.1		92.7
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		34.7		110
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		30200		109000
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		30900		26000
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3210		4860
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		2.6		2.3
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		2010		2410
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	0.00012		0.00007	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		0.003	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID		Sample Type		Sampling Date	
					001		002		LPL	SOLID	LPL	SOLID
					ATK_BH16-102-ES-0.70-0.90		ATK_BH02-102-ES-0.50-0.70					
									10/11/2022	10/11/2022	10/11/2022	10/11/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001					
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003		<0.00003					
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		0.002					
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.003		0.007					
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.03		0.14					
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	36		1420					
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5					
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5					
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10		<10					
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5					
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5					
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13				
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13				
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<27		<25				
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13				
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13				
Acenaphthene	PAHMSW	0.01	µg/l	U	<0.01		0.03					
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01		<0.01					
Anthracene	PAHMSW	0.01	µg/l	U	<0.01		<0.01					



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH16-102-ES-0.70-0.90		ATK_BH02-102-ES-0.50-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	10/11/2022	10/11/2022	10/11/2022	10/11/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01* _B		<0.01* _B	
Chrysene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Coronene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Fluorene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U		0.08		0.31	
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U		0.23		0.48	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM			<0.11		<0.10
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U			<0.11		<0.10
Anthracene	PAHMSUS	0.08	mg/kg [^]	U			<0.11		<0.10
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			<0.11		<0.10



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH16-102-ES-0.70-0.90		ATK_BH02-102-ES-0.50-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	10/11/2022	10/11/2022	10/11/2022	10/11/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.11		<0.10	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		0.10	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.70		1.63	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		IS*		IS*	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		IS*		IS*	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		IS*		IS*	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		IS*		IS*	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		IS		IS	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID	
					001		002	
					ATK_BH16-102-ES-0.70-0.90		ATK_BH02-102-ES-0.50-0.70	
					LPL	SOLID	LPL	SOLID
					10/11/2022	10/11/2022	10/11/2022	10/11/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	IS*		IS*	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<5.33		<5.08
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<5.33		<5.08
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<5.33		<5.08
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^A	U		<13.3		<12.7
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^A	N		<7.99		<7.62
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^A	U		<26.6		<25.4
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	IS*		IS*	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	IS*		IS*	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	IS*		IS*	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	IS*		IS*	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	IS		IS	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	IS*		IS*	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		<5.33		<5.08
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		8.74		<5.08
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		<5.33		5.11
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^A	U		15.3		42.5
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^A	N		10.7		26.1
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^A	U		43.3		76.6



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH16-102-ES-0.70-0.90		ATK_BH02-102-ES-0.50-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	10/11/2022	10/11/2022	10/11/2022	10/11/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1		<1	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3		<3	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5		<5	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3		<3	
Toluene	VOCHSAS	5	µg/kg [^]	UM		<6		<7	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	IS			IS	
Methylphenols	PHEGCMS	0.0005	mg/l	N	IS			IS	
Phenol	PHEGCMS	0.0005	mg/l	N	IS			IS	
Total Phenols	PHEGCMS	0.002	mg/l	N	IS			IS	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	IS			IS	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		24.9		21.3	
Description of Solid Material	CLANDPREP		-	N		CLAY		CLAY	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250		0.250	
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0		0	
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		0	
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.414		0.419	
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.336		0.331	
Asbestos Identification	SUB002		-	N		NAIIS		CH, AM	
Asbestos Stage 3	SUB002	0.001	%	N				0.013	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID		Sample Type		Sampling Date							
					001	002	ATK_BH16-102-ES-0.70-0.90	ATK_BH02-102-ES-0.50-0.70	LPL	SOLID	LPL	SOLID	10/11/2022	10/11/2022	10/11/2022	10/11/2022		
Total Nitrogen as N	SUB022	0.08	%	N									0.06					0.12

Analysis Report

Report Number: 22/NOV/COA/865923

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22111309-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 10 November 2022	Sample Number:	865923
Date Received: 17 November 2022	6m Bottle:	
Test Date: 17 November 2022 to 21 November 2022	72m Bottle:	
Date Reported: 21 November 2022	Bio Bottle:	865923

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

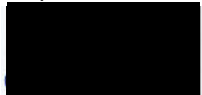
Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:



Head of Reporting

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/865923

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22111309-001

Laboratory References

Date Sampled: 10 November 2022 Sample Number: 865923
Date Received: 17 November 2022 6m Bottle:
Test Date: 17 November 2022 to 21 November 2022 72m Bottle:
Date Reported: 21 November 2022 Bio Bottle: 865923

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.06	0.06	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/NOV/COA/865924

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22111309-002

Laboratory References

Quote Ref:		Sample Matrix	SOIL
Date Sampled:	10 November 2022	Sample Number:	865924
Date Received:	17 November 2022	6m Bottle:	
Test Date:	17 November 2022 to 21 November 2022	72m Bottle:	
Date Reported:	21 November 2022	Bio Bottle:	865924

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:

[Redacted]

[Redacted]

Head of Reporting

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/NOV/COA/865924

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22111309-002

Laboratory References

Date Sampled: 10 November 2022 Sample Number: 865924
Date Received: 17 November 2022 6m Bottle:
Test Date: 17 November 2022 to 21 November 2022 72m Bottle:
Date Reported: 21 November 2022 Bio Bottle: 865924

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.12	0.12	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATK_BH16-102-ES-0.70-0.90	22111309-001	SFAPI						✓
ATK_BH02-102-ES-0.50-0.70	22111309-002	SFAPI						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22111309
 Date Issued: 07/12/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB002	Asbestos Stage 2+3: Quantification	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22111309
Date Issued: 07/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22112272

Quote: BEC220926756 V2.1

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

Date Received: 23/11/2022

Analysis Date: 23/12/2022

Date Issued: 23/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead
[REDACTED]

01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22112272
Date Issued: 23/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22112272-001	ATKBH12-1-ES-0.50	18/11/2022 12:05:00	SOLID	Soil Sample
22112272-002	ATKBH09-2-ES-0.70	17/11/2022 12:05:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATKBH12-1-ES-0.50	ATKBH09-2-ES-0.70	
					Sample Type	SOLID	LPL	SOLID
					Sampling Date	18/11/2022	17/11/2022	17/11/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		3.30		1.30
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U			<0.02	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N			<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N			<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N			<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U			<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.297		<0.3
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		0.029		0.026
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.297* B		<0.300* B
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.060* B		<0.060* B
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.297		<0.300
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.015		<0.015
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.297		<0.300
pH	PHCONDW	1	pH units	U			8.1	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.1		8.4
Chloride as Cl	KONECL	2	mg/kg [^]	N		102		102

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKBH12-1-ES-0.50		ATKBH09-2-ES-0.70	
					Sample Type	SOLID	LPL	SOLID	
					Sampling Date	18/11/2022	17/11/2022	17/11/2022	
Chloride as Cl	KONENS	1	mg/l	U			49		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U			<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1		<0.1	
Nitrite as N	KONENS	0.01	mg/l	U			<0.01		
Nitrate as N	KONENS	0.2	mg/l	U			24.9		
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.16		0.07	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		10.7		82.6	
Complex Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7		<0.8	
Free Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7		<0.8	
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.7		<0.8	
Sulphide as S	SFAPI	0.02	mg/l	U			<0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.7		<0.8	
Total Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7		<0.8	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		3.77		4.10	
Leached Organic Carbon	TOCW	0.4	mg/l	U			12.1		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		20.6		27.9	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112272
 Date Issued: 23/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKBH12-1-ES-0.50		ATKBH09-2-ES-0.70	
					Sample Type	SOLID		LPL	SOLID
					Sampling Date	18/11/2022		17/11/2022	17/11/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM	<0.2		<0.2		
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM	17.0		12.9		
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM	28.6		24.8		
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM	178.5		684.1		
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM	<0.5		<0.5		
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM	29.8		38.9		
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM	0.6		0.9		
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM	33.1		31.1		
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM	97.5		105.9		
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM	34.5		51.0		
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U	14500		13600		
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM	30500		30500		
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U	3250		3630		
Boron as B	ICPBOR	0.5	mg/kg [^]	UM	2.6		2.3		
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM	281		119		
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U		<0.001			
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U		<0.00002			
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U		<0.001			
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U		0.002			

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKBH12-1-ES-0.50		ATKBH09-2-ES-0.70	
					Sample Type	SOLID	LPL	SOLID	
					Sampling Date	18/11/2022	17/11/2022	17/11/2022	
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U			<0.001		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U			<0.00003		
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U			0.006		
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U			0.003		
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U			0.03		
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U			43		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N			<10		
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<15			<15	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<15			<15	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM	<30			<30	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<15* _B			<15* _B	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	29			26	
Acenaphthene	PAHMSW	0.01	µg/l	U			0.02		
Acenaphthylene	PAHMSW	0.01	µg/l	U			<0.01		
Anthracene	PAHMSW	0.01	µg/l	U			<0.01		



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112272
 Date Issued: 23/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKBH12-1-ES-0.50		ATKBH09-2-ES-0.70	
					Sample Type	SOLID	LPL	SOLID	
					Sampling Date	18/11/2022	17/11/2022	17/11/2022	
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U			<0.01		
Chrysene	PAHMSW	0.01	µg/l	U			<0.01		
Coronene	PAHMSW	0.01	µg/l	U			<0.01		
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U			<0.01		
Fluoranthene	PAHMSW	0.01	µg/l	U			<0.01		
Fluorene	PAHMSW	0.01	µg/l	U			<0.01		
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Naphthalene	PAHMSW	0.01	µg/l	U			<0.01		
Phenanthrene	PAHMSW	0.01	µg/l	U			<0.01		
Pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Total PAH 16	PAHMSW	0.16	µg/l	U			0.17		
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.12		<0.12	
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.12		<0.12	
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKBH12-1-ES-0.50		ATKBH09-2-ES-0.70	
					Sample Type	SOLID	LPL	SOLID	
					Sampling Date	18/11/2022	17/11/2022	17/11/2022	
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.12		<0.12	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.12	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.90		<1.92	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01		
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01		
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01		
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01		
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N			<0.01		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	002		
					001	002		
					Customer ID	ATKBH12-1-ES-0.50	ATKBH09-2-ES-0.70	
					Sample Type	SOLID	LPL	SOLID
					Sampling Date	18/11/2022	17/11/2022	17/11/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			<0.01	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.94		<6.01
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.94		<6.01
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.94		<6.01
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		<14.9		<15.0
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<8.92		<9.01
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		<29.7		<30.0
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			<0.01	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			0.02	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N			0.02	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			0.07	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.94		<6.01
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.94		<6.01
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.94		<6.01
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		<14.9		<15.0
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		<8.92		<9.01
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		<29.7		<30.0



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112272
 Date Issued: 23/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATKBH12-1-ES-0.50	ATKBH09-2-ES-0.70	
					Sample Type	SOLID	LPL	SOLID
					Sampling Date	18/11/2022	17/11/2022	17/11/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3		<3
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<6		<6
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3		<3
Toluene	VOCHSAS	5	µg/kg [^]	UM		<7		<7
Dimethylphenols	PHEGCMS	0.0005	mg/l	N			<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N			<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N			<0.0005	
Total Phenols	PHEGCMS	0.002	mg/l	N			<0.0020	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N			<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		32.7		33.4
Description of Solid Material	CLANDPREP		-	N		CLAY		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N				0.250
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N				0.5
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N				0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N				0.388
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N				0.362
Asbestos Identification	SUB002		-	N		NAIIS		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.29		0.31

Analysis Report

Report Number: 22/DEC/COA/868134

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22112272-001

Quote Ref:

Date Sampled: 18 November 2022

Date Received: 15 December 2022

Test Date: 15 December 2022 to 23 December 2022

Date Reported: 23 December 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 868134

6m Bottle:

72m Bottle:

Bio Bottle: 868134

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/868134

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22112272-001

Laboratory References

Date Sampled: 18 November 2022 Sample Number: 868134
Date Received: 15 December 2022 6m Bottle:
Test Date: 15 December 2022 to 23 December 2022 72m Bottle:
Date Reported: 23 December 2022 Bio Bottle: 868134

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.29	0.29	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/DEC/COA/868135

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22112272-002

Quote Ref:
Date Sampled: 17 November 2022
Date Received: 15 December 2022
Test Date: 15 December 2022 to 23 December 2022
Date Reported: 23 December 2022

Laboratory References
Sample Matrix: SOIL
Sample Number: 868135
6m Bottle:
72m Bottle:
Bio Bottle: 868135

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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SOCOTEC UK Limited
Reg Office: SOCOTEC House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
Incorporated in England:02880501

Analysis Report

Report Number: 22/DEC/COA/868135

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22112272-002

Laboratory References

Date Sampled: 17 November 2022 Sample Number: 868135
Date Received: 15 December 2022 6m Bottle:
Test Date: 15 December 2022 to 23 December 2022 72m Bottle:
Date Reported: 23 December 2022 Bio Bottle: 868135

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.31	0.31	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22112272
Date Issued: 23/12/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112272
 Date Issued: 23/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112272
 Date Issued: 23/12/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22112272
Date Issued: 23/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22112350

Quote: BEC220926756 V2.1

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 24/11/2022

Analysis Date: 29/12/2022

Date Issued: 29/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22112350
Date Issued: 29/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22112350-001	ATKBH04-4-ES-2.50	21/11/2022 12:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKBH04-4-ES-2.50	
Sample Type					LPL	SOLID
Sampling Date					21/11/2022	21/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		7.20
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.51	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.272
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.014
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.272* _B
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.055* _B
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.272
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.014
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.272
pH	PHCONDW	1	pH units	U	8.1	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.1
Chloride as Cl	KONECL	2	mg/kg [^]	N		21



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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH04-4-ES-2.50	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					21/11/2022	21/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Chloride as Cl	KONENS	1	mg/l	U	9	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	0.04	
Nitrate as N	KONENS	0.2	mg/l	U	0.94	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.12
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		<0.8 _D
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.7
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.7
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.7
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		1.46
Leached Organic Carbon	TOCW	0.4	mg/l	U	3.44	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		9.0



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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH04-4-ES-2.50	
					LPL	SOLID
					21/11/2022	21/11/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		16.3
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		15.6
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		262.1
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		34.8
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		35.7
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		51.2
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		83.2
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		21800
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		24300
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3380
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		<0.5
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		117
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	0.00011	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	

Analysis Results

					Sample ID	001	
					Customer ID	ATKBH04-4-ES-2.50	
					Sample Type	LPL	SOLID
					Sampling Date	21/11/2022	21/11/2022
Analysis	Method Code	MDL	Units	Accred.			
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003		
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.004		
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.004		
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	<0.01		
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	100		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10		
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		
Benzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<14	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<14 [*] B	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg [^]	UM		<27	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<14	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<14	
Acenaphthene	PAHMSW	0.01	µg/l	U	0.03		
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01		
Anthracene	PAHMSW	0.01	µg/l	U	<0.01		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	Customer ID
					Sample Type	Sampling Date
					001	ATKBH04-4-ES-2.50
					LPL	SOLID
					21/11/2022	21/11/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01* _B	
Chrysene	PAHMSW	0.01	µg/l	U	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	0.06	
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01	
Pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	0.22	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		0.18
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.11
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		0.34
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		0.28

Analysis Results

					Sample ID	001	
					Customer ID	ATKBH04-4-ES-2.50	
					Sample Type	LPL	SOLID
					Sampling Date	21/11/2022	21/11/2022
Analysis	Method Code	MDL	Units	Accred.			
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.36
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.28
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM			0.26
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.20
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM			0.37
Coronene	PAHMSUS	0.08	mg/kg [^]	N			0.11
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			<0.11
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.77
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM			0.13
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.25
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM			<0.11
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM			0.49
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.64
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U			4.89
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		0.06	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.02 _D	



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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH04-4-ES-2.50	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					21/11/2022	21/11/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.11	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.44
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.44
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.44* B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		<13.6* B
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<8.16
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		<27.2
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.03* B	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.14* B	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.38	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	1.29	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	0.17	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	1.99	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		6.03
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		13.3
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		18.6
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		41.7
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		<8.16
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		85.1



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
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 Date Issued: 29/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001
					Customer ID	ATKBH04-4-ES-2.50
					Sample Type	LPL SOLID
					Sampling Date	21/11/2022 21/11/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3
Toluene	VOCHSAS	5	µg/kg [^]	UM		14
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0008	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0020	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		26.5
Description of Solid Material	CLANDPREP		-	N		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.630
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.570
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.05

Analysis Report

Report Number: 22/DEC/COA/868136

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22112350-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 21 November 2022	Sample Number:	868136
Date Received: 15 December 2022	6m Bottle:	
Test Date: 15 December 2022 to 28 December 2022	72m Bottle:	
Date Reported: 28 December 2022	Bio Bottle:	868136

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/868136

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22112350-001

Laboratory References

Date Sampled: 21 November 2022
Date Received: 15 December 2022
Test Date: 15 December 2022 to 28 December 2022
Date Reported: 28 December 2022

Sample Number: 868136
6m Bottle:
72m Bottle:
Bio Bottle: 868136

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.05	0.05	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
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Date Issued: 29/12/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
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 Project No: 22112350
 Date Issued: 29/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
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SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22112350
Date Issued: 29/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22112701

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

Date Received: 28/11/2022

Analysis Date: 13/12/2022

Date Issued: 13/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22112701
Date Issued: 13/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22112701-001	ATKRD_BH01 -2-ES-0.70	24/11/2022 12:00:00	SOLID	Soil Sample
22112701-002	ATKRD_BH01-3-ES-1.20	24/11/2022 12:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		
					Customer ID	ATKRD_BH01 -2-ES -0.70		ATKRD_BH01-3-ES-1.20		
					Sample Type	SOLID		LPL	SOLID	
					Sampling Date	24/11/2022		24/11/2022	24/11/2022	
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM					7.20	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U				0.18		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100			
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N			<0.005			
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100			
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N			<0.020			
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N			<0.100			
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N			<0.005			
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U			<0.100			
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM					<0.269	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM					<0.013	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM					<0.269	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM					<0.054	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM					<0.269	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM					<0.013	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM					<0.269	
pH	PHCONDW	1	pH units	U				8.7		
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM					7.7	
Chloride as Cl	KONECL	2	mg/kg [^]	N					92	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112701
 Date Issued: 13/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH01 -2-ES -0.70		ATKRD_BH01-3-ES-1.20	
					Sample Type	SOLID		LPL	SOLID
					Sampling Date	24/11/2022		24/11/2022	24/11/2022
Chloride as Cl	KONENS	1	mg/l	U			89		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U			0.007		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N				<0.1	
Nitrite as N	KONENS	0.01	mg/l	U			<0.01		
Nitrate as N	KONENS	0.2	mg/l	U			<0.20		
Nitrite as N	KONENS	0.02	mg/kg [^]	N				0.06	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N				0.7	
Complex Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM				<0.7	
Free Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM				<0.7	
Phenol Index	SFAPI	0.5	mg/kg [^]	U				<0.7	
Sulphide as S	SFAPI	0.02	mg/l	U			<0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N				<0.7	
Total Cyanide	SFAPI	0.02	mg/l	U			<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM				<0.7	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U				0.84	
Leached Organic Carbon	TOCW	0.4	mg/l	U			10.7		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM				15.5	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112701
 Date Issued: 13/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	002		
					001	002		
					Customer ID	ATKRD_BH01 -2-ES -0.70	ATKRD_BH01-3-ES-1.20	
					Sample Type	SOLID	LPL	SOLID
					Sampling Date	24/11/2022	24/11/2022	24/11/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM			<0.2	
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM			19.5	
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM			17.3	
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM			271.9	
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM			<0.5	
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM			17.4	
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM			<0.5	
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM			31.3	
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM			60.8	
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM			33.1	
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U			62600	
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM			33200	
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U			3770	
Boron as B	ICPBOR	0.5	mg/kg [^]	UM			1.1	
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM			297	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U		0.001		
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U		<0.00002		
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U		<0.001		
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U		0.002		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH01 -2-ES -0.70		ATKRD_BH01-3-ES-1.20	
					Sample Type	SOLID		LPL	SOLID
					Sampling Date	24/11/2022		24/11/2022	24/11/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U			0.004		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U			<0.00003		
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U			0.001		
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U			0.017		
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U			0.02		
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U			104		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N			<10		
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N			<5		
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM				<13	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM				<13	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM				<27	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM				<13	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM				<13	
Acenaphthene	PAHMSW	0.01	µg/l	U			2.94		
Acenaphthylene	PAHMSW	0.01	µg/l	U			0.14		
Anthracene	PAHMSW	0.01	µg/l	U			<0.01		



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112701
 Date Issued: 13/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH01 -2-ES -0.70		ATKRD_BH01-3-ES-1.20	
					Sample Type	SOLID		LPL	SOLID
					Sampling Date	24/11/2022		24/11/2022	24/11/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U			<0.01		
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U			<0.01		
Chrysene	PAHMSW	0.01	µg/l	U			<0.01		
Coronene	PAHMSW	0.01	µg/l	U			<0.01		
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U			<0.01		
Fluoranthene	PAHMSW	0.01	µg/l	U			0.01		
Fluorene	PAHMSW	0.01	µg/l	U			0.55		
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Naphthalene	PAHMSW	0.01	µg/l	U			2.26		
Phenanthrene	PAHMSW	0.01	µg/l	U			0.02		
Pyrene	PAHMSW	0.01	µg/l	U			<0.01		
Total PAH 16	PAHMSW	0.16	µg/l	U			6.02		
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM				<0.11	
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U				<0.11	
Anthracene	PAHMSUS	0.08	mg/kg [^]	U				<0.11	
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM				<0.11* B	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		
					Customer ID	ATKRD_BH01 -2-ES -0.70		ATKRD_BH01-3-ES-1.20		
					Sample Type	SOLID		LPL	SOLID	
					Sampling Date	24/11/2022		24/11/2022	24/11/2022	
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Coronene	PAHMSUS	0.08	mg/kg [^]	N					<0.11	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM					0.16* _B	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM					<0.11	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM					0.12	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U					1.78	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01		
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01		
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01		
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U				<0.01		
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N				<0.01		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH01 -2-ES -0.70		ATKRD_BH01-3-ES-1.20	
					Sample Type	SOLID	LPL	SOLID	
					Sampling Date	24/11/2022	24/11/2022	24/11/2022	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U			0.01		
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U					<5.38
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U					<5.38
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U					<5.38* _B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U					<13.4
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N					<8.06
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U					<26.9
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			0.03		
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			0.07		
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			<0.01		
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			0.01		
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N			<0.01		
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U			0.14		
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U					<5.38
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U					10.8
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U					9.61* _B
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U					<13.4* _B
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N					<8.06
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U					40.3



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112701
 Date Issued: 13/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	ATKRD_BH01 -2-ES -0.70	ATKRD_BH01-3-ES-1.20	
					Sample Type	SOLID	LPL	SOLID
					Sampling Date	24/11/2022	24/11/2022	24/11/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM			<1	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM			<3	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM			<5	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM			<3	
Toluene	VOCHSAS	5	µg/kg [^]	UM			8	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N		0.0008		
Methylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		
Phenol	PHEGCMS	0.0005	mg/l	N		0.0016		
Total Phenols	PHEGCMS	0.002	mg/l	N		0.0032		
Trimethylphenols	PHEGCMS	0.0005	mg/l	N		<0.0005		
Total Moisture at 35°C	CLANDPREP	0.1	%	N			25.6	
Description of Solid Material	CLANDPREP		-	N			CLAY	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N			0.400	
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N			0	
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N			0	
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N			0.654	
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N			0.546	
Asbestos Identification	SUB002		-	N	NAIIS		NAIIS	
Total Nitrogen as N	SUB022	0.08	%	N			<0.05	

Analysis Report

Report Number: 22/DEC/COA/866921

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22112701-02

Quote Ref:

Date Sampled: 24 November 2022

Date Received: 1 December 2022

Test Date: 1 December 2022 to 5 December 2022

Date Reported: 5 December 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 866921

6m Bottle:

72m Bottle:

Bio Bottle: 866921

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

This report may not be reproduced in part without the written permission of SOCOTEC UK Limited.

Analysis Report

Report Number: 22/DEC/COA/866921

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22112701-02

Laboratory References

Date Sampled: 24 November 2022
Date Received: 1 December 2022
Test Date: 1 December 2022 to 5 December 2022
Date Reported: 5 December 2022

Sample Number: 866921
6m Bottle:
72m Bottle:
Bio Bottle: 866921

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	0.04	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22112701
Date Issued: 13/12/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112701
 Date Issued: 13/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22112701
 Date Issued: 13/12/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22112701
Date Issued: 13/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22120121

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22 Lyneham

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 02/12/2022

Analysis Date: 15/12/2022

Date Issued: 15/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22120121
Date Issued: 15/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22120121-001	ATK_BH07-4-ES-0.50	28/11/2022 00:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH07-4-ES-0.50	
Sample Type					LPL	SOLID
Sampling Date					28/11/2022	28/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.60
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.06	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.258
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		0.017
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.258* B
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.052* B
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.258
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.258
pH	PHCONDW	1	pH units	U	8.2	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		7.8
Chloride as Cl	KONECL	2	mg/kg [^]	N		68

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH07-4-ES-0.50	
Sample Type					LPL	SOLID
Sampling Date					28/11/2022	28/11/2022
Chloride as Cl	KONENS	1	mg/l	U	3	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	<0.01	
Nitrate as N	KONENS	0.2	mg/l	U	5.63	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		1.21
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		8.4
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.5
Total Cyanide	SFAPI	0.02	mg/l	U	0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		5.89
Leached Organic Carbon	TOCW	0.4	mg/l	U	10.7	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		13.4



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120121
 Date Issued: 15/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH07-4-ES-0.50	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					28/11/2022	28/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		1.0
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		32.1
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		46.9
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		1049
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		31.0
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		0.8
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		29.3
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		145.7
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		336
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		3430
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		27500
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3680
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		1.1
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		254
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.004	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH07-4-ES-0.50	
Sample Type					LPL	SOLID
Sampling Date					28/11/2022	28/11/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.003	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.005	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.04	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	131	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg [^]	UM		<26
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13* _B
Toluene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		17
Acenaphthene	PAHMSW	0.01	µg/l	U	0.02	
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01	
Anthracene	PAHMSW	0.01	µg/l	U	<0.01	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH07-4-ES-0.50	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					28/11/2022	28/11/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Chrysene	PAHMSW	0.01	µg/l	U	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	0.10	
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01	
Pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	0.26	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.10
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.10
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		0.12

Analysis Results

					Sample ID	001	
					Customer ID	ATK_BH07-4-ES-0.50	
					Sample Type	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022
Analysis	Method Code	MDL	Units	Accred.			
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.14
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.23
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM			0.16
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.11
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM			0.19
Coronene	PAHMSUS	0.08	mg/kg [^]	N			<0.10
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			<0.10
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM			0.18
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM			<0.10
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.15
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM			<0.10
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM			<0.10
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM			0.16
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U			2.17
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02	D
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02	D
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02	D
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02	D
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.02	D

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATK_BH07-4-ES-0.50	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					28/11/2022	28/11/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.02	D
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.16
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.16
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.16* B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		<12.9* B
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<7.74
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		<25.8
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02	D
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02	D
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02*	B,D
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02	D
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.02	D
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.04	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		6.25
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.16
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.16
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		22.6
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		14.9
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		50.2



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120121
 Date Issued: 15/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATK_BH07-4-ES-0.50	
Sample Type					LPL	SOLID
Sampling Date					28/11/2022	28/11/2022
Analysis	Method Code	MDL	Units	Accred.		
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3
Toluene	VOCHSAS	5	µg/kg [^]	UM		63
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0042	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0054	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		22.5
Description of Solid Material	CLANDPREP		-	N		SILT
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		65.7
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.439
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.311
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.36

Analysis Report

Report Number: 22/DEC/COA/867389

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22120121-001

Quote Ref:
Date Sampled: 28 November 2022
Date Received: 7 December 2022
Test Date: 7 December 2022 to 12 December 2022
Date Reported: 12 December 2022

Laboratory References
Sample Matrix: SOIL
Sample Number: 867389
6m Bottle:
72m Bottle:
Bio Bottle: 867389

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/867389

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22120121-001

Laboratory References

Date Sampled: 28 November 2022	Sample Number: 867389
Date Received: 7 December 2022	6m Bottle:
Test Date: 7 December 2022 to 12 December 2022	72m Bottle:
Date Reported: 12 December 2022	Bio Bottle: 867389

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.36	0.36	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22120121
Date Issued: 15/12/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATK_BH07-4-ES-0.50	22120121-001	PHSOIL						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120121
 Date Issued: 15/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120121
 Date Issued: 15/12/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22120121
Date Issued: 15/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22120123

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

Date Received: 02/12/2022

Analysis Date: 29/12/2022

Date Issued: 29/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22120123
Date Issued: 29/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22120123-001	ATK-BH15-1-ES-0.30	28/11/2022 09:00:00	SOLID	Soil Sample
22120123-002	ATKRD_BH02-2-ES-0.70	28/11/2022 12:15:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK-BH15-1-ES-0.30		ATKRD_BH02-2-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.40		1.00*	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.06		0.17		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020		<0.020		
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100		<0.100		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.256		<0.209*	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013		<0.010*	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.256* _B		<0.209* _B	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.052* _B		<0.042* _B	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.256		<0.209*	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013		<0.010*	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.256		<0.209*	
pH	PHCONDW	1	pH units	U	8.2		10.9		
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.4		9.3*	
Chloride as Cl	KONECL	2	mg/kg [^]	N		12		39	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK-BH15-1-ES-0.30		ATKRD_BH02-2-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Chloride as Cl	KONENS	1	mg/l	U	4		7		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003		<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1		<0.1	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01		0.02		
Nitrate as N	KONENS	0.2	mg/l	U	<0.20		<0.20		
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.27		0.10	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		76.7		<0.8 _D	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.5		<0.5*	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.5		<0.5*	
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.5		<0.5*	
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6		<0.5	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.5		<0.5*	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		0.81		0.71*	
Leached Organic Carbon	TOCW	0.4	mg/l	U	2.83		8.11		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		10.4		6.5*	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK-BH15-1-ES-0.30		ATKRD_BH02-2-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2		<0.2*	
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		19.9		8.9*	
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		17.1		10.2*	
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		331.1		370.8*	
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5*	
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		39.8		11.3*	
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5*	
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		27.4		9.7*	
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		68.8		50.6*	
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		37.0		159*	
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		25900		836*	
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		31200		11800*	
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3590		805*	
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		2.1		2.4*	
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		28		109*	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		0.002		
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002		<0.00002		
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		0.005		
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.001		0.017		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK-BH15-1-ES-0.30		ATKRD_BH02-2-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		0.291		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003		<0.00003		
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001		
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.003		<0.002		
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.04		4.50		
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	13		133		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10		<10		
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<10*	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13* _B		<10* _B	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<26		<21*	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<10*	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<10*	
Acenaphthene	PAHMSW	0.01	µg/l	U	0.01		23.4		
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		
Anthracene	PAHMSW	0.01	µg/l	U	<0.01		5.34		



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22120123
 Date Issued: 29/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK-BH15-1-ES-0.30		ATKRD_BH02-2-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Chrysene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Coronene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		0.01	
Fluorene	PAHMSW	0.01	µg/l	U		<0.01		29.2	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U		0.06		4.88	
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.01		28.9	
Pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U		0.21		91.9	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM			<0.10		5.47*
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U			<0.10		0.12*
Anthracene	PAHMSUS	0.08	mg/kg [^]	U			<0.10		6.44*
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			<0.10		4.50*



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22120123
 Date Issued: 29/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK-BH15-1-ES-0.30		ATKRD_BH02-2-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		3.89*	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		4.29*	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		1.89*	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		2.01*	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		3.69*	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.10		0.49	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		0.27*	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		15.5*	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		4.82*	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		2.22*	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		4.49*	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		18.4*	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10		10.5*	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.64		88.5*	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D		<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D		<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D		<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D		<0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.02 _D		<0.01	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK-BH15-1-ES-0.30		ATKRD_BH02-2-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.02 _D		<0.01		
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.12		<4.18*	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		5.46		13.6*	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.12		14.4*	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		<12.8		37.7*	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<7.67		13.7	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		<25.6		78.2*	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		0.23		
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		0.30		
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02* _{B,D}		0.15* _B		
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02		<0.01		
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.02 _D		<0.01		
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.06		0.70		
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.12		<4.18*	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.12		65.4*	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.12		133*	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		<12.8		263*	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		<7.67		10.5	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		<25.6		473*	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK-BH15-1-ES-0.30		ATKRD_BH02-2-ES-0.70	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1		<1*	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3		<2*	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<6		<4*	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3		<2*	
Toluene	VOCHSAS	5	µg/kg [^]	UM		<7		14*	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		0.0307		
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		0.0039		
Phenol	PHEGCMS	0.0005	mg/l	N	0.0056		0.0019		
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0068		0.0443		
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		0.0078		
Total Moisture at 35°C	CLANDPREP	0.1	%	N		21.8		4.2	
Description of Solid Material	CLANDPREP		-	N		CLAY		COBBLES	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250		0.250	
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		100		82.7	
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		0	
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.428		0.494	
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.322		0.256	
Asbestos Identification	SUB002		-	N		NAIIS		NAIIS	
Total Nitrogen as N	SUB022	0.08	%	N		0.07		<0.05	

Analysis Report

Report Number: 22/DEC/COA/867388

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22120123-001

Quote Ref:
Date Sampled: 28 November 2022
Date Received: 7 December 2022
Test Date: 7 December 2022 to 12 December 2022
Date Reported: 12 December 2022

Laboratory References

Sample Matrix: SOIL
Sample Number: 867388
6m Bottle:
72m Bottle:
Bio Bottle: 867388

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/867388

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22120123-001

Laboratory References

Date Sampled: 28 November 2022	Sample Number: 867388
Date Received: 7 December 2022	6m Bottle:
Test Date: 7 December 2022 to 12 December 2022	72m Bottle:
Date Reported: 12 December 2022	Bio Bottle: 867388

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.07	0.07	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/DEC/COA/867390

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22120123-002

Quote Ref:
Date Sampled: 28 November 2022
Date Received: 7 December 2022
Test Date: 7 December 2022 to 12 December 2022
Date Reported: 12 December 2022

Laboratory References
Sample Matrix: SOIL
Sample Number: 867390
6m Bottle:
72m Bottle:
Bio Bottle: 867390

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

This report may not be reproduced in part without the written permission of SOCOTEC UK Limited.

SOCOTEC UK Limited
Reg Office: SOCOTEC House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
Incorporated in England:02880501

Analysis Report

Report Number: 22/DEC/COA/867390

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22120123-002

Laboratory References

Date Sampled: 28 November 2022	Sample Number: 867390
Date Received: 7 December 2022	6m Bottle:
Test Date: 7 December 2022 to 12 December 2022	72m Bottle:
Date Reported: 12 December 2022	Bio Bottle: 867390

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	< 0.04	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22120123
Date Issued: 29/12/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATKRD_BH02-2-ES-0.70	22120123-002	PAHMSW						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22120123
 Date Issued: 29/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 22120123
 Date Issued: 29/12/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 22120123
Date Issued: 29/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22120505

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22 Lyneham

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

Date Received: 06/12/2022

Analysis Date: 28/12/2022

Date Issued: 11/01/2023

Report Type: Final Version 04

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Key Account Manager
[REDACTED]



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22120505
Date Issued: 11/01/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22120505-001	ATK_BH06-4-ES-0.60	01/12/2022 00:00:00	SOLID	Soil Sample
22120505-002	ATK_BH01-1-ES-0.40	01/12/2022 00:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH06-4-ES-0.60		ATK_BH01-1-ES-0.40	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	01/12/2022	01/12/2022	01/12/2022	01/12/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		2.10		1.80	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.08		0.03		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.1		<0.1		
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	0.006		0.006		
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020		<0.020		
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100		<0.100		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.302		<0.266	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		0.028		<0.013	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.302* _B		<0.266* _B	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.060* _B		<0.053* _B	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.302		<0.266	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.015		<0.013	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.302		<0.266	
pH	PHCONDW	1	pH units	U	8.3		8.0		
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		7.7		8.1	
Chloride as Cl	KONECL	2	mg/kg [^]	N		27		24	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH06-4-ES-0.60		ATK_BH01-1-ES-0.40	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	01/12/2022	01/12/2022	01/12/2022	01/12/2022
Chloride as Cl	KONENS	1	mg/l	U	7		2		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003		<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1		<0.1	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01		<0.01		
Nitrate as N	KONENS	0.2	mg/l	U	10.2		0.65		
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.34		0.50	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		17.5		52.7	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.8		<0.7	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.8		<0.7	
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.8		<0.7	
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.8		<0.7	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.8		<0.7	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		8.00		4.01	
Leached Organic Carbon	TOCW	0.4	mg/l	U	8.49		7.85		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		24.1		17.1	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID	
					001		002	
					ATK_BH06-4-ES-0.60		ATK_BH01-1-ES-0.40	
					LPL	SOLID	LPL	SOLID
					01/12/2022	01/12/2022	01/12/2022	01/12/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2		0.4
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		16.6		28.7
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		61.9		51.8
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		527.8		450.5
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		40.6		24.8
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		0.5		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		35.2		27.8
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		112.8		132.3
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		67.3		115
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		16900		117000
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		31900		22500
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3640		4660
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		3.1		3.2
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		145		819
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		0.002	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	0.00077		0.00063	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.002		0.007	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH06-4-ES-0.60		ATK_BH01-1-ES-0.40	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	01/12/2022	01/12/2022	01/12/2022	01/12/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001		
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003		<0.00003		
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.003		0.002		
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.002		0.004		
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.03		0.15		
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	31		529		
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10		<10		
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5		
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	6		6		
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<15		<13	
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<15		<13	
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<30		<27	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<15* _B		<13* _B	
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		28		<13	
Acenaphthene	PAHMSW	0.01	µg/l	U	0.01		0.04		
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		
Anthracene	PAHMSW	0.01	µg/l	U	<0.01		<0.01		



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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH06-4-ES-0.60		ATK_BH01-1-ES-0.40	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	01/12/2022	01/12/2022	01/12/2022	01/12/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Chrysene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Coronene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Fluorene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U		0.07		0.08	
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U		0.22		0.25	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM			<0.12		<0.11
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U			<0.12		<0.11
Anthracene	PAHMSUS	0.08	mg/kg [^]	U			<0.12		<0.11
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			<0.12		0.13

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH06-4-ES-0.60		ATK_BH01-1-ES-0.40	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	01/12/2022	01/12/2022	01/12/2022	01/12/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		0.19	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		0.26	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		0.16	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		0.18	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		0.32	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.12		<0.11	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.11	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		0.38	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.11	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		0.14	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.11	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		<0.11	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.12		0.33	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.93		2.83	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		0.01		0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.01		0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		0.02		0.02	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		0.02		0.01	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH06-4-ES-0.60		ATK_BH01-1-ES-0.40	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	01/12/2022	01/12/2022	01/12/2022	01/12/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		0.06		0.06	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<6.04		<5.32	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		9.18		<5.32	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<6.04		<5.32	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		<15.1		18.7	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<9.06		<7.98	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		<30.2		<26.6	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01		<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01		<0.01	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01		<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		<0.01		<0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N		<0.01		<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U		0.03		0.02	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<6.04		10.3	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<6.04		14.1	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<6.04		14.1	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		<15.1		34.2	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		<9.06		19.0	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		<30.2		89.9	



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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATK_BH06-4-ES-0.60		ATK_BH01-1-ES-0.40	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	01/12/2022	01/12/2022	01/12/2022	01/12/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<2		<1	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3		<3	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<7		<6	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3		<3	
Toluene	VOCHSAS	5	µg/kg [^]	UM		61		28	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		<0.0005		
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		<0.0005		
Phenol	PHEGCMS	0.0005	mg/l	N	0.0154		<0.0005		
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0166		<0.0020		
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		<0.0005		
Total Moisture at 35°C	CLANDPREP	0.1	%	N		33.8		24.8	
Description of Solid Material	CLANDPREP		-	N		SILT		CLAY	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400		0.400	
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0		0	
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		0	
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.584		0.662	
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.616		0.538	
Asbestos Identification	SUB002		-	N		NAIIS		NAIIS	
Total Nitrogen as N	SUB022	0.08	%	N		0.43		0.18	



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Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATK_BH06-4-ES-0.60	22120505-001	BTEXHSA			✓			
ATK_BH06-4-ES-0.60	22120505-001	BTEXHSA			✓			
ATK_BH06-4-ES-0.60	22120505-001	BTEXHSA			✓			
ATK_BH06-4-ES-0.60	22120505-001	BTEXHSA			✓			
ATK_BH06-4-ES-0.60	22120505-001	BTEXHSA			✓			



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Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



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SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Project Report Notes

V3 issued - customer requested sample IDs changed.
 V4 issued - customer requested AGS sample ID amendment.

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22120505
Date Issued: 11/01/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22120762

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: Lyneham banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 08/12/2022

Analysis Date: 30/12/2022

Date Issued: 03/01/2023

Report Type: Final Version 02

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22120762
Date Issued: 03/01/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22120762-001	ATKRD_BH03-102-ES-2.40	06/12/2022 05:42:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH03-102-ES-2.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					06/12/2022	06/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		2.60
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.06	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.256* B
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.256* B
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.052* B
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.256
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013* B
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.256
pH	PHCONDW	1	pH units	U	8.3	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		9.0
Chloride as Cl	KONECL	2	mg/kg [^]	N		124



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22120762
 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH03-102-ES-2.40	
Sample Type					LPL	SOLID
Sampling Date					06/12/2022	06/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Chloride as Cl	KONENS	1	mg/l	U	68	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	<0.01	
Nitrate as N	KONENS	0.2	mg/l	U	<0.20	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.17
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		<0.8 D
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		0.48
Leached Organic Carbon	TOCW	0.4	mg/l	U	2.92	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		22.9



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22120762
 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH03-102-ES-2.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					06/12/2022	06/12/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		19.5
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		21.3
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		233.0
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		27.5
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		35.8
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		82.9
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		77.9
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		38500
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		25600
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		5950
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		1.4
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		201
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH03-102-ES-2.40	
Sample Type					LPL	SOLID
Sampling Date					06/12/2022	06/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.002	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.06	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	112	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13* _B
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg [^]	UM		<26
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13* _B
Toluene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13
Acenaphthene	PAHMSW	0.01	µg/l	U	0.06	
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01	
Anthracene	PAHMSW	0.01	µg/l	U	<0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22120762
 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH03-102-ES-2.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					06/12/2022	06/12/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Chrysene	PAHMSW	0.01	µg/l	U	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	0.18	
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01	
Pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	0.38	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.10
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.10
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22120762
 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH03-102-ES-2.40	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					06/12/2022	06/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg^	UM		<0.10
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg^	UM		<0.10
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg^	UM		<0.10
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg^	UM		<0.10
Chrysene	PAHMSUS	0.08	mg/kg^	UM		0.11
Coronene	PAHMSUS	0.08	mg/kg^	N		<0.10
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg^	UM		<0.10
Fluoranthene	PAHMSUS	0.08	mg/kg^	UM		0.15
Fluorene	PAHMSUS	0.08	mg/kg^	UM		<0.10
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg^	UM		<0.10
Naphthalene	PAHMSUS	0.08	mg/kg^	UM		<0.10
Phenanthrene	PAHMSUS	0.08	mg/kg^	UM		0.14
Pyrene	PAHMSUS	0.08	mg/kg^	UM		0.12
Total PAH 16	PAHMSUS	1.28	mg/kg^	U		1.74
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22120762
 Date Issued: 03/01/2023



Analysis Results

					Sample ID	001	
					Customer ID	ATKRD_BH03-102-ES-2.40	
					Sample Type	LPL	SOLID
					Sampling Date	06/12/2022	06/12/2022
Analysis	Method Code	MDL	Units	Accred.			
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01		
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<5.12	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		5.28	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		5.58	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^A	U		13.2	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^A	N		<7.68	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^A	U		32.5	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01		
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02		
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01		
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01		
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01		
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.04		
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		<5.12	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		6.45	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		8.13	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^A	U		17.8	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^A	N		8.39	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^A	U		39.4	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22120762
 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH03-102-ES-2.40	
Sample Type					LPL	SOLID
Sampling Date					06/12/2022	06/12/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2
Toluene	VOCHSAS	5	µg/kg [^]	UM		8
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	0.0007	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0006	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0021	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		21.9
Description of Solid Material	CLANDPREP		-	N		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.429
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.321
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		<0.05

Analysis Report

Report Number: 22/DEC/COA/868033

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22120762-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 6 December 2022	Sample Number:	868033
Date Received: 14 December 2022	6m Bottle:	
Test Date: 14 December 2022 to 23 December 2022	72m Bottle:	
Date Reported: 23 December 2022	Bio Bottle:	868033

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

This report may not be reproduced in part without the written permission of SOCOTEC UK Limited.

Analysis Report

Report Number: 22/DEC/COA/868033

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22120762-001

Laboratory References

Date Sampled: 6 December 2022
Date Received: 14 December 2022
Test Date: 14 December 2022 to 23 December 2022
Date Reported: 23 December 2022

Sample Number: 868033
6m Bottle:
72m Bottle:
Bio Bottle: 868033

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	< 0.04	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22120762
Date Issued: 03/01/2023

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATKRD_BH03-102-ES-2.40	22120762-001	PHEGCMS						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22120762
 Date Issued: 03/01/2023

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22120762
 Date Issued: 03/01/2023

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Project Report Notes

V2 - Sample ID Amended

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22120762
Date Issued: 03/01/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22121105

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: Lyneham banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 12/12/2022

Analysis Date: 23/12/2022

Date Issued: 23/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead
[REDACTED]

01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22121105
Date Issued: 23/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22121105-001	ATKRD_BH08-101-ES-2	08/12/2022 17:37:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH08-101-ES-2	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					08/12/2022	08/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.50
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.05	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.229
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		0.019
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.229
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.047
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.229
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.229
pH	PHCONDW	1	pH units	U	8.2	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.8
Chloride as Cl	KONECL	2	mg/kg [^]	N		70



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22121105
 Date Issued: 23/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH08-101-ES-2	
Sample Type					LPL	SOLID
Sampling Date					08/12/2022	08/12/2022
Chloride as Cl	KONENS	1	mg/l	U	20	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	<0.01	
Nitrate as N	KONENS	0.2	mg/l	U	0.24	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.17
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		1.4
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.5
Free Cyanide	SFAPI	0.02	mg/l	U	1.26	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.5
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.5
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.5
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		0.87
Leached Organic Carbon	TOCW	0.4	mg/l	U	2.90	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		3.4



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22121105
 Date Issued: 23/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001
					Customer ID	ATKRD_BH08-101-ES-2
					Sample Type	LPL SOLID
					Sampling Date	08/12/2022 08/12/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		0.6
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		11.2
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		21.7
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		368.9
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		11.3
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		9.1
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		76.9
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		62.1
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		281000
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		5250
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		13500
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		0.8
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		683
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.001	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.001	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH08-101-ES-2	
Sample Type					LPL	SOLID
Sampling Date					08/12/2022	08/12/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	0.00011	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	<0.002	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.05	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	516	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<23
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		19
Acenaphthene	PAHMSW	0.01	µg/l	U	0.71	
Acenaphthylene	PAHMSW	0.01	µg/l	U	0.05	
Anthracene	PAHMSW	0.01	µg/l	U	<0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22121105
 Date Issued: 23/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH08-101-ES-2	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					08/12/2022	08/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Chrysene	PAHMSW	0.01	µg/l	U	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	0.26	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	2.16	
Phenanthrene	PAHMSW	0.01	µg/l	U	0.15	
Pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	3.44	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		0.34
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.09
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		0.90
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		1.63

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH08-101-ES-2	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					08/12/2022	08/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		1.91
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		2.18
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		1.06
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		1.12
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		2.72
Coronene	PAHMSUS	0.08	mg/kg [^]	N		0.17
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		0.24
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		5.09
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		0.18
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		1.42
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		2.77
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		4.13
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		25.9
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22121105
 Date Issued: 23/12/2022



Analysis Results

					Sample ID	001	
					Customer ID	ATKRD_BH08-101-ES-2	
					Sample Type	LPL	SOLID
					Sampling Date	08/12/2022	08/12/2022
Analysis	Method Code	MDL	Units	Accred.			
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.02		
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.58	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		8.58	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		11.9	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		47.2	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<6.87	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		77.2	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01* _B		
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01* _B		
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01		
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.01		
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01		
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02		
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		6.19	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		21.4	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		37.7	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		116	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		18.2	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		200	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH08-101-ES-2	
Sample Type					LPL	SOLID
Sampling Date					08/12/2022	08/12/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<4
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2
Toluene	VOCHSAS	5	µg/kg [^]	UM		21
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	0.0013	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0026	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		12.7
Description of Solid Material	CLANDPREP		-	N		SAND
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.467
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.283
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		<0.05

Analysis Report

Report Number: 22/DEC/COA/868032

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121105-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 8 December 2022	Sample Number:	868032
Date Received: 14 December 2022	6m Bottle:	
Test Date: 14 December 2022 to 23 December 2022	72m Bottle:	
Date Reported: 23 December 2022	Bio Bottle:	868032

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

This report may not be reproduced in part without the written permission of SOCOTEC UK Limited.

Analysis Report

Report Number: 22/DEC/COA/868032

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121105-001

Laboratory References

Date Sampled: 8 December 2022
Date Received: 14 December 2022
Test Date: 14 December 2022 to 23 December 2022
Date Reported: 23 December 2022

Sample Number: 868032
6m Bottle:
72m Bottle:
Bio Bottle: 868032

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	< 0.05	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22121105
Date Issued: 23/12/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22121105
 Date Issued: 23/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Filtered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham banks
 Project No: 22121105
 Date Issued: 23/12/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham banks
Project No: 22121105
Date Issued: 23/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22121124

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 12/12/2022

Analysis Date: 30/12/2022

Date Issued: 30/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]

Reported by Customer Service Lead

[REDACTED]

01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22
Project No: 22121124
Date Issued: 30/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22121124-001	ATKRD_TP01-13-ES-0.60	08/12/2022 00:00:00	SOLID	Soil Sample



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121124
 Date Issued: 30/12/2022

Analysis Results

Sample ID	001
Customer ID	ATKRD_TP01-13-ES-0.60
Sample Type	SOLID
Sampling Date	08/12/2022

Analysis	Method Code	MDL	Units	Accred.	
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	N	1.50
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	N	<0.209
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	N	<0.010
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	N	<0.209 _B
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	N	<0.042 _B
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	N	<0.209
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	N	<0.010
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	N	<0.209
pH (2.5:1 extraction)	PHSOIL	1	pH units	N	9.4
Chloride as Cl	KONECL	2	mg/kg [^]	N	1800
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N	<0.1
Nitrite as N	KONENS	0.02	mg/kg [^]	N	0.21
Nitrate as N	KONENO3	0.4	mg/kg [^]	N	0.8
Complex Cyanide	SFAPI	0.5	mg/kg [^]	N	<0.5
Free Cyanide	SFAPI	0.5	mg/kg [^]	N	<0.5
Phenol Index	SFAPI	0.5	mg/kg [^]	N	<0.5
Sulphide as S	SFAPI	0.5	mg/kg [^]	N	<0.5
Total Cyanide	SFAPI	0.5	mg/kg [^]	N	<0.5
Soil Organic Matter	WSLM59	0.04	% m/m [^]	N	2.60



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121124
 Date Issued: 30/12/2022

Analysis Results

Sample ID	001
Customer ID	ATKRD_TP01-13-ES-0.60
Sample Type	SOLID
Sampling Date	08/12/2022

Analysis	Method Code	MDL	Units	Accred.	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	N	6.3
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	N	3.8
Copper as Cu	ICPMSS	1.6	mg/kg [^]	N	12.1
Lead as Pb	ICPMSS	0.7	mg/kg [^]	N	30.3
Manganese as Mn	ICPMSS	1	mg/kg [^]	N	221.0
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	N	<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	N	11.8
Selenium as Se	ICPMSS	0.5	mg/kg [^]	N	<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	N	12.6
Zinc as Zn	ICPMSS	16	mg/kg [^]	N	195.8
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	N	192
Calcium as Ca	ICPSOIL	50	mg/kg [^]	N	261000
Iron as Fe	ICPSOIL	36	mg/kg [^]	N	4190
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	N	7300
Boron as B	ICPBOR	0.5	mg/kg [^]	N	16.6
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	N	111
Benzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	N	<10
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	N	<10
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg [^]	N	<21



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121124
 Date Issued: 30/12/2022

Analysis Results

Sample ID	001
Customer ID	ATKRD_TP01-13-ES-0.60
Sample Type	SOLID
Sampling Date	08/12/2022

Analysis	Method Code	MDL	Units	Accred.	
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg [^]	N	<10 _B
Toluene HS_1D_AR	BTEXHSA	10	µg/kg [^]	N	<10
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	N	1.41
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	N	0.12
Anthracene	PAHMSUS	0.08	mg/kg [^]	N	2.41
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	N	3.74
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	N	3.70
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	N	4.02
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	N	1.74
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	N	1.68
Chrysene	PAHMSUS	0.08	mg/kg [^]	N	4.07
Coronene	PAHMSUS	0.08	mg/kg [^]	N	0.34
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	N	0.36
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	N	9.14
Fluorene	PAHMSUS	0.08	mg/kg [^]	N	1.04
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	N	2.39
Naphthalene	PAHMSUS	0.08	mg/kg [^]	N	0.40
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	N	6.03
Pyrene	PAHMSUS	0.08	mg/kg [^]	N	7.83



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121124
 Date Issued: 30/12/2022

Analysis Results

Sample ID	001
Customer ID	ATKRD_TP01-13-ES-0.60
Sample Type	SOLID
Sampling Date	08/12/2022

Analysis	Method Code	MDL	Units	Accred.	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	N	50.1
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	N	10.5
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	N	101
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	N	160 B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	N	385
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N	23.3
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	N	668
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	N	6.35
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	N	36.1
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	N	142
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	N	426
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N	45.8
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	N	660
Benzene	VOCHSAS	1	µg/kg [^]	N	<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	N	<2
m and p-Xylene	VOCHSAS	4	µg/kg [^]	N	<4
o-Xylene	VOCHSAS	2	µg/kg [^]	N	<2
Toluene	VOCHSAS	5	µg/kg [^]	N	<5
Total Moisture at 35°C	CLANDPREP	0.1	%	N	4.1



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121124
 Date Issued: 30/12/2022

Analysis Results

Sample ID	001			
Customer ID	ATKRD_TP01-13-ES-0.60			
Sample Type	SOLID			
Sampling Date	08/12/2022			
Analysis	Method Code	MDL	Units	Accred.

Analysis	Method Code	MDL	Units	Accred.	
Description of Solid Material	CLANDPREP		-	N	GRAVEL
Asbestos Identification	SUB002		-	N	NAIIS
Total Nitrogen as N	SUB022	0.08	%	N	<0.05

Analysis Report

Report Number: 22/DEC/COA/868137

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121124-001

Quote Ref:

Date Sampled: 8 December 2022

Date Received: 15 December 2022

Test Date: 15 December 2022 to 23 December 2022

Date Reported: 23 December 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 868137

6m Bottle:

72m Bottle:

Bio Bottle: 868137

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/868137

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121124-001

Laboratory References

Date Sampled: 8 December 2022
Date Received: 15 December 2022
Test Date: 15 December 2022 to 23 December 2022
Date Reported: 23 December 2022

Sample Number: 868137
6m Bottle:
72m Bottle:
Bio Bottle: 868137

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	< 0.04	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121124
 Date Issued: 30/12/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATKRD_TP01-13-ES-0.60	22121124-001	VOCHSAS						✓

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	As Received
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	As Received
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chromium VI (Hexavalent) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	As Received
SFAPI	Cyanide (Free) by SFA	As Received
SFAPI	Cyanide (Total) by SFA	As Received
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	As Received
SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22
Project No: 22121124
Date Issued: 30/12/2022

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22
Project No: 22121124
Date Issued: 30/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22121267

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

Date Received: 13/12/2022

Analysis Date: 03/01/2023

Date Issued: 03/01/2023

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22
Project No: 22121267
Date Issued: 03/01/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22121267-001	BH11-1-ES-0.00-1.20	08/12/2022 00:00:00	SOLID	Soil Sample
22121267-002	BH13-3-ES-0.70-1.00	08/12/2022 00:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	BH11-1-ES-0.00-1.20		BH13-3-ES-0.70-1.00
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	08/12/2022	08/12/2022	08/12/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.20*	1.40	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.17			
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005			
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020			
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100			
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005			
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100			
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.224* _B	<0.274* _B	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.011*	<0.014	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.224*	<0.274	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.045*	<0.055	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.224*	<0.274	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.011* _B	<0.014* _B	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.224*	<0.274	
pH	PHCONDW	1	pH units	U	8.2			
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.3*	7.6	
Chloride as Cl	KONECL	2	mg/kg [^]	N		92	18	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	BH11-1-ES-0.00-1.20		BH13-3-ES-0.70-1.00	
					Sample Type	LPL	SOLID	SOLID	
					Sampling Date	08/12/2022	08/12/2022	08/12/2022	
Chloride as Cl	KONENS	1	mg/l	U	48				
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003				
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1		<0.1	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01				
Nitrate as N	KONENS	0.2	mg/l	U	<0.20				
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.09		0.14	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		<0.8 _D		<0.8 _D	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02				
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6*		<0.7	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02				
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6*		<0.7	
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6*		<0.7	
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02				
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6		<0.7	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02				
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6*		<0.7	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		2.10*		1.16	
Leached Organic Carbon	TOCW	0.4	mg/l	U	5.78				
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		10.3*		15.7	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121267
 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	BH11-1-ES-0.00-1.20		BH13-3-ES-0.70-1.00	
					Sample Type	LPL	SOLID	SOLID	
					Sampling Date	08/12/2022	08/12/2022	08/12/2022	
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		0.6*	<0.2		
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		7.8*	14.4		
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		66.4*	18.3		
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		268.1*	256.1		
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5*	<0.5		
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		15.8*	33.7		
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5*	<0.5		
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		15.0*	32.4		
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		103.5*	85.8		
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		863*	44.3		
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		199000*	7930		
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		12400*	34400		
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		28400*	3690		
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		0.8*	1.6		
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		399*	39		
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.001				
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002				
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001				
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001				

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					BH11-1-ES-0.00-1.20	
					Customer ID	
					002	
BH13-3-ES-0.70-1.00						
Sample Type		LPL	SOLID	SOLID		
Sampling Date		08/12/2022	08/12/2022	08/12/2022		
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	0.00006	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.002	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.09	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	125	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM	<11* _B	<14* _B
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM	<11*	<14
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg [^]	UM	<22*	<27
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM	<11*	<14
Toluene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM	<11*	<14
Acenaphthene	PAHMSW	0.01	µg/l	U	0.14	
Acenaphthylene	PAHMSW	0.01	µg/l	U	0.02	
Anthracene	PAHMSW	0.01	µg/l	U	<0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121267
 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	BH11-1-ES-0.00-1.20		BH13-3-ES-0.70-1.00	
					Sample Type	LPL	SOLID	SOLID	
					Sampling Date	08/12/2022	08/12/2022	08/12/2022	
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01				
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01				
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01				
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01				
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01				
Chrysene	PAHMSW	0.01	µg/l	U	<0.01				
Coronene	PAHMSW	0.01	µg/l	U	<0.01				
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01				
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01				
Fluorene	PAHMSW	0.01	µg/l	U	0.05				
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01				
Naphthalene	PAHMSW	0.01	µg/l	U	0.20				
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01				
Pyrene	PAHMSW	0.01	µg/l	U	<0.01				
Total PAH 16	PAHMSW	0.16	µg/l	U	0.53				
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*		<0.11	
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.09*		<0.11	
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.09*		<0.11	
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*		<0.11	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	BH11-1-ES-0.00-1.20		BH13-3-ES-0.70-1.00	
					Sample Type	LPL	SOLID	SOLID	
					Sampling Date	08/12/2022	08/12/2022	08/12/2022	
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.09	<0.11		
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09*	<0.11		
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.43*	<1.75		
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01				
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01				
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01				
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.01				
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	0.02				



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121267
 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					Sample Type	
					Sampling Date	
002						
BH11-1-ES-0.00-1.20		BH13-3-ES-0.70-1.00				
LPL		SOLID		SOLID		
08/12/2022		08/12/2022		08/12/2022		
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.03	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U	<4.48*	<5.47
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U	7.71*	<5.47
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U	19.3* _B	5.54* _B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U	161*	<13.7
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N	50.5	<8.21
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U	240*	<27.4
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01* _B	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01* _B	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.03	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U	<4.48*	<5.47
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U	9.18*	11.1
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U	28.3*	8.38
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U	259*	<13.7
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N	86.1	13.3
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U	361*	38.7



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
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 Date Issued: 03/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	
					Customer ID	BH11-1-ES-0.00-1.20	BH13-3-ES-0.70-1.00	
					Sample Type	LPL	SOLID	SOLID
					Sampling Date	08/12/2022	08/12/2022	08/12/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1*	<1	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2*	<3	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5*	<6	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2*	<3	
Toluene	VOCHSAS	5	µg/kg [^]	UM		8*	13	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005			
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005			
Phenol	PHEGCMS	0.0005	mg/l	N	0.0028			
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0040			
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005			
Total Moisture at 35°C	CLANDPREP	0.1	%	N		10.7	26.9	
Description of Solid Material	CLANDPREP		-	N		GRAVEL	CLAY	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250		
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		100		
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.465		
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.285		
Asbestos Identification	SUB002		-	N		NAIIS	NAIIS	
Total Nitrogen as N	SUB022	0.08	%	N		<0.05	0.05	

Analysis Report

Report Number: 22/DEC/COA/868158

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121267-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 8 December 2022	Sample Number:	868158
Date Received: 16 December 2022	6m Bottle:	
Test Date: 16 December 2022 to 23 December 2022	72m Bottle:	
Date Reported: 23 December 2022	Bio Bottle:	868158

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/868158

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121267-001

Laboratory References

Date Sampled: 8 December 2022
Date Received: 16 December 2022
Test Date: 16 December 2022 to 23 December 2022
Date Reported: 23 December 2022

Sample Number: 868158
6m Bottle:
72m Bottle:
Bio Bottle: 868158

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	< 0.04	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/DEC/COA/868159

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121267-002

Quote Ref:
Date Sampled: 8 December 2022
Date Received: 16 December 2022
Test Date: 16 December 2022 to 23 December 2022
Date Reported: 23 December 2022

Laboratory References
Sample Matrix: SOIL
Sample Number: 868159
6m Bottle:
72m Bottle:
Bio Bottle: 868159

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/868159

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121267-002

Laboratory References

Date Sampled: 8 December 2022
Date Received: 16 December 2022
Test Date: 16 December 2022 to 23 December 2022
Date Reported: 23 December 2022

Sample Number: 868159
6m Bottle:
72m Bottle:
Bio Bottle: 868159

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.05	0.05	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121267
 Date Issued: 03/01/2023

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
BH11-1-ES-0.00-1.20	22121267-001	PAHMSUS						✓
BH13-3-ES-0.70-1.00	22121267-002	PAHMSUS						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121267
 Date Issued: 03/01/2023

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Filtered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22121267
 Date Issued: 03/01/2023

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22
Project No: 22121267
Date Issued: 03/01/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22121318

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22 Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

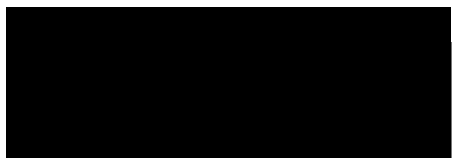
Date Received: 13/12/2022

Analysis Date: 11/01/2023

Date Issued: 11/01/2023

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory



Reported by Customer Service Specialist

[REDACTED]
01283 554434



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 22121318
Date Issued: 11/01/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22121318-001	ATKRD_BH09-101-ES-1.00	12/12/2022 00:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH09-101-ES-1.00	
Sample Type					LPL	SOLID
Sampling Date					12/12/2022	12/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		2.40
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.39	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.242
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.242* _B
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.048* _B
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.242
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.242
pH	PHCONDW	1	pH units	U	11.4	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		11.2
Chloride as Cl	KONECL	2	mg/kg [^]	N		204



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22121318
 Date Issued: 11/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH09-101-ES-1.00	
Sample Type					LPL	SOLID
Sampling Date					12/12/2022	12/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Chloride as Cl	KONENS	1	mg/l	U	104	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	0.005	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	0.13	
Nitrate as N	KONENS	0.2	mg/l	U	0.64	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.95
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		1.1
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		0.90
Leached Organic Carbon	TOCW	0.4	mg/l	U	24.9	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		26.4



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22121318
 Date Issued: 11/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH09-101-ES-1.00	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					12/12/2022	12/12/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		0.3
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		86.2
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		35.5
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		508.9
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		37.2
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		23.6
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		216.2
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		37.0
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		143000
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		34000
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3810
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		0.8
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		261
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.004	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	0.007	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.028	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH09-101-ES-1.00	
Sample Type					LPL	SOLID
Sampling Date					12/12/2022	12/12/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	0.00018	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.011	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	<0.002	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.05	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	66	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<12
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<12
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg [^]	UM		<24
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<12* _B
Toluene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<12
Acenaphthene	PAHMSW	0.01	µg/l	U	51.3	
Acenaphthylene	PAHMSW	0.01	µg/l	U	1.29	
Anthracene	PAHMSW	0.01	µg/l	U	<0.02 _D	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22121318
 Date Issued: 11/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH09-101-ES-1.00	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					12/12/2022	12/12/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.02	D
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.02	D
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.02	D
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.02	D
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.02	D
Chrysene	PAHMSW	0.01	µg/l	U	<0.02	D
Coronene	PAHMSW	0.01	µg/l	U	<0.02	D
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.02	D
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.02	D
Fluorene	PAHMSW	0.01	µg/l	U	28.5	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.02	D
Naphthalene	PAHMSW	0.01	µg/l	U	17.5	
Phenanthrene	PAHMSW	0.01	µg/l	U	37.5	
Pyrene	PAHMSW	0.01	µg/l	U	<0.02	D
Total PAH 16	PAHMSW	0.16	µg/l	U	1120	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		4.86
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		0.21
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		6.79
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		6.16



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22121318
 Date Issued: 11/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH09-101-ES-1.00	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					12/12/2022	12/12/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		4.69
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		5.11
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		2.27
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		1.89
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		4.19
Coronene	PAHMSUS	0.08	mg/kg [^]	N		0.99
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		0.68
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		20.0
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		5.97
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		2.88
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		9.02
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		22.2
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		14.4
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		111
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.02 D	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.02 D	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.02 D	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.02	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.02 D	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22121318
 Date Issued: 11/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKRD_BH09-101-ES-1.00	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					12/12/2022	12/12/2022
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.09	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.84
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		8.78
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		13.4* _B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		32.5* _B
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		11.1
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		61.6
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02* _{B,D}	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.19* _B	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.10	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.02 _D	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.31	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		12.5
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		44.4
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		122* _B
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		194
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		<7.26
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		380



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22121318
 Date Issued: 11/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKRD_BH09-101-ES-1.00	
Sample Type					LPL	SOLID
Sampling Date					12/12/2022	12/12/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2
Toluene	VOCHSAS	5	µg/kg [^]	UM		<6
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	0.0346	
Methylphenols	PHEGCMS	0.0005	mg/l	N	0.0311	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0338	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.103	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0050 _D	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		17.3
Description of Solid Material	CLANDPREP		-	N		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.439
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.311
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		<0.05

Analysis Report

Report Number: 22/DEC/COA/868160

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121318-001

Quote Ref:

Date Sampled: 12 December 2022

Date Received: 16 December 2022

Test Date: 16 December 2022 to 23 December 2022

Date Reported: 23 December 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 868160

6m Bottle:

72m Bottle:

Bio Bottle: 868160

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/868160

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121318-001

Laboratory References

Date Sampled: 12 December 2022 Sample Number: 868160
Date Received: 16 December 2022 6m Bottle:
Test Date: 16 December 2022 to 23 December 2022 72m Bottle:
Date Reported: 23 December 2022 Bio Bottle: 868160

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	< 0.04	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 22121318
Date Issued: 11/01/2023

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
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Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22121318
 Date Issued: 11/01/2023

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Filtered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22121318
 Date Issued: 11/01/2023

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 22121318
Date Issued: 11/01/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22121376

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: Lyneham

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

Date Received: 14/12/2022

Analysis Date: 30/12/2022

Date Issued: 30/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham
Project No: 22121376
Date Issued: 30/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22121376-001	ATKRD_BH07-101-ES-1.20	12/12/2022 15:23:00	SOLID	Soil Sample
22121376-002	ATKRD_BH06-1-ES-0.50	12/12/2022 15:23:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH07-101-ES-1.20		ATKRD_BH06-1-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.20		1.70	
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.10		0.10		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020		<0.020		
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100		
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005		
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100		<0.100		
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.236		<0.291	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012		0.022	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.236* _B		<0.291* _B	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.048* _B		<0.059* _B	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.236		<0.291	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.012		<0.015	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.236		<0.291	
pH	PHCONDW	1	pH units	U	8.2		8.1		
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.5		8.1	
Chloride as Cl	KONECL	2	mg/kg [^]	N		188		18	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH07-101-ES-1.20		ATKRD_BH06-1-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Chloride as Cl	KONENS	1	mg/l	U	138		13		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003		<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1		<0.1	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01		<0.01		
Nitrate as N	KONENS	0.2	mg/l	U	1.03		10.5		
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.23		0.61	
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		<0.8 _D		12.8	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.7	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.7	
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6		<0.7	
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6		<0.7	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6		<0.7	
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		0.87		5.33	
Leached Organic Carbon	TOCW	0.4	mg/l	U	9.73		6.89		
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		8.2		22.8	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH07-101-ES-1.20		ATKRD_BH06-1-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2		<0.2	
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		6.2		14.3	
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		10.7		44.9	
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		208.0		519.0	
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5	
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		14.2		79.1	
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5	
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		20.5		31.6	
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		57.2		100.6	
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		27.6		54.7	
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		133000		11400	
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		19500		33500	
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		8120		3680	
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		0.8		2.0	
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		65		306	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.001		<0.001		
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002		<0.00002		
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	0.001		<0.001		
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.002		0.003		

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Sample ID	
					001		002	
					ATKRD_BH07-101-ES-1.20		ATKRD_BH06-1-ES-0.50	
					Customer ID		Customer ID	
					Sample Type		Sample Type	
Sampling Date		Sampling Date						
		LPL	SOLID	LPL	SOLID			
		12/12/2022	12/12/2022	12/12/2022	12/12/2022			
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003		<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		0.003	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.003		0.002	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.02		0.03	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	228		46	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10		<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<15
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		<15
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<24		<29
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12* _B		<15* _B
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<12		22
Acenaphthene	PAHMSW	0.01	µg/l	U	1.87		0.09	
Acenaphthylene	PAHMSW	0.01	µg/l	U	0.10		<0.02 _D	
Anthracene	PAHMSW	0.01	µg/l	U	<0.02 _D		<0.02 _D	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham
 Project No: 22121376
 Date Issued: 30/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH07-101-ES-1.20		ATKRD_BH06-1-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Chrysene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Coronene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Fluorene	PAHMSW	0.01	µg/l	U	0.20		0.02		
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Naphthalene	PAHMSW	0.01	µg/l	U	0.31		2.81		
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.02	D	0.04		
Pyrene	PAHMSW	0.01	µg/l	U	<0.02	D	<0.02	D	
Total PAH 16	PAHMSW	0.16	µg/l	U	2.72		3.20		
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM			0.32		<0.12
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U			<0.09		<0.12
Anthracene	PAHMSUS	0.08	mg/kg [^]	U			0.34		<0.12
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			0.26		<0.12

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH07-101-ES-1.20		ATKRD_BH06-1-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.27		<0.12	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.33		<0.12	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		0.18		<0.12	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.19		<0.12	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		0.40		<0.12	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.09		<0.12	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09		<0.12	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.95		<0.12	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		0.23* _B		<0.12* _B	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.24		<0.12	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.09		<0.12	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		1.28		<0.12	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.75		<0.12	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		6.02		<1.86	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D		<0.02 _D	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D		<0.02 _D	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D		<0.02 _D	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 _D		<0.02 _D	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		<0.02 _D		<0.02 _D	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID		Sample Type		Sampling Date			
					001		002							
					ATKRD_BH07-101-ES-1.20		ATKRD_BH06-1-ES-0.50							
					LPL	SOLID	LPL	SOLID						
					12/12/2022	12/12/2022	12/12/2022	12/12/2022						
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.02 _D		<0.02 _D							
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.72		<5.81						
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<4.72		<5.81						
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		6.16* _B		<5.81* _B						
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		27.9		<14.5						
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		10.7		<8.72						
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		47.3		<29.1						
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02* _{B,D}		<0.02* _{B,D}							
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02* _{B,D}		<0.02* _{B,D}							
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		<0.02 _D							
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		<0.02 _D							
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.02 _D		<0.02 _D							
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.04		0.03							
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<4.72		<5.81						
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		11.4		<5.81						
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		31.2		<5.81						
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		76.1		<14.5						
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		15.7		<8.72						
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		132		<29.1						



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham
 Project No: 22121376
 Date Issued: 30/12/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH07-101-ES-1.20		ATKRD_BH06-1-ES-0.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1		<1	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2		<3	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5		<6	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2		<3	
Toluene	VOCHSAS	5	µg/kg [^]	UM		<6		32	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	0.0022			<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005			<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0106			0.0100	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0137			0.0111	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	0.0005			<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		15.2		31.2	
Description of Solid Material	CLANDPREP		-	N		CLAY		SILT	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250		0.250	
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0		0	
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		0	
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.428		0.383	
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.322		0.367	
Asbestos Identification	SUB002		-	N		NAIIS		NAIIS	
Total Nitrogen as N	SUB022	0.08	%	N		<0.05		0.32	

Analysis Report

Report Number: 22/DEC/COA/868161

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121376-001

Laboratory References

Quote Ref:	Sample Matrix	SOIL
Date Sampled: 12 December 2022	Sample Number:	868161
Date Received: 16 December 2022	6m Bottle:	
Test Date: 16 December 2022 to 23 December 2022	72m Bottle:	
Date Reported: 23 December 2022	Bio Bottle:	868161

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/868161

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121376-001

Laboratory References

Date Sampled: 12 December 2022 Sample Number: 868161
Date Received: 16 December 2022 6m Bottle:
Test Date: 16 December 2022 to 23 December 2022 72m Bottle:
Date Reported: 23 December 2022 Bio Bottle: 868161

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	0.04	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/DEC/COA/868162

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121376-002

Quote Ref:

Date Sampled: 12 December 2022

Date Received: 16 December 2022

Test Date: 16 December 2022 to 23 December 2022

Date Reported: 23 December 2022

Laboratory References

Sample Matrix SOIL

Sample Number: 868162

6m Bottle:

72m Bottle:

Bio Bottle: 868162

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

- * Denotes calculated values.
- ** Non accredited method for this matrix.
- *** Sub contracted test, UKAS accredited.
- **** Sub contracted test, non-UKAS accredited.
- # Customer Supplied Result.
- I/S Insufficient sample to test.
- U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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Analysis Report

Report Number: 22/DEC/COA/868162

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121376-002

Laboratory References

Date Sampled: 12 December 2022
Date Received: 16 December 2022
Test Date: 16 December 2022 to 23 December 2022
Date Reported: 23 December 2022

Sample Number: 868162
6m Bottle:
72m Bottle:
Bio Bottle: 868162

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.32	0.32	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham
Project No: 22121376
Date Issued: 30/12/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham
 Project No: 22121376
 Date Issued: 30/12/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Filtered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham
 Project No: 22121376
 Date Issued: 30/12/2022

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham
Project No: 22121376
Date Issued: 30/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22121941

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: Lyneham Banks H2060-22

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 20/12/2022

Analysis Date: 11/01/2023

Date Issued: 12/01/2023

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks H2060-22
Project No: 22121941
Date Issued: 12/01/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22121941-001	ATKBH14 IP-1-ES-0.80-0.90	16/12/2022 00:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH14 IP-1-ES-0.80-0.90	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					16/12/2022	16/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		1.60
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	0.17	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.250* B
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013* B
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.250
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.051
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.250
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.250
pH	PHCONDW	1	pH units	U	8.0	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.5
Chloride as Cl	KONECL	2	mg/kg [^]	N		321



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH14 IP-1-ES-0.80-0.90	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					16/12/2022	16/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Chloride as Cl	KONENS	1	mg/l	U	196	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	
Chromium (VI) as Cr	KONENS	0.1	mg/kg [^]	N		<0.1
Nitrite as N	KONENS	0.01	mg/l	U	0.01	
Nitrate as N	KONENS	0.2	mg/l	U	0.21	
Nitrite as N	KONENS	0.02	mg/kg [^]	N		0.08
Nitrate as N	KONENO3	0.4	mg/kg [^]	N		<0.8 D
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	
Complex Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Free Cyanide	SFAPI	0.02	mg/l	U	0.02	
Free Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Phenol Index	SFAPI	0.5	mg/kg [^]	U		<0.6
Sulphide as S	SFAPI	0.02	mg/l	U	0.02	
Sulphide as S	SFAPI	0.5	mg/kg [^]	N		<0.6
Total Cyanide	SFAPI	0.02	mg/l	U	0.02	
Total Cyanide	SFAPI	0.5	mg/kg [^]	UM		<0.6
Soil Organic Matter	WSLM59	0.04	% m/m [^]	U		2.79
Leached Organic Carbon	TOCW	0.4	mg/l	U	2.62	
Arsenic as As	ICPMSS	0.3	mg/kg [^]	UM		9.5



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH14 IP-1-ES-0.80-0.90	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					16/12/2022	16/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		<0.2
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		25.6
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		42.5
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		188.0
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		35.5
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		31.6
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		74.1
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		45.4
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		25900
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		37400
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		3470
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		2.9
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		290
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
Customer ID					ATKBH14 IP-1-ES-0.80-0.90	
Sample Type					LPL	SOLID
Sampling Date					16/12/2022	16/12/2022
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	<0.002	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.08	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	87	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5	
Benzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg [^]	UM		<25
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13
Toluene HS_1D_AR	BTEXHSA	10	µg/kg [^]	UM		<13* B
Acenaphthene	PAHMSW	0.01	µg/l	U	<0.01	
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01	
Anthracene	PAHMSW	0.01	µg/l	U	<0.01	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH14 IP-1-ES-0.80-0.90	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					16/12/2022	16/12/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Chrysene	PAHMSW	0.01	µg/l	U	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	0.01	
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01	
Pyrene	PAHMSW	0.01	µg/l	U	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	0.16	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U		<0.10
Anthracene	PAHMSUS	0.08	mg/kg [^]	U		<0.10
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH14 IP-1-ES-0.80-0.90	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					16/12/2022	16/12/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.10
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		<0.10
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		<1.60
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.03	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	0.02	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH14 IP-1-ES-0.80-0.90	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					16/12/2022	16/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.07	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<4.99* B
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<4.99* B
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^A	U		<4.99* B
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^A	U		<12.5* B
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^A	N		<7.49
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^A	U		<25.0
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.03	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		<4.99
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		<4.99* B
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^A	U		<4.99* B
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^A	U		<12.5* B
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^A	N		<7.49
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^A	U		<25.0



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	
					001	
					Customer ID	
					ATKBH14 IP-1-ES-0.80-0.90	
					Sample Type	
					LPL	SOLID
					Sampling Date	
					16/12/2022	16/12/2022
Analysis	Method Code	MDL	Units	Accred.		
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<3
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<3
Toluene	VOCHSAS	5	µg/kg [^]	UM		13
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0252	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0264	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Total Moisture at 35°C	CLANDPREP	0.1	%	N		19.9
Description of Solid Material	CLANDPREP		-	N		CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.250
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		100
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.428
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.322
Asbestos Identification	SUB002		-	N		NAIIS
Total Nitrogen as N	SUB022	0.08	%	N		0.06

Analysis Report

Report Number: 22/DEC/COA/868487

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121941-001

Quote Ref:
Date Sampled: 16 December 2022
Date Received: 22 December 2022
Test Date: 22 December 2022 to 30 December 2022
Date Reported: 30 December 2022

Laboratory References
Sample Matrix: SOIL
Sample Number: 868487
6m Bottle:
72m Bottle:
Bio Bottle: 868487

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

This report may not be reproduced in part without the written permission of SOCOTEC UK Limited.

Analysis Report

Report Number: 22/DEC/COA/868487

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22121941-001

Laboratory References

Date Sampled: 16 December 2022
Date Received: 22 December 2022
Test Date: 22 December 2022 to 30 December 2022
Date Reported: 30 December 2022

Sample Number: 868487
6m Bottle:
72m Bottle:
Bio Bottle: 868487

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.06	0.06	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	GROHSA/BTEXHSA						✓
ATKBH14 IP-1-ES-0.80-0.90	22121941-001	PAHMSW						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Filtered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks H2060-22
 Project No: 22121941
 Date Issued: 12/01/2023

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks H2060-22
Project No: 22121941
Date Issued: 12/01/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22122301

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 2

Date Received: 23/12/2022

Analysis Date: 11/01/2023

Date Issued: 12/01/2023

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]

Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22
Project No: 22122301
Date Issued: 12/01/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22122301-001	ATKRD_BH05-1-ES-1.50	20/12/2022 00:00:00	SOLID	Soil Sample
22122301-002	ATKRD_BH11-1-ES-2.50	20/12/2022 00:00:00	SOLID	Soil Sample

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Sample ID	
					001		002	
					ATKRD_BH05-1-ES-1.50		ATKRD_BH11-1-ES-2.50	
					Customer ID		Customer ID	
					Sample Type		Sample Type	
Sampling Date		Sampling Date						
		LPL	SOLID	LPL	SOLID			
		20/12/2022	20/12/2022	20/12/2022	20/12/2022			
Ammoniacal Nitrogen (Exchangeable) as N	AMMAR	0.5	mg/kg [^]	UM		34.4		1.20
Ammoniacal Nitrogen as NH4	CALC_NH4	0.02	mg/l	U	2.57		0.03	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	N	<0.020		<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100		<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	N	<0.005		<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100		<0.100	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.264		<0.253
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013		<0.013
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.264		<0.253
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg [^]	UM		<0.053		<0.051
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.264		<0.253
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg [^]	UM		<0.013		<0.013
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg [^]	UM		<0.264		<0.253
pH	PHCONDW	1	pH units	U	8.3		8.0	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM		8.4		8.5
Chloride as Cl	KONECL	2	mg/kg [^]	N		63		70

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH05-1-ES-1.50		ATKRD_BH11-1-ES-2.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Chloride as Cl	KONENS	1	mg/l	U	31		39		
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003		<0.003		
Chromium (VI) as Cr	KONENS	0.1	mg/kg ^A	N		<0.1		<0.1	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01		0.01		
Nitrate as N	KONENS	0.2	mg/l	U	<0.20		<0.20		
Nitrite as N	KONENS	0.02	mg/kg ^A	N		0.07		0.26	
Nitrate as N	KONENO3	0.4	mg/kg ^A	N		<0.8 _D		<0.8 _D	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Complex Cyanide	SFAPI	0.5	mg/kg ^A	UM		<0.7		<0.6	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02		<0.02		
Free Cyanide	SFAPI	0.5	mg/kg ^A	UM		<0.7		<0.6	
Phenol Index	SFAPI	0.5	mg/kg ^A	U		<0.7		<0.6	
Sulphide as S	SFAPI	0.02	mg/l	U	0.02		<0.02		
Sulphide as S	SFAPI	0.5	mg/kg ^A	N		<0.7		<0.6	
Total Cyanide	SFAPI	0.02	mg/l	U	0.02		<0.02		
Total Cyanide	SFAPI	0.5	mg/kg ^A	UM		<0.7		<0.6	
Soil Organic Matter	WSLM59	0.04	% m/m ^A	U		1.18		1.70	
Leached Organic Carbon	TOCW	0.4	mg/l	U	20.7		3.46		
Arsenic as As	ICPMSS	0.3	mg/kg ^A	UM		2.5		8.4	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID	
					001		002	
					ATKRD_BH05-1-ES-1.50		ATKRD_BH11-1-ES-2.50	
					LPL	SOLID	LPL	SOLID
					20/12/2022	20/12/2022	20/12/2022	20/12/2022
Cadmium as Cd	ICPMSS	0.2	mg/kg [^]	UM		1.5		2.3
Copper as Cu	ICPMSS	1.6	mg/kg [^]	UM		10.6		30.7
Lead as Pb	ICPMSS	0.7	mg/kg [^]	UM		65.5		52.5
Manganese as Mn	ICPMSS	1	mg/kg [^]	UM		503.8		663.2
Mercury as Hg	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5
Nickel as Ni	ICPMSS	2	mg/kg [^]	UM		6.4		15.8
Selenium as Se	ICPMSS	0.5	mg/kg [^]	UM		<0.5		<0.5
Total Chromium as Cr	ICPMSS	1.2	mg/kg [^]	UM		10.3		16.8
Zinc as Zn	ICPMSS	16	mg/kg [^]	UM		115.3		133.6
Barium as Ba	ICPSOIL	0.5	mg/kg [^]	UM		2110		732
Calcium as Ca	ICPSOIL	50	mg/kg [^]	U		206000		164000
Iron as Fe	ICPSOIL	36	mg/kg [^]	UM		5030		20400
Magnesium as Mg	ICPSOIL	10	mg/kg [^]	U		110000		82100
Boron as B	ICPBOR	0.5	mg/kg [^]	UM		1.9		1.5
Water Soluble Sulphate as SO4 by Mass	ICPWSS	20	mg/kg [^]	UM		70		308
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.003		0.002	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	0.00009		<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID		Sample Type		Sampling Date					
					001		002									
					ATKRD_BH05-1-ES-1.50		ATKRD_BH11-1-ES-2.50									
					LPL	SOLID	LPL	SOLID								
					20/12/2022	20/12/2022	20/12/2022	20/12/2022								
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		<0.001									
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	0.00004		<0.00003									
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001		0.002									
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	<0.002		0.002									
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.03		<0.01									
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	24		122									
Benzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5									
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5									
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	N	<10		<10									
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5									
Toluene HS_1D_AR	BTEXHSA	5	µg/l	N	<5		<5									
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13								
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13								
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM		<26		<25								
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13								
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM		<13		<13								
Acenaphthene	PAHMSW	0.01	µg/l	U	0.02		0.15									
Acenaphthylene	PAHMSW	0.01	µg/l	U	0.01		0.01									
Anthracene	PAHMSW	0.01	µg/l	U	<0.01		<0.01									



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22122301
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH05-1-ES-1.50		ATKRD_BH11-1-ES-2.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Chrysene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Coronene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Fluorene	PAHMSW	0.01	µg/l	U		<0.01		0.05	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U		0.11		0.28	
Phenanthrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Pyrene	PAHMSW	0.01	µg/l	U		<0.01		<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U		0.27		0.61	
Acenaphthene	PAHMSUS	0.08	mg/kg [^]	UM			<0.11		<0.10
Acenaphthylene	PAHMSUS	0.08	mg/kg [^]	U			<0.11* _B		<0.10* _B
Anthracene	PAHMSUS	0.08	mg/kg [^]	U			0.18		<0.10
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg [^]	UM			<0.11* _B		<0.10* _B



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22122301
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH05-1-ES-1.50		ATKRD_BH11-1-ES-2.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.29		0.30	
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.26		0.27	
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg [^]	UM		0.16		0.21	
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.14		0.13	
Chrysene	PAHMSUS	0.08	mg/kg [^]	UM		0.40		0.38	
Coronene	PAHMSUS	0.08	mg/kg [^]	N		<0.11		<0.10	
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Fluoranthene	PAHMSUS	0.08	mg/kg [^]	UM		0.67		0.68	
Fluorene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		<0.10	
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.15		0.17	
Naphthalene	PAHMSUS	0.08	mg/kg [^]	UM		<0.11		0.11	
Phenanthrene	PAHMSUS	0.08	mg/kg [^]	UM		0.45		0.38	
Pyrene	PAHMSUS	0.08	mg/kg [^]	UM		0.60		0.60	
Total PAH 16	PAHMSUS	1.28	mg/kg [^]	U		3.91		3.83	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 D		<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 D		<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 D		<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U		<0.02 D		<0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N		0.02		<0.01	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID		Customer ID		Sample Type		Sampling Date					
					001		002									
					ATKRD_BH05-1-ES-1.50		ATKRD_BH11-1-ES-2.50									
					LPL	SOLID	LPL	SOLID								
					20/12/2022	20/12/2022	20/12/2022	20/12/2022								
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.06		0.02									
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.27		<5.07								
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.27		<5.07								
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg [^]	U		<5.27* _B		12.9* _B								
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg [^]	U		13.2		48.8								
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg [^]	N		<7.91		<7.60								
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg [^]	U		29.1		77.9								
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		<0.01									
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		<0.01									
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		<0.01									
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		<0.01									
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.02 _D		<0.01									
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.02 _D		0.02									
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		5.80		8.64								
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		<5.27		16.7								
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg [^]	U		6.64		19.4								
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg [^]	U		53.0		94.4								
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg [^]	N		51.0		74.4								
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg [^]	U		96.8		184								



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22122301
 Date Issued: 12/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002	
					Customer ID	ATKRD_BH05-1-ES-1.50		ATKRD_BH11-1-ES-2.50	
					Sample Type	LPL	SOLID	LPL	SOLID
					Sampling Date	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Benzene	VOCHSAS	1	µg/kg [^]	UM		<1		<1	
Ethylbenzene	VOCHSAS	2	µg/kg [^]	UM		<2		<3	
m and p-Xylene	VOCHSAS	4	µg/kg [^]	UM		<5		<5	
o-Xylene	VOCHSAS	2	µg/kg [^]	UM		<2		<3	
Toluene	VOCHSAS	5	µg/kg [^]	UM		<6		<6	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		<0.0005		
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		<0.0005		
Phenol	PHEGCMS	0.0005	mg/l	N	0.0143		0.0076		
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0155		0.0088		
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005		<0.0005		
Total Moisture at 35°C	CLANDPREP	0.1	%	N		24.1		21.1	
Description of Solid Material	CLANDPREP		-	N		CLAY		CLAY	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 2:1		kg	N		0.400		0.400	
Fraction above 4 mm (%)	Leachate Prep CEN 2:1		%	N		0		0	
Fraction of non-crushable material (%)	Leachate Prep CEN 2:1		%	N		0		0	
Volume of Water for 2:1 Leach (ltr)	Leachate Prep CEN 2:1		l	N		0.655		0.686	
Weight of Sample Leached (kg)	Leachate Prep CEN 2:1		kg	N		0.545		0.514	
Asbestos Identification	SUB020		-	N		NAIIS		NAIIS	
Total Nitrogen as N	SUB022	0.08	%	N		0.08		<0.05	

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S30001-8

DATE OF ISSUE: 11.01.23

DATE SAMPLES RECEIVED: 04.01.23

DATE ANALYSIS COMPLETED: 10.01.23

DESCRIPTION: Two soil/loose aggregate samples each weighing approximately 0.7-1.2kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

Qualitative - The samples were analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in either of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.



CONTRACT NO: S30001-8
DATE OF ISSUE: 11.01.23

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: 22122301

IOM sample number	SOCOTEC Sample ID	Client Sample ID	ACM type detected	PLM result
S30001-19	22122301-001	ATKRD BH05-1-ES-1.50	-	No Asbestos Detected
S30001-20	22122301-002	ATKRD BH11-1-ES-2.50	-	No Asbestos Detected

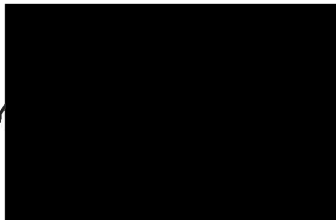
Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are out with the scope of our UKAS accreditation.

AUTHORISED BY



Analysis Report

Report Number: 22/DEC/COA/868781

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22122301-001

Quote Ref:
Date Sampled: 20 December 2022
Date Received: 29 December 2022
Test Date: 29 December 2022 to 4 January 2023
Date Reported: 4 January 2023

Laboratory References
Sample Matrix: SOIL
Sample Number: 868781
6m Bottle:
72m Bottle:
Bio Bottle: 868781

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

This report may not be reproduced in part without the written permission of SOCOTEC UK Limited.

Analysis Report

Report Number: 22/DEC/COA/868781

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22122301-001

Laboratory References

Date Sampled: 20 December 2022
Date Received: 29 December 2022
Test Date: 29 December 2022 to 4 January 2023
Date Reported: 4 January 2023

Sample Number: 868781
6m Bottle:
72m Bottle:
Bio Bottle: 868781

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	0.08	0.08	-	-

--END OF REPORT--

Analysis Report

Report Number: 22/DEC/COA/868782

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22122301-002

Quote Ref:
Date Sampled: 20 December 2022
Date Received: 29 December 2022
Test Date: 29 December 2022 to 4 January 2023
Date Reported: 4 January 2023

Laboratory References
Sample Matrix: SOIL
Sample Number: 868782
6m Bottle:
72m Bottle:
Bio Bottle: 868782

Samples prepared using UKAS accredited methods in accordance with UKAS schedule No.0001

The results relate only to the sample tested

Analysis was undertaken at the following location(s):

SOCOTEC UK Limited, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
SOCOTEC UK Limited, Unit 3, Canal Street, Burton Upon Trent, DE14 3TB

* Denotes calculated values.
** Non accredited method for this matrix.
*** Sub contracted test, UKAS accredited.
**** Sub contracted test, non-UKAS accredited.
Customer Supplied Result.
I/S Insufficient sample to test.
U/S unsuitable sample to test.

This sample was taken by a 3rd party and submitted to SOCOTEC UK Limited for analysis

Report Authorised By:


Customer Services Admin

For and on behalf of SOCOTEC UK Limited

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SOCOTEC UK Limited
Reg Office: SOCOTEC House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ
Incorporated in England:02880501

Analysis Report

Report Number: 22/DEC/COA/868782

Supplier: Contaminated Land
PO Box 100
Ashby Road
Burton on Trent
Staffs

Site: SOCOTEC BRETBY
Grade: 42203
Our Ref: SOCOTEC-NITROGEN
Customer Ref: 22122301-002

Laboratory References

Date Sampled: 20 December 2022
Date Received: 29 December 2022
Test Date: 29 December 2022 to 4 January 2023
Date Reported: 4 January 2023

Sample Number: 868782
6m Bottle:
72m Bottle:
Bio Bottle: 868782

Test	Method Reference	Units	Results Basis			
			As Received *	As Analysed	Dry *	Dry Ash Free *
Nitrogen	CA9	%	< 0.05	0.04	-	-

--END OF REPORT--



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22122301
 Date Issued: 12/01/2023

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	GROHSA/BTEXHSA						✓
ATKRD_BH05-1-ES-1.50	22122301-001	PAHMSW						✓
ATKRD_BH05-1-ES-1.50	22122301-001	VOCHSAS						✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA						✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA						✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA						✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA						✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA						✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA						✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22122301
 Date Issued: 12/01/2023

ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	GROHSA/BTEXHSA								✓
ATKRD_BH11-1-ES-2.50	22122301-002	PAHMSW								✓
ATKRD_BH11-1-ES-2.50	22122301-002	VOCHSAS								✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22122301
 Date Issued: 12/01/2023

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
AMMAR	Ammoniacal Nitrogen (Exchangeable) as N	As Received
BTEXHSA	BTEX by GCFID	Unfiltered
CALC_NH4	Ammoniacal Nitrogen as NH4 (Calc)	Filtered
CLANDPREP	Basic Solid Description	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Filtered
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Manganese in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
ICPMSW (Dissolved)	Arsenic (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Lab Leachate by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Lab Leachate by ICPMS	Filtered
ICPSOIL	Barium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Calcium in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Iron in Solids by ICPOES	Air Dried & Ground
ICPSOIL	Magnesium in Solids by ICPOES	Air Dried & Ground
ICPWATVAR (Dissolved)	Boron (Diss.) in Lab Leachate by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Lab Leachate	Filtered
ICPWSS	Sulphate as SO4 (Water Soluble)	Air Dried & Ground
KONECL	Chloride (2:1) by Colorimetry	Air Dried & Ground
KONENO3	Nitrate as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N (2:1) by Colorimetry	Air Dried & Ground
KONENS	Nitrite as N by Colorimetry	Filtered
Leachate Prep CEN 2:1	Leachate Prep, 1-Stage 2:1 (BSEN 12457-1)	As Received
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Filtered
PHCONDW	pH	Filtered
PHEGCMS	Low Level Phenols by GCMS	Filtered
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	Filtered
SFAPI	Cyanide (Free) by SFA	Filtered
SFAPI	Cyanide (Total) by SFA	Filtered
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	Filtered



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22
 Project No: 22122301
 Date Issued: 12/01/2023

SUB002	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB020	Asbestos Stage 1 (with Stage 2+3 Trigger)	
SUB022	Nitrogen (Total)	
TOCW	LOC: Leached Organic Carbon	Filtered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Filtered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Filtered
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
VOCHSAS	BTEX by GCMS	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22
Project No: 22122301
Date Issued: 12/01/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

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Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22110217

Quote: BEC220926756 V2.1

Project Ref: H2060-22

Site: H2060-22 Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 02/11/2022

Analysis Date: 17/11/2022

Date Issued: 17/11/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Account Manager

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 22110217
Date Issued: 17/11/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22110217-001	IP02-101-W-0.20	01/11/2022 00:00:00	WATER	Ground Water



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22110217
 Date Issued: 17/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID
					001
					Customer ID
					IP02-101-W-0.20
					Sample Type
					WATER
					Sampling Date
					01/11/2022
Analysis	Method Code	MDL	Units	Accred.	
Ammoniacal Nitrogen as N	KONENS	0.01	mg/l	U	0.90
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	U	<0.020
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100
Conductivity at 25°C	PHCONDW	100	µS/cm	U	1980
pH	PHCONDW	1	pH units	U	7.2
TDS as mg/L	WSLM27	5	mg/l	N	1170
Chloride as Cl	KONENS	1	mg/l	U	385
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003
Nitrite as N	KONENS	0.01	mg/l	U	<0.01
Nitrate as N	KONENS	0.2	mg/l	U	<0.2
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.04
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02
Sulphide as S	SFAPI	0.02	mg/l	U	0.33
Total Cyanide	SFAPI	0.02	mg/l	U	0.04



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22110217
 Date Issued: 17/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID
					001
					Customer ID
					IP02-101-W-0.20
					Sample Type
					WATER
					Sampling Date
					01/11/2022
Analysis	Method Code	MDL	Units	Accred.	
COD (Settled)	WSLM11	5	mg/l	U	39
Bicarbonate Alkalinity	WSLM12	2	mg/l	U	280
Carbonate Alkalinity	WSLM12	2	mg/l	U	Nil
Total Nitrogen as N	TNW	1	mg/l	N	2
BOD (5 day)	WSLM20	1	mg O2/l	U	9.4* G
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.008
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.002
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	0.010
Manganese as Mn	ICPMSW (Dissolved)	0.002	mg/l	U	0.564
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.002
Selenium as Se	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001
Vanadium as V	ICPMSW (Dissolved)	0.001	mg/l	U	0.002
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.020
Barium as Ba	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.11
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.04
Calcium as Ca	ICPWATVAR (Dissolved)	1	mg/l	U	84



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22110217
 Date Issued: 17/11/2022



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID
					001
					Customer ID
					IP02-101-W-0.20
					Sample Type
					WATER
					Sampling Date
					01/11/2022
Analysis	Method Code	MDL	Units	Accred.	
Iron as Fe	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.56
Magnesium as Mg	ICPWATVAR (Dissolved)	1	mg/l	U	5
Potassium as K	ICPWATVAR (Dissolved)	1	mg/l	U	12
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	57
Sodium as Na	ICPWATVAR (Dissolved)	1	mg/l	U	323
Benzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	U	<10
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	U	<5
Toluene HS_1D_AR	BTEXHSA	5	µg/l	U	<5
Acenaphthene	PAHMSW	0.01	µg/l	U	1.05
Acenaphthylene	PAHMSW	0.01	µg/l	U	<1.00 D
Anthracene	PAHMSW	0.01	µg/l	U	3.80
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	35.4
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	75.3
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	84.0
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	75.8
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	29.7
Chrysene	PAHMSW	0.01	µg/l	U	46.5



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22110217
 Date Issued: 17/11/2022



Analysis Results

Sample ID	001
Customer ID	IP02-101-W-0.20
Sample Type	WATER
Sampling Date	01/11/2022

Analysis	Method Code	MDL	Units	Accred.	
Coronene	PAHMSW	0.01	µg/l	U	17.1
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<1.00 D
Fluoranthene	PAHMSW	0.01	µg/l	U	90.5
Fluorene	PAHMSW	0.01	µg/l	U	<1.00 D
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	71.1
Naphthalene	PAHMSW	0.01	µg/l	U	<1.00 D
Phenanthrene	PAHMSW	0.01	µg/l	U	16.9
Pyrene	PAHMSW	0.01	µg/l	U	88.2
Total PAH 16	PAHMSW	0.16	µg/l	U	622
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<1.00 D
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<1.00 D
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	5.57
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	20.0
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	2.45
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	28.2
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<1.00 D
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<1.00 D
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	1.03
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	7.14



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22110217
 Date Issued: 17/11/2022



Analysis Results

					Sample ID	001
					Customer ID	IP02-101-W-0.20
					Sample Type	WATER
					Sampling Date	01/11/2022
Analysis	Method Code	MDL	Units	Accred.		
>C35-C44 (Aromatic) EH_CU_ID_AR	TPHFID (Aromatic)	0.01	mg/l	N	1.15	
Total TPH >C8-C40 (Aromatic) EH_CU_ID_AR	TPHFID (Aromatic)	0.01	mg/l	U	9.40	
Benzene	VOCHSAW	1	µg/l	U	<1	
Ethylbenzene	VOCHSAW	0.5	µg/l	U	<0.5	
m and p-Xylene	VOCHSAW	1	µg/l	U	<1	
MTBE	VOCHSAW	1	µg/l	N	<1	
o-Xylene	VOCHSAW	1	µg/l	U	<1	
Toluene	VOCHSAW	1	µg/l	U	<1	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	0.0008	
Phenol	PHEGCMS	0.0005	mg/l	N	0.0012	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0027	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	
Chlorine (Total)	SUB024	1	mg/l	N	<0.1	



TEST REPORT ASC/55880

Customer: Environmental Chemistry
SOCOTEC
Etwall Building
Bretby Business Park
Ashby Road
Burton Upon Trent
DE15 0YZ

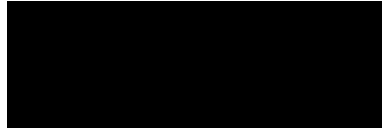
Testing Facility: Advanced Chemistry & Research
SOCOTEC
Etwall Building
Bretby Business Park
Ashby Road
Burton Upon Trent
DE15 0YZ

Purchase Order Number: 22110217

Date Samples Received: 03 November 2022

Condition of Samples: Ambient and Satisfactory

Approved by:



Approver's name:



Job Title: Senior Analyst

Test Report Date: 09 November 2022

Sample and Method Descriptions

Number of Samples Received	Matrix / Sample Description	Method ID	Description
1	Ground Water	IHM	Total Chlorine – Sample was analysed by spectrophotometer following reaction with Hach chemistry test kit.

Results

Table 1: Ground Water Sample – Total Chlorine Result

		Units	mg/L
		Method ID (ASC/SOP/xxx)	IHM
		Instrument Limit of Detection	0.1
		UKAS	NO
Customer Sample Reference	Laboratory Sample Reference	Total Chlorine	
22110217-001	ASC55880.001	<0.1	

END OF TEST REPORT



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22110217
 Date Issued: 17/11/2022

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
IP02-101-W-0.20	22110217-001	VOCHSAW						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 22110217
 Date Issued: 17/11/2022

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
BTEXHSA	BTEX by GCFID	Unfiltered
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Unfiltered
ICPMSW (Dissolved)	Arsenic (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Manganese (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Selenium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Vanadium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Water by ICPMS	Filtered
ICPWATVAR (Dissolved)	Barium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Boron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Calcium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Iron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Magnesium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Potassium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Sodium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Water	Filtered
KONENS	Ammoniacal Nitrogen as N	Filtered
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N by Colorimetry	Filtered
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Unfiltered
PHCONDW	Electrical Conductivity @ 25°C	Unfiltered
PHCONDW	pH	Unfiltered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
SFAPI	Cyanide (Complex) by SFA	Unfiltered
SFAPI	Cyanide (Free) by SFA	Unfiltered
SFAPI	Cyanide (Total) by SFA	Unfiltered
SFAPI	Sulphide by SFA	Unfiltered
SUB024	Chlorine (Total)	
TNW	Nitrogen (Total)	Unfiltered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Unfiltered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Unfiltered
VOCHSAW	BTEX & MTBE by GCMS	Unfiltered
WSLM11	COD: Chemical Oxygen Demand (Settled)	Unfiltered
WSLM12	Bicarbonate Alkalinity (calc)	Unfiltered
WSLM12	Carbonate Alkalinity (calc)	Unfiltered
WSLM20	BOD: Biological Oxygen Demand (Total)	Unfiltered
WSLM27	TDS: Total Dissolved Solids	Filtered



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 22110217
Date Issued: 17/11/2022

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 22110217
Date Issued: 17/11/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

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- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 105 ° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

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Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 22120002

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22 Lyneham

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 1

Date Received: 01/12/2022

Analysis Date: 15/12/2022

Date Issued: 16/12/2022

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22120002
Date Issued: 16/12/2022

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
22120002-001	SW04-291122-W-0.00	29/11/2022 00:00:00	WATER	Surface Water



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120002
 Date Issued: 16/12/2022



Analysis Results

Sample ID	001
Customer ID	SW04-291122-W-0.00
Sample Type	WATER
Sampling Date	29/11/2022

Analysis	Method Code	MDL	Units	Accred.	
Ammoniacal Nitrogen as N	KONENS	0.01	mg/l	U	0.70
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100 _B
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	U	<0.020* _B
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100
Conductivity at 25°C	PHCONDW	100	µS/cm	U	1190
pH	PHCONDW	1	pH units	U	7.1
Chloride as Cl	KONENS	1	mg/l	U	53
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003
Nitrite as N	KONENS	0.01	mg/l	U	<0.01
Nitrate as N	KONENS	0.2	mg/l	U	<0.2
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02
Sulphide as S	SFAPI	0.02	mg/l	U	0.22
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02
COD (Settled)	WSLM11	5	mg/l	U	45



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120002
 Date Issued: 16/12/2022



Analysis Results

Sample ID	001
Customer ID	SW04-291122-W-0. 00
Sample Type	WATER
Sampling Date	29/11/2022

Analysis	Method Code	MDL	Units	Accred.	
Total Nitrogen as N	TNW	1	mg/l	N	<5 _D
BOD (5 day)	WSLM20	1	mg O2/l	U	5.7* _G
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.010 _D
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00020 _D
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.010 _D
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.010 _D
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.010 _D
Manganese as Mn	ICPMSW (Dissolved)	0.002	mg/l	U	1.19
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00030 _D
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.020
Selenium as Se	ICPMSW (Dissolved)	0.001	mg/l	U	<0.010 _D
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.021
Barium as Ba	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.04
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.03
Calcium as Ca	ICPWATVAR (Dissolved)	1	mg/l	U	261
Iron as Fe	ICPWATVAR (Dissolved)	0.01	mg/l	U	5.43
Magnesium as Mg	ICPWATVAR (Dissolved)	1	mg/l	U	8
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	360
Total Hardness as CaCO3	ICPWATVAR (Dissolved)	6.6	mg/l	U	685



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120002
 Date Issued: 16/12/2022



Analysis Results

Sample ID	001
Customer ID	SW04-291122-W-0. 00
Sample Type	WATER
Sampling Date	29/11/2022

Analysis	Method Code	MDL	Units	Accred.	
Benzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5* _B
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	U	<10
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	U	<5* _B
Toluene HS_1D_AR	BTEXHSA	5	µg/l	U	<5
Acenaphthene	PAHMSW	0.01	µg/l	U	<0.01
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01
Anthracene	PAHMSW	0.01	µg/l	U	<0.01
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.01
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.01
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	0.05
Chrysene	PAHMSW	0.01	µg/l	U	0.02
Coronene	PAHMSW	0.01	µg/l	U	<0.01
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01
Fluoranthene	PAHMSW	0.01	µg/l	U	0.03
Fluorene	PAHMSW	0.01	µg/l	U	<0.01
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120002
 Date Issued: 16/12/2022



Analysis Results

Sample ID	001
Customer ID	SW04-291122-W-0. 00
Sample Type	WATER
Sampling Date	29/11/2022

Analysis	Method Code	MDL	Units	Accred.	
Naphthalene	PAHMSW	0.01	µg/l	U	<0.01
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.01
Pyrene	PAHMSW	0.01	µg/l	U	0.03
Total PAH 16	PAHMSW	0.16	µg/l	U	0.25
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.01
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01* _B
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02* _B
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.03
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	0.02
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.09
Benzene	VOCHSAW	1	µg/l	U	<1
Ethylbenzene	VOCHSAW	0.5	µg/l	U	<0.5
m and p-Xylene	VOCHSAW	1	µg/l	U	<1



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120002
 Date Issued: 16/12/2022



Analysis Results

Sample ID	001
Customer ID	SW04-291122-W-0. 00
Sample Type	WATER
Sampling Date	29/11/2022

Analysis	Method Code	MDL	Units	Accred.	
MTBE	VOCHSAW	1	µg/l	N	<1
o-Xylene	VOCHSAW	1	µg/l	U	<1
Toluene	VOCHSAW	1	µg/l	U	<1
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005
Phenol	PHEGCMS	0.0005	mg/l	N	<0.0005
Total Phenols	PHEGCMS	0.002	mg/l	N	<0.0020
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 22120002
 Date Issued: 16/12/2022

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
BTEXHSA	BTEX by GCFID	Unfiltered
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Unfiltered
ICPMSW (Dissolved)	Arsenic (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Manganese (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Selenium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Water by ICPMS	Filtered
ICPWATVAR (Dissolved)	Barium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Boron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Calcium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Iron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Magnesium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Hardness as CaCO ₃ in Water	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO ₄ (Diss.) in Water	Filtered
KONENS	Ammoniacal Nitrogen as N	Filtered
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N by Colorimetry	Filtered
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Unfiltered
PHCONDW	Electrical Conductivity @ 25°C	Unfiltered
PHCONDW	pH	Unfiltered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
SFAPI	Cyanide (Complex) by SFA	Unfiltered
SFAPI	Cyanide (Free) by SFA	Unfiltered
SFAPI	Cyanide (Total) by SFA	Unfiltered
SFAPI	Sulphide by SFA	Unfiltered
TNW	Nitrogen (Total)	Unfiltered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Unfiltered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Unfiltered
VOCHSAW	BTEX & MTBE by GCMS	Unfiltered
WSLM11	COD: Chemical Oxygen Demand (Settled)	Unfiltered
WSLM20	BOD: Biological Oxygen Demand (Total)	Unfiltered



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22120002
Date Issued: 16/12/2022

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 22120002
Date Issued: 16/12/2022

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 105 ° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 23011854

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22 Lyneham

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 4

Date Received: 21/01/2023

Analysis Date: 30/01/2023

Date Issued: 31/01/2023

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 23011854
Date Issued: 31/01/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
23011854-001	ATK_BH05-180123-EW-4.00	18/01/2023 00:00:00	WATER	Ground Water
23011854-002	ATK_BH09-180123-EW-7.00	18/01/2023 00:00:00	WATER	Ground Water
23011854-003	ATK_BH14-180123-EW-2.00	18/01/2023 00:00:00	WATER	Ground Water
23011854-004	ATK_BH17-180123-EW-7.00	18/01/2023 00:00:00	WATER	Ground Water

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004
					Customer ID	ATK_BH05-180123-EW-4.00	ATK_BH09-180123-EW-7.00	ATK_BH14-180123-EW-2.00	ATK_BH17-180123-EW-7.00
					Sample Type	WATER	WATER	WATER	WATER
					Sampling Date	18/01/2023	18/01/2023	18/01/2023	18/01/2023
Ammoniacal Nitrogen as N	KONENS	0.01	mg/l	U	0.30	0.20	0.02	0.70	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	<0.100	<0.100	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005	<0.005	<0.005	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100 _B	<0.100 _B	<0.100 _B	<0.100 _B	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	U	<0.020* _B	<0.020* _B	<0.020* _B	<0.020* _B	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	<0.100	<0.100	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005	<0.005	<0.005	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	<0.100	<0.100	<0.100	
Conductivity at 25°C	PHCONDW	100	µS/cm	U	3580	1580	1500	2440	
pH	PHCONDW	1	pH units	U	7.5	7.1	7.3	6.8	
Chloride as Cl	KONENS	1	mg/l	U	145	188	97	57	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	<0.003	<0.003	<0.003	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01	0.03	<0.01	0.02	
Nitrate as N	KONENS	0.2	mg/l	U	<0.2	<0.2	<0.2	<0.2	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	
Sulphide as S	SFAPI	0.02	mg/l	U	0.03	0.58	0.12	0.16	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	
COD (Settled)	WSLM11	5	mg/l	U	18	211	9	32	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 23011854
 Date Issued: 31/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004
					Customer ID	ATK_BH05-180123-EW-4.00	ATK_BH09-180123-EW-7.00	ATK_BH14-180123-EW-2.00	ATK_BH17-180123-EW-7.00
					Sample Type	WATER	WATER	WATER	WATER
					Sampling Date	18/01/2023	18/01/2023	18/01/2023	18/01/2023
Total Nitrogen as N	TNW	1	mg/l	N	<5 _D	<5 _D	<5 _D	<5 _D	
BOD (5 day)	WSLM20	1	mg O2/l	U	5.8* _A	7.0* _{A,G}	<1.3* _{A,F}	7.4* _A	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	0.001	<0.001	0.002	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	0.00282	<0.00002	0.00074	<0.00002	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	<0.001	<0.001	<0.001	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.017	<0.001	0.008	0.002	
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	0.004	<0.001	<0.001	<0.001	
Manganese as Mn	ICPMSW (Dissolved)	0.002	mg/l	U	2.95	2.59	0.562	2.63	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	<0.00003	<0.00003	<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.018	0.011	0.025	0.024	
Selenium as Se	ICPMSW (Dissolved)	0.001	mg/l	U	0.001	<0.001	<0.001	<0.001	
Vanadium as V	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	<0.001	<0.001	<0.001	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.039	0.021	0.055	0.025	
Barium as Ba	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.04	0.81	0.13	0.06	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.80	0.08	0.12	0.93	
Calcium as Ca	ICPWATVAR (Dissolved)	1	mg/l	U	659	153	238	393	
Iron as Fe	ICPWATVAR (Dissolved)	0.01	mg/l	U	<0.01	0.17	<0.01	<0.01	
Magnesium as Mg	ICPWATVAR (Dissolved)	1	mg/l	U	117	18	19	54	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	2280	20	457	956	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004
					Customer ID	ATK_BH05-180123-EW-4.00	ATK_BH09-180123-EW-7.00	ATK_BH14-180123-EW-2.00	ATK_BH17-180123-EW-7.00
					Sample Type	WATER	WATER	WATER	WATER
					Sampling Date	18/01/2023	18/01/2023	18/01/2023	18/01/2023
Benzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	U	<10	<10	<10	<10	
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	U	<5* _B	<5* _B	<5* _B	<5* _B	
Toluene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	
Acenaphthene	PAHMSW	0.01	µg/l	U	<0.40* _{B,D}	0.52* _B	<0.04 _D	<0.01	
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.40 _D	<0.40 _D	<0.04 _D	<0.01	
Anthracene	PAHMSW	0.01	µg/l	U	<0.40 _D	<0.40 _D	<0.04 _D	<0.01	
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	<0.40 _D	0.45	<0.04 _D	<0.01	
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.40 _D	0.63	<0.04 _D	<0.01	
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.40 _D	<0.40 _D	<0.04 _D	<0.01	
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	<0.40 _D	<0.40 _D	<0.04 _D	<0.01	
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.40 _D	<0.40 _D	<0.04 _D	<0.01	
Chrysene	PAHMSW	0.01	µg/l	U	<0.40 _D	0.43	<0.04 _D	<0.01	
Coronene	PAHMSW	0.01	µg/l	U	<0.40 _D	<0.40 _D	<0.04 _D	<0.01	
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.40 _D	<0.40 _D	<0.04 _D	<0.01	
Fluoranthene	PAHMSW	0.01	µg/l	U	<0.40 _D	0.74	0.07	<0.01	
Fluorene	PAHMSW	0.01	µg/l	U	<0.40* _{B,D}	<0.40* _{B,D}	<0.04 _D	<0.01	
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.40 _D	<0.40 _D	<0.04 _D	<0.01	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004
					Customer ID	ATK_BH05-180123-EW-4.00	ATK_BH09-180123-EW-7.00	ATK_BH14-180123-EW-2.00	ATK_BH17-180123-EW-7.00
					Sample Type	WATER	WATER	WATER	WATER
					Sampling Date	18/01/2023	18/01/2023	18/01/2023	18/01/2023
Naphthalene	PAHMSW	0.01	µg/l	U	<0.40 _D	2.14	<0.04 _D	<0.01	
Phenanthrene	PAHMSW	0.01	µg/l	U	<0.40 _D	0.78	0.05* _B	<0.01* _B	
Pyrene	PAHMSW	0.01	µg/l	U	<0.40 _D	0.69	0.06	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	<6.40 _D	9.58	0.69	<0.16	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	<0.01	<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	<0.01	<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	<0.01	<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	0.03	0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.40 _D	<0.40 _D	<0.01	<0.01	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	0.04	0.02	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	<0.01	<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.40* _{B,D}	<0.40* _{B,D}	<0.01	<0.01	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	<0.01* _B	<0.01* _B	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	<0.01	<0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.40 _D	<0.40 _D	<0.01	<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.40 _D	<0.40 _D	<0.01	<0.01	
Benzene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	
Ethylbenzene	VOCHSAW	0.5	µg/l	U	<0.5	<0.5	<0.5	<0.5	
m and p-Xylene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 23011854
 Date Issued: 31/01/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004
					Customer ID	ATK_BH05-180123-EW-4.00	ATK_BH09-180123-EW-7.00	ATK_BH14-180123-EW-2.00	ATK_BH17-180123-EW-7.00
					Sample Type	WATER	WATER	WATER	WATER
					Sampling Date	18/01/2023	18/01/2023	18/01/2023	18/01/2023
MTBE	VOCHSAW	1	µg/l	N	<1	<1	<1	<1	
o-Xylene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	
Toluene	VOCHSAW	1	µg/l	U	<1	2	<1	<1	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	0.0005	0.0023	<0.0005	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	0.0011	<0.0005	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	<0.0005	0.0055	<0.0005	<0.0005	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0020	0.0094	<0.0020	<0.0020	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	0.0005	<0.0005	<0.0005	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 23011854
 Date Issued: 31/01/2023

Deviating Sample Report

<u>Sample Reference</u>	<u>Text ID</u>	<u>Method Code</u>	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
ATK_BH05-180123-EW-4.00	23011854-001	WSLM20						✓
ATK_BH09-180123-EW-7.00	23011854-002	WSLM20						✓
ATK_BH14-180123-EW-2.00	23011854-003	WSLM20						✓
ATK_BH17-180123-EW-7.00	23011854-004	WSLM20						✓



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham
 Project No: 23011854
 Date Issued: 31/01/2023

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
BTEXHSA	BTEX by GCFID	Unfiltered
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Unfiltered
ICPMSW (Dissolved)	Arsenic (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Manganese (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Selenium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Vanadium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Water by ICPMS	Filtered
ICPWATVAR (Dissolved)	Barium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Boron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Calcium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Iron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Magnesium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO ₄ (Diss.) in Water	Filtered
KONENS	Ammoniacal Nitrogen as N	Filtered
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N by Colorimetry	Filtered
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Unfiltered
PHCONDW	Electrical Conductivity @ 25°C	Unfiltered
PHCONDW	pH	Unfiltered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
SFAPI	Cyanide (Complex) by SFA	Unfiltered
SFAPI	Cyanide (Free) by SFA	Unfiltered
SFAPI	Cyanide (Total) by SFA	Unfiltered
SFAPI	Sulphide by SFA	Unfiltered
TNW	Nitrogen (Total)	Unfiltered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Unfiltered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Unfiltered
VOCHSAW	BTEX & MTBE by GCMS	Unfiltered
WSLM11	COD: Chemical Oxygen Demand (Settled)	Unfiltered
WSLM20	BOD: Biological Oxygen Demand (Total)	Unfiltered



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 23011854
Date Issued: 31/01/2023

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham
Project No: 23011854
Date Issued: 31/01/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 105 ° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 23020203

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: H2060-22 Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 7

Date Received: 02/02/2023

Analysis Date: 13/02/2023

Date Issued: 13/02/2023

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Lead

[REDACTED]
01283 554137



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 23020203
Date Issued: 13/02/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
23020203-001	ATK_BH05-10223-EW-3.40	01/02/2023 00:00:00	WATER	Ground Water
23020203-002	ATK_BH09-10223-EW-3.75	01/02/2023 00:00:00	WATER	Ground Water
23020203-003	ATK_BH010-10223-EW-4.59	01/02/2023 00:00:00	WATER	Ground Water
23020203-004	ATK_BH014-10223-EW-0.27	01/02/2023 00:00:00	WATER	Ground Water
23020203-005	ATK_BH017-10223-EW-1.94	01/02/2023 00:00:00	WATER	Ground Water
23020203-006	SW01-10223-EW-4.59	01/02/2023 00:00:00	WATER	Surface Water
23020203-007	SW02-10223-EW-4.59	01/02/2023 00:00:00	WATER	Surface Water

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005	006	007
					Customer ID	ATK_BH05-10223-EW-3.40	ATK_BH09-10223-EW-3.75	ATK_BH010-10223-EW-4.59	ATK_BH014-10223-EW-0.27	ATK_BH017-10223-EW-1.94	SW01-10223-EW-4.59	SW02-10223-EW-4.59
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023
Ammoniacal Nitrogen as N	KONENS	0.01	mg/l	U	0.03	0.12	0.90	0.04	0.70	<0.01	<0.01	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	U	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	
Conductivity at 25°C	PHCONDW	100	µS/cm	U	2380	1820	4130	1440	2060	782	862	
pH	PHCONDW	1	pH units	U	7.0	7.0	6.8	7.3	6.8	7.8	7.8	
Chloride as Cl	KONENS	1	mg/l	U	248	207	194	79	48	29	37	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.01	
Nitrate as N	KONENS	0.2	mg/l	U	<0.2	<0.2	<0.2	0.2	<0.2	1.5	1.1	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Sulphide as S	SFAPI	0.02	mg/l	U	<0.02	0.50	0.30	<0.02	0.09	<0.02	<0.02	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
COD (Settled)	WSLM11	5	mg/l	U	907	367	55	46	72	54	17	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005	006	007
					Customer ID	ATK_BH05-10223-EW-3.40	ATK_BH09-10223-EW-3.75	ATK_BH010-10223-EW-4.59	ATK_BH014-10223-EW-0.27	ATK_BH017-10223-EW-1.94	SW01-10223-EW-4.59	SW02-10223-EW-4.59
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023
Total Nitrogen as N	TNW	1	mg/l	N	<1	<1	<1	<1	<1	<1	<1	<1
BOD (5 day)	WSLM20	1	mg O2/l	U	<1.0* _B	<1.0* _B	<1.0* _B	5.7* _{B,C}	1.3* _B	2.8* _B	1.1	1.1
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.001	0.001	0.003	<0.001	0.002	<0.001	<0.001	<0.001
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	<0.001	<0.001	0.001	<0.001	0.002	0.002	0.002
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese as Mn	ICPMSW (Dissolved)	0.002	mg/l	U	1.95	3.20	1.96	0.823	2.35	0.014	0.004	0.004
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.038	0.010	0.018	0.020	0.018	0.002	0.006	0.006
Selenium as Se	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium as V	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	<0.001	<0.001	<0.001	<0.001			
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.046	0.027	0.083	0.033	0.065	0.062	0.065	0.065
Barium as Ba	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.75	0.98	0.07	0.08	0.08	0.02	0.02	0.02
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.27	0.11	1.05	0.10	0.65	0.02	0.01	0.01
Calcium as Ca	ICPWATVAR (Dissolved)	1	mg/l	U	422	256	563	288	414	156	169	169
Iron as Fe	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.60	0.23	0.09	0.01	0.11	0.01	0.01	0.01
Magnesium as Mg	ICPWATVAR (Dissolved)	1	mg/l	U	47	24	148	19	38	9	8	8
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	163	82	1880	504	650	169	197	197



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 23020203
 Date Issued: 13/02/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005	006	007
					Customer ID	ATK_BH05-10223-EW-3.40	ATK_BH09-10223-EW-3.75	ATK_BH010-10223-EW-4.59	ATK_BH014-10223-EW-0.27	ATK_BH017-10223-EW-1.94	SW01-10223-EW-4.59	SW02-10223-EW-4.59
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023
Total Hardness as CaCO3	ICPWATVAR (Dissolved)	6.6	mg/l	U							425	454
Benzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	<5	<5	<5	<5
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	U	<10	<10	<10	<10	<10	<10	<10	<10
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	<5	<5	<5	<5
Toluene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	<5	<5	<5	<5
Acenaphthene	PAHMSW	0.01	µg/l	U	0.06	0.17	0.01	<0.01	0.03	<0.01	<0.01	<0.01
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	PAHMSW	0.01	µg/l	U	0.04	0.10	0.01	<0.01	0.06	<0.01	<0.01	<0.01
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	0.08	0.24	0.06	0.01	0.26	<0.01	<0.01	<0.01
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	0.08	0.33	0.09	<0.01	0.32	<0.01	<0.01	<0.01
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	0.11	0.36	0.11	<0.01	0.38	<0.01	<0.01	<0.01
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	0.06	0.24	0.08	<0.01	0.22	<0.01	<0.01	<0.01
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	0.04	0.14	0.04	<0.01	0.15	<0.01	<0.01	<0.01
Chrysene	PAHMSW	0.01	µg/l	U	0.08	0.22	0.07	0.01	0.24	<0.01	<0.01	<0.01
Coronene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoranthene	PAHMSW	0.01	µg/l	U	0.24	0.92	0.14	0.04	0.54	<0.01	<0.01	<0.01
Fluorene	PAHMSW	0.01	µg/l	U	0.05	0.13	0.01	<0.01	0.03	<0.01	<0.01	<0.01

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005	006	007
					Customer ID	ATK_BH05-10223-EW-3.40	ATK_BH09-10223-EW-3.75	ATK_BH010-10223-EW-4.59	ATK_BH014-10223-EW-0.27	ATK_BH017-10223-EW-1.94	SW01-10223-EW-4.59	SW02-10223-EW-4.59
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	0.07	0.25	0.07	<0.01	0.22	<0.01	<0.01	
Naphthalene	PAHMSW	0.01	µg/l	U	0.17	0.75	0.06	<0.01	0.08	<0.01	<0.01	
Phenanthrene	PAHMSW	0.01	µg/l	U	0.13	0.29	0.05	0.02	0.22	<0.01	<0.01	
Pyrene	PAHMSW	0.01	µg/l	U	0.21	0.66	0.14	0.04	0.49	<0.01	<0.01	
Total PAH 16	PAHMSW	0.16	µg/l	U	1.43	4.82	0.95	0.23	3.25	<0.16	<0.16	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.06	0.04	0.10	0.06	0.07	0.03	0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	0.02	0.02	0.01	0.01	0.02	<0.01	<0.01	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.08	0.07	0.12	0.08	0.09	0.04	0.01	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01* _B	<0.01* _B	<0.01* _B	<0.01* _B	<0.01* _B	<0.01* _B	<0.01* _B	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02	0.03	0.03	0.01	0.02	<0.01	<0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.02	0.05	0.04	0.02	0.03	<0.01	0.01	
Benzene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	<1	<1	<1	
Ethylbenzene	VOCHSAW	0.5	µg/l	U	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 23020203
 Date Issued: 13/02/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005	006	007
					Customer ID	ATK_BH05-10223-EW-3.40	ATK_BH09-10223-EW-3.75	ATK_BH010-10223-EW-4.59	ATK_BH014-10223-EW-0.27	ATK_BH017-10223-EW-1.94	SW01-10223-EW-4.59	SW02-10223-EW-4.59
					Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER
					Sampling Date	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023	01/02/2023
m and p-Xylene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	<1	<1	<1	<1
MTBE	VOCHSAW	1	µg/l	N	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	VOCHSAW	1	µg/l	U	<1	2	<1	<1	<1	<1	<1	<1
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	0.0016	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	0.0093	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Phenol	PHEGCMS	0.0005	mg/l	N	0.0008	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0020	0.0136	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-H2060-22 Lyneham Banks
 Project No: 23020203
 Date Issued: 13/02/2023

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
BTEXHSA	BTEX by GCFID	Unfiltered
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Unfiltered
ICPMSW (Dissolved)	Arsenic (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Manganese (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Selenium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Vanadium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Water by ICPMS	Filtered
ICPWATVAR (Dissolved)	Barium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Boron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Calcium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Iron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Magnesium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Hardness as CaCO ₃ in Water	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO ₄ (Diss.) in Water	Filtered
KONENS	Ammoniacal Nitrogen as N	Filtered
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N by Colorimetry	Filtered
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Unfiltered
PHCONDW	Electrical Conductivity @ 25°C	Unfiltered
PHCONDW	pH	Unfiltered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
SFAPI	Cyanide (Complex) by SFA	Unfiltered
SFAPI	Cyanide (Free) by SFA	Unfiltered
SFAPI	Cyanide (Total) by SFA	Unfiltered
SFAPI	Sulphide by SFA	Unfiltered
TNW	Nitrogen (Total)	Unfiltered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Unfiltered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Unfiltered
VOCHSAW	BTEX & MTBE by GCMS	Unfiltered
WSLM11	COD: Chemical Oxygen Demand (Settled)	Unfiltered
WSLM20	BOD: Biological Oxygen Demand (Total)	Unfiltered



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 23020203
Date Issued: 13/02/2023

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-H2060-22 Lyneham Banks
Project No: 23020203
Date Issued: 13/02/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 105 ° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Geotechnical

Project: 23021706

Quote: BEC220926756 V3.1

Project Ref: H2060-22

Site: Lyneham Banks

Contact: [REDACTED]

Address: Unit 15, Crosby Yard
Wildmill
Bridgend
Mid Glamorgan
CF31 1JZ

E-Mail: [REDACTED]

Phone: [REDACTED]

No. Samples Received: 5

Date Received: 17/02/2023

Analysis Date: 03/03/2023

Date Issued: 03/03/2023

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory

[REDACTED]
Reported by Customer Service Co-Ordinator

[REDACTED]
01283 204384



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 23021706
Date Issued: 03/03/2023

Samples Analysed

<u>Text ID</u>	<u>Sample Reference</u>	<u>Sampling Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
23021706-001	ATK_BH05-1-EW-4.10	16/02/2023 10:30:00	WATER	Ground Water
23021706-002	ATK_BH17-1-EW-5.00	16/02/2023 11:00:00	WATER	Ground Water
23021706-003	ATK_BH10-1-EW-6.00	16/02/2023 13:00:00	WATER	Ground Water
23021706-004	ATK_BH14-1-EW-1.50	16/02/2023 14:00:00	WATER	Ground Water
23021706-005	ATK_BH09-1-EW-6.00	16/02/2023 08:30:00	WATER	Ground Water

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005
					Customer ID	ATK_BH05-1-EW-4.10	ATK_BH17-1-EW-5.00	ATK_BH10-1-EW-6.00	ATK_BH14-1-EW-1.50	ATK_BH09-1-EW-6.00
					Sample Type	WATER	WATER	WATER	WATER	WATER
					Sampling Date	16/02/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023
Ammoniacal Nitrogen as N	KONENS	0.01	mg/l	U	<0.01	0.50	0.40	<0.01	0.07	
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100 _B	<0.100 _B	<0.100 _B	<0.100 _B	<0.100 _B	
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005* _B	<0.005* _B	<0.005* _B	<0.005* _B	<0.005* _B	
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	<0.100	<0.100	<0.100	<0.100	
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.02	mg/l	U	<0.020	<0.020	<0.020	<0.020	<0.020	
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.1	mg/l	N	<0.100	<0.100	<0.100	<0.100	<0.100	
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.005	mg/l	U	<0.005	<0.005	<0.005	<0.005	<0.005	
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.1	mg/l	U	<0.100	<0.100	<0.100	<0.100	<0.100	
Conductivity at 25°C	PHCONDW	100	µS/cm	U	3520	2140	3780	1300	1850	
pH	PHCONDW	1	pH units	U	6.8	6.6	6.7	7.2	6.9	
Chloride as Cl	KONENS	1	mg/l	U	149	47	178	54	239	
Chromium (VI) as Cr	KONENS	0.003	mg/l	U	<0.003	<0.003	<0.003	<0.003	<0.003	
Nitrite as N	KONENS	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	
Nitrate as N	KONENS	0.2	mg/l	U	0.4	<0.2	<0.2	<0.2	<0.2	
Complex Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	<0.02	
Free Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	<0.02	
Sulphide as S	SFAPI	0.02	mg/l	U	0.04	0.07	0.03	0.03	0.12	
Total Cyanide	SFAPI	0.02	mg/l	U	<0.02	<0.02	<0.02	<0.02	<0.02	
COD (Settled)	WSLM11	5	mg/l	U	8	16	9	10	76	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 23021706
 Date Issued: 03/03/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005
					Customer ID	ATK_BH05-1-EW-4.10	ATK_BH17-1-EW-5.00	ATK_BH10-1-EW-6.00	ATK_BH14-1-EW-1.50	ATK_BH09-1-EW-6.00
					Sample Type	WATER	WATER	WATER	WATER	WATER
					Sampling Date	16/02/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023
Total Nitrogen as N	TNW	1	mg/l	N	<2 _D	<2 _D	<2 _D	<2 _D	<2 _D	
BOD (5 day)	WSLM20	1	mg O2/l	U	3.2* _B	<1.0* _B	<1.0* _B	<1.0* _B	9.1* _{B,G}	
Arsenic as As	ICPMSW (Dissolved)	0.001	mg/l	U	0.001	0.003	0.001	<0.001	0.002	
Cadmium as Cd	ICPMSW (Dissolved)	0.00002	mg/l	U	0.00060	<0.00002	0.00058	0.00027	0.00004	
Total Chromium as Cr	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	0.003	0.002	<0.001	0.002	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	0.004	<0.001	0.003	0.003	<0.001	
Lead as Pb	ICPMSW (Dissolved)	0.001	mg/l	U	0.002	<0.001	<0.001	0.001	<0.001	
Manganese as Mn	ICPMSW (Dissolved)	0.002	mg/l	U	0.807	2.37	0.976	0.091	3.76	
Mercury as Hg	ICPMSW (Dissolved)	0.00003	mg/l	U	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
Nickel as Ni	ICPMSW (Dissolved)	0.001	mg/l	U	0.013	0.019	0.017	0.014	0.018	
Selenium as Se	ICPMSW (Dissolved)	0.001	mg/l	U	0.003	0.002	0.001	<0.001	<0.001	
Vanadium as V	ICPMSW (Dissolved)	0.001	mg/l	U	<0.001	0.001	<0.001	<0.001	<0.001	
Zinc as Zn	ICPMSW (Dissolved)	0.002	mg/l	U	0.021	0.016	0.044	0.012	0.009	
Barium as Ba	ICPWATVAR (Dissolved)	0.01	mg/l	U	0.08	0.08	0.05	0.10	0.44	
Boron as B	ICPWATVAR (Dissolved)	0.01	mg/l	U	1.00	0.67	0.53	0.07	0.07	
Calcium as Ca	ICPWATVAR (Dissolved)	1	mg/l	U	405	346	<10 _D	232	212	
Iron as Fe	ICPWATVAR (Dissolved)	0.01	mg/l	U	<0.01	0.75	<0.01	<0.01	0.81	
Magnesium as Mg	ICPWATVAR (Dissolved)	1	mg/l	U	132	37	129	14	16	
Total Sulphur as SO4	ICPWATVAR (Dissolved)	3	mg/l	U	1230	641	<30 _D	326	82	

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005
					Customer ID	ATK_BH05-1-EW-4.10	ATK_BH17-1-EW-5.00	ATK_BH10-1-EW-6.00	ATK_BH14-1-EW-1.50	ATK_BH09-1-EW-6.00
					Sample Type	WATER	WATER	WATER	WATER	WATER
					Sampling Date	16/02/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023
Benzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	<5	<5
Ethylbenzene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	<5	<5
m/p-Xylene HS_1D_AR	BTEXHSA	10	µg/l	U	<10	<10	<10	<10	<10	<10
o-Xylene HS_1D_AR	BTEXHSA	5	µg/l	U	<5	<5	<5	<5	<5	<5
Toluene HS_1D_AR	BTEXHSA	5	µg/l	U	<5* _B	<5* _B	<5* _B	<5* _B	<5* _B	<5* _B
Acenaphthene	PAHMSW	0.01	µg/l	U	0.13	<0.01	<0.01	<0.01	<0.01	0.07
Acenaphthylene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	PAHMSW	0.01	µg/l	U	0.12	<0.01	<0.01	<0.01	<0.01	0.02
Benzo[a]anthracene	PAHMSW	0.01	µg/l	U	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]pyrene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[b]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[g,h,i]perylene	PAHMSW	0.01	µg/l	U	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[k]fluoranthene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chrysene	PAHMSW	0.01	µg/l	U	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
Coronene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibenzo[a,h]anthracene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoranthene	PAHMSW	0.01	µg/l	U	0.27	<0.01	<0.01	<0.01	<0.01	0.03
Fluorene	PAHMSW	0.01	µg/l	U	0.11	<0.01	<0.01	<0.01	<0.01	0.04
Indeno[1,2,3-cd]pyrene	PAHMSW	0.01	µg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005
					Customer ID	ATK_BH05-1-EW-4.10	ATK_BH17-1-EW-5.00	ATK_BH10-1-EW-6.00	ATK_BH14-1-EW-1.50	ATK_BH09-1-EW-6.00
					Sample Type	WATER	WATER	WATER	WATER	WATER
					Sampling Date	16/02/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023
Naphthalene	PAHMSW	0.01	µg/l	U	0.07	0.09	0.02	0.01	0.28	
Phenanthrene	PAHMSW	0.01	µg/l	U	0.33	0.01	<0.01	<0.01	0.04	
Pyrene	PAHMSW	0.01	µg/l	U	0.24	0.01	<0.01	<0.01	0.02	
Total PAH 16	PAHMSW	0.16	µg/l	U	1.40	0.25	0.17	0.17	0.58	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.01	<0.01	<0.01	<0.01	<0.01	
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.03	<0.01	<0.01	<0.01	<0.01	
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	N	<0.01	<0.01	<0.01	<0.01	<0.01	
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFID (Aliphatic)	0.01	mg/l	U	0.06	<0.01	0.02	<0.01	<0.01	
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	<0.01	<0.01	<0.01	<0.01	<0.01	
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	N	<0.01	<0.01	<0.01	<0.01	<0.01	
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFID (Aromatic)	0.01	mg/l	U	0.01	<0.01	<0.01	0.01	<0.01	
Benzene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	<1	
Ethylbenzene	VOCHSAW	0.5	µg/l	U	<0.5	<0.5	<0.5	<0.5	<0.5	
m and p-Xylene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	<1	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 23021706
 Date Issued: 03/03/2023



Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003	004	005
					Customer ID	ATK_BH05-1-EW-4. 10	ATK_BH17-1-EW-5. 00	ATK_BH10-1-EW-6. 00	ATK_BH14-1-EW-1. 50	ATK_BH09-1-EW-6. 00
					Sample Type	WATER	WATER	WATER	WATER	WATER
					Sampling Date	16/02/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023
MTBE	VOCHSAW	1	µg/l	N	<1	<1	<1	<1	<1	
o-Xylene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	<1	
Toluene	VOCHSAW	1	µg/l	U	<1	<1	<1	<1	2	
Dimethylphenols	PHEGCMS	0.0005	mg/l	N	0.0005	0.0005	0.0005	<0.0005	<0.0005	
Methylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
Phenol	PHEGCMS	0.0005	mg/l	N	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	
Total Phenols	PHEGCMS	0.002	mg/l	N	0.0020	0.0020	0.0020	<0.0020	0.0028	
Trimethylphenols	PHEGCMS	0.0005	mg/l	N	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	



Client: SOCOTEC Geotechnical
 Project Name: H2060-22-Lyneham Banks
 Project No: 23021706
 Date Issued: 03/03/2023

Deviating Sample Report

All samples received in an appropriate condition with no deviancies noted with the samples.

Analysis Method

<u>Method Code</u>	<u>Method Description</u>	<u>Analysis Method</u>
BTEXHSA	BTEX by GCFID	Unfiltered
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	Unfiltered
ICPMSW (Dissolved)	Arsenic (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Cadmium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Chromium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Copper (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Lead (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Manganese (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Mercury (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Nickel (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Selenium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Vanadium (Diss.) in Water by ICPMS	Filtered
ICPMSW (Dissolved)	Zinc (Diss.) in Water by ICPMS	Filtered
ICPWATVAR (Dissolved)	Barium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Boron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Calcium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Iron (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Magnesium (Diss.) in Water by ICPOES	Filtered
ICPWATVAR (Dissolved)	Total Sulphur as SO4 (Diss.) in Water	Filtered
KONENS	Ammoniacal Nitrogen as N	Filtered
KONENS	Chloride by Colorimetry	Filtered
KONENS	Chromium VI (Hexavalent) by Colorimetry	Filtered
KONENS	Nitrate as N by Colorimetry	Filtered
KONENS	Nitrite as N by Colorimetry	Filtered
PAHMSW	17 PAHs (inc. Coronene) by GCMS	Unfiltered
PHCONDW	Electrical Conductivity @ 25°C	Unfiltered
PHCONDW	pH	Unfiltered
PHEGCMS	Low Level Phenols by GCMS	Unfiltered
SFAPI	Cyanide (Complex) by SFA	Unfiltered
SFAPI	Cyanide (Free) by SFA	Unfiltered
SFAPI	Cyanide (Total) by SFA	Unfiltered
SFAPI	Sulphide by SFA	Unfiltered
TNW	Nitrogen (Total)	Unfiltered
TPHFID (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	Unfiltered
TPHFID (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	Unfiltered
VOCHSAW	BTEX & MTBE by GCMS	Unfiltered
WSLM11	COD: Chemical Oxygen Demand (Settled)	Unfiltered
WSLM20	BOD: Biological Oxygen Demand (Total)	Unfiltered



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 23021706
Date Issued: 03/03/2023

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total



Client: SOCOTEC Geotechnical
Project Name: H2060-22-Lyneham Banks
Project No: 23021706
Date Issued: 03/03/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 105 ° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis



SOCOTEC

**APPENDIX G
PHOTOGRAPHS**

Core Photographs
Trial Pit Photographs

Sheet 1 to 97
Sheets 98 to 154

Core Photographs



ATK_BH02 - 0.00m to 2.00m



ATK_BH02 - 2.00m to 4.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 24px;">1</p>
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Core Photographs



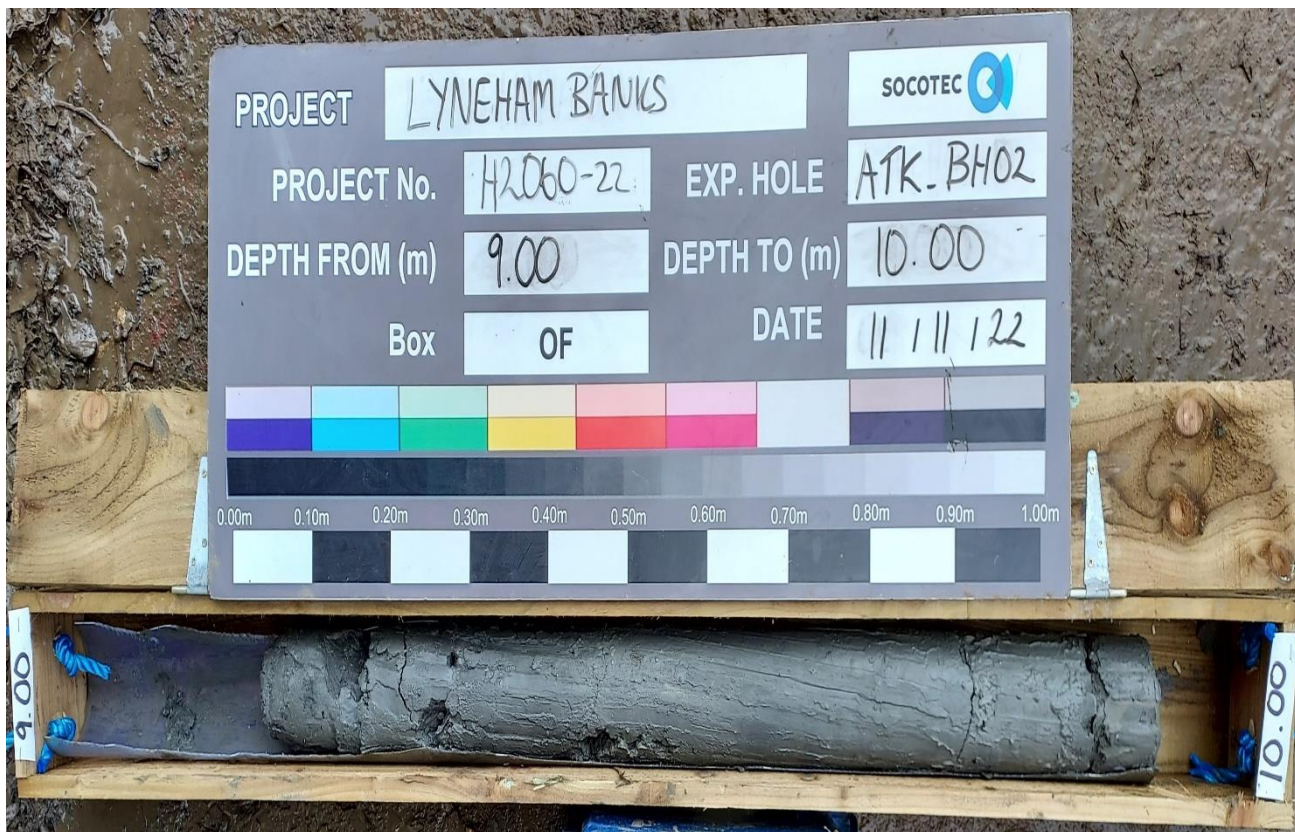
ATK_BH02 - 5.00m to 7.00m



ATK_BH02 - 7.00m to 9.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">2</p>
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Core Photographs



ATK_BH02 - 9.00m to 10.00m



ATK_BH02 - 10.00m to 13.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">3</p>
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Core Photographs



ATK_BH02 - 13.00m to 16.00m



ATK_BH02 - 16.00m to 19.00m

Notes:

Project Lyneham Banks
 Project No. H2060-22
 Carried out for Wiltshire Council

Sheet

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Core Photographs



ATK_BH02 - 19.00m to 20.00m

Notes:

Project Lyneham Banks
Project No. H2060-22
Carried out for Wiltshire Council

Sheet

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Core Photographs



ATK_BH02B 3.00m to 6.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet 6
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Core Photographs



ATK_BH03 0.00-2.00m



ATK_BH03 2.00-4.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24pt;">7</p>
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Core Photographs



ATK_BH03 4.00-6.50m



ATK_BH03 6.50-9.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">8</p>
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Core Photographs



ATK_BH03 9.00-11.50m



ATK_BH03 11.50-14.50m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet 9</p>
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Core Photographs



ATK_BH03 14.50-17.50m



ATK_BH03 17.50-20.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24pt;">10</p>
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Core Photographs



ATK_BH04 0.00m to 2.00m



ATK_BH04 2.00m to 4.00m

Core Photographs



ATK_BH04 4.00m to 5.00m



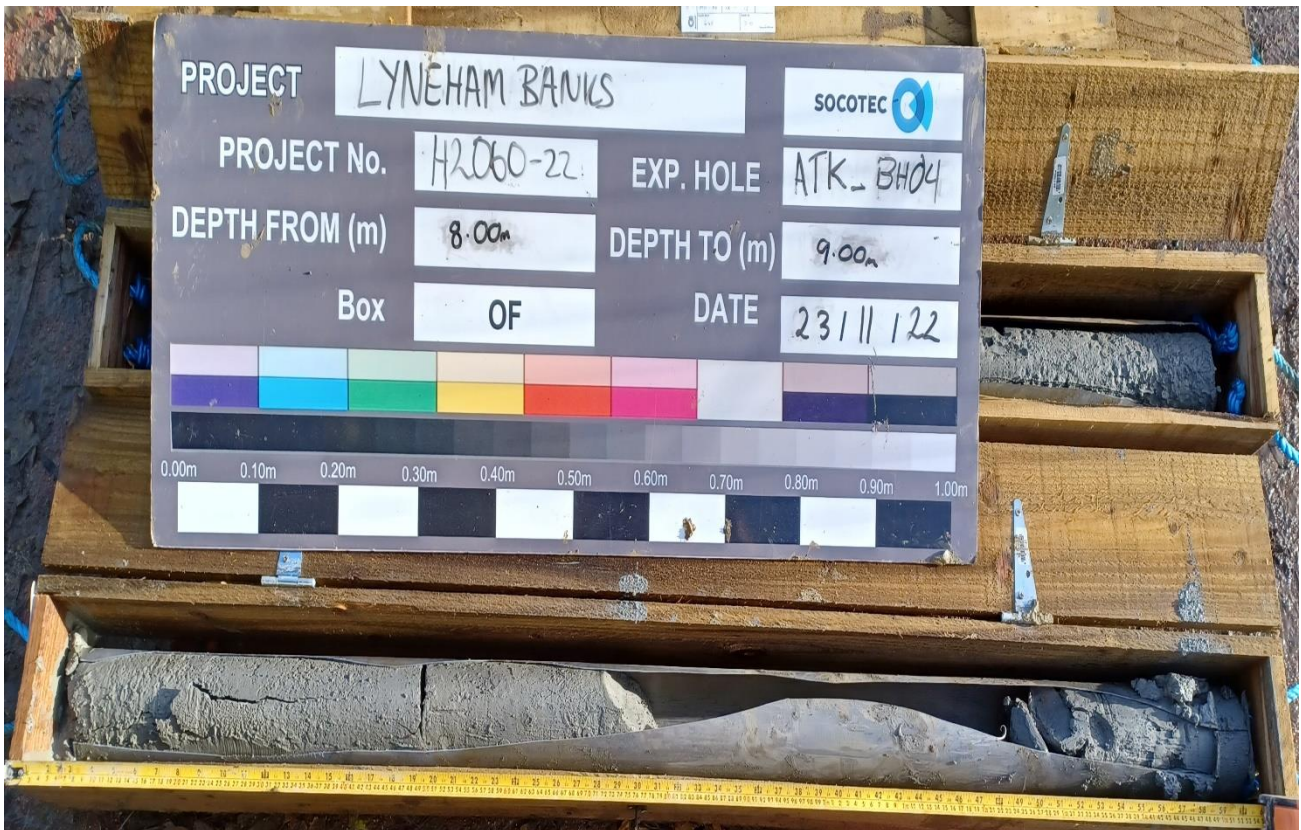
ATK_BH04 5.00m to 5.70m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet 12
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Core Photographs



ATK_BH04 7.00m to 8.00m



ATK_BH04 8.00m to 9.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">13</p>
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Core Photographs



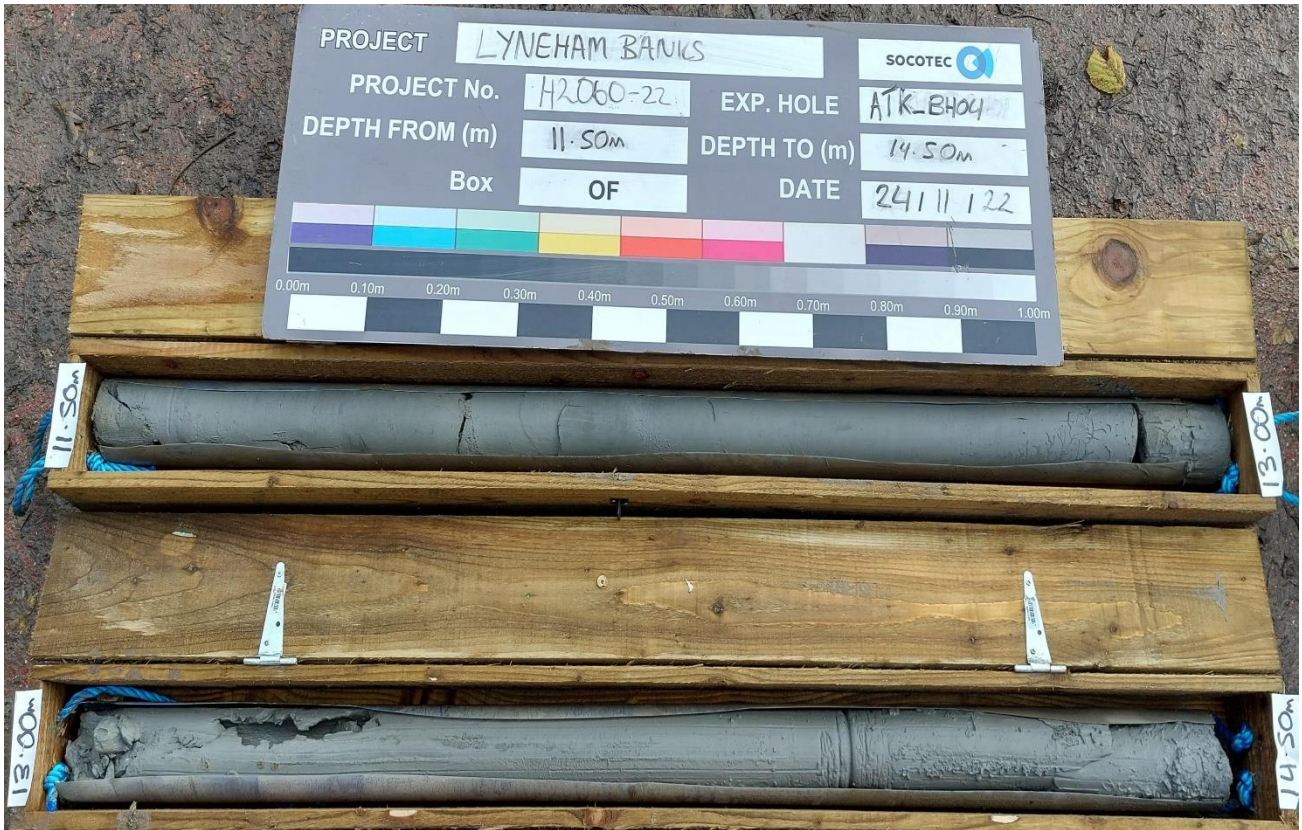
ATK_BH04 9.00m to 10.00m



ATK_BH04 10.00m to 11.50m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet 14
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Core Photographs



ATK_BH04 11.50m to 14.50m



ATK_BH04 14.50m to 17.50m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">15</p>
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Core Photographs



ATK_BH04 17.50m to 20.00m

Core Photographs



ATK_BH05 0.00-2.00m



ATK_BH05 2.00-5.60m

Notes:

Project Lyneham Banks
 Project No. H2060-22
 Carried out for Wiltshire Council

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Core Photographs



ATK_BH05 5.60-8.30m



ATK_BH05 8.30-11.30m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">18</p>
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Core Photographs



ATK_BH05 11.30-14.20m



ATK_BH05 14.20-17.20m

Notes:	<table> <tr> <td>Project</td> <td>Lynham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lynham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	<table> <tr> <td>Sheet</td> <td>19</td> </tr> </table>	Sheet	19
Project	Lynham Banks									
Project No.	H2060-22									
Carried out for	Wiltshire Council									
Sheet	19									

Core Photographs



ATK_BH05 17.20-20.20m

Notes:

Project Lyneham Banks
Project No. H2060-22
Carried out for Wiltshire Council

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Core Photographs



ATK_BH06 0.00-1.50m



ATK_BH06 1.50-3.00m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lyneham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lyneham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	Sheet <p style="text-align: center;">21</p>
Project	Lyneham Banks							
Project No.	H2060-22							
Carried out for	Wiltshire Council							

Core Photographs



ATK_BH06 3.00-4.50m



ATK_BH06 4.50-6.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center;">22</p>
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Core Photographs



ATK_BH06 6.00-7.50m



ATK_BH06 7.50-9.00m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lyneham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lyneham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	<table border="0"> <tr> <td>Sheet</td> <td style="text-align: center;">23</td> </tr> </table>	Sheet	23
Project	Lyneham Banks									
Project No.	H2060-22									
Carried out for	Wiltshire Council									
Sheet	23									

Core Photographs



ATK_BH06 9.00-10.50m



ATK_BH06 10.50-12.00m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lyneham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lyneham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	Sheet 24
Project	Lyneham Banks							
Project No.	H2060-22							
Carried out for	Wiltshire Council							

Core Photographs



ATK_BH06 12.00-13.50m



ATK_BH06 13.50-15.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">25</p>
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Core Photographs



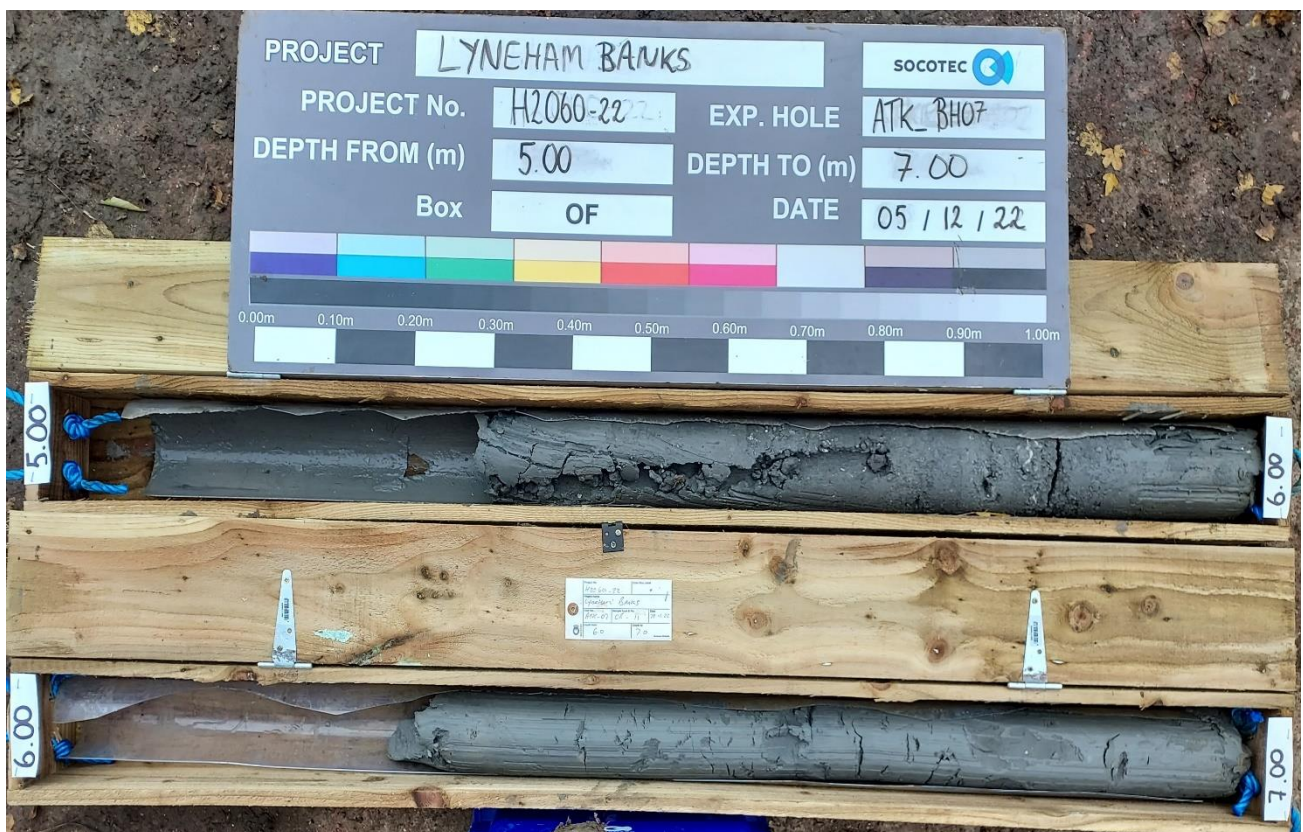
ATK_BH07 1.00-3.00m



ATK_BH07 3.00-5.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">26</p>
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Core Photographs



ATK_BH07 5.00-7.00m



ATK_BH07 7.00-9.00m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lyneham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lyneham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	Sheet <p style="text-align: center; font-size: 24pt;">27</p>
Project	Lyneham Banks							
Project No.	H2060-22							
Carried out for	Wiltshire Council							

Core Photographs



ATK_BH07 9.00-11.50m



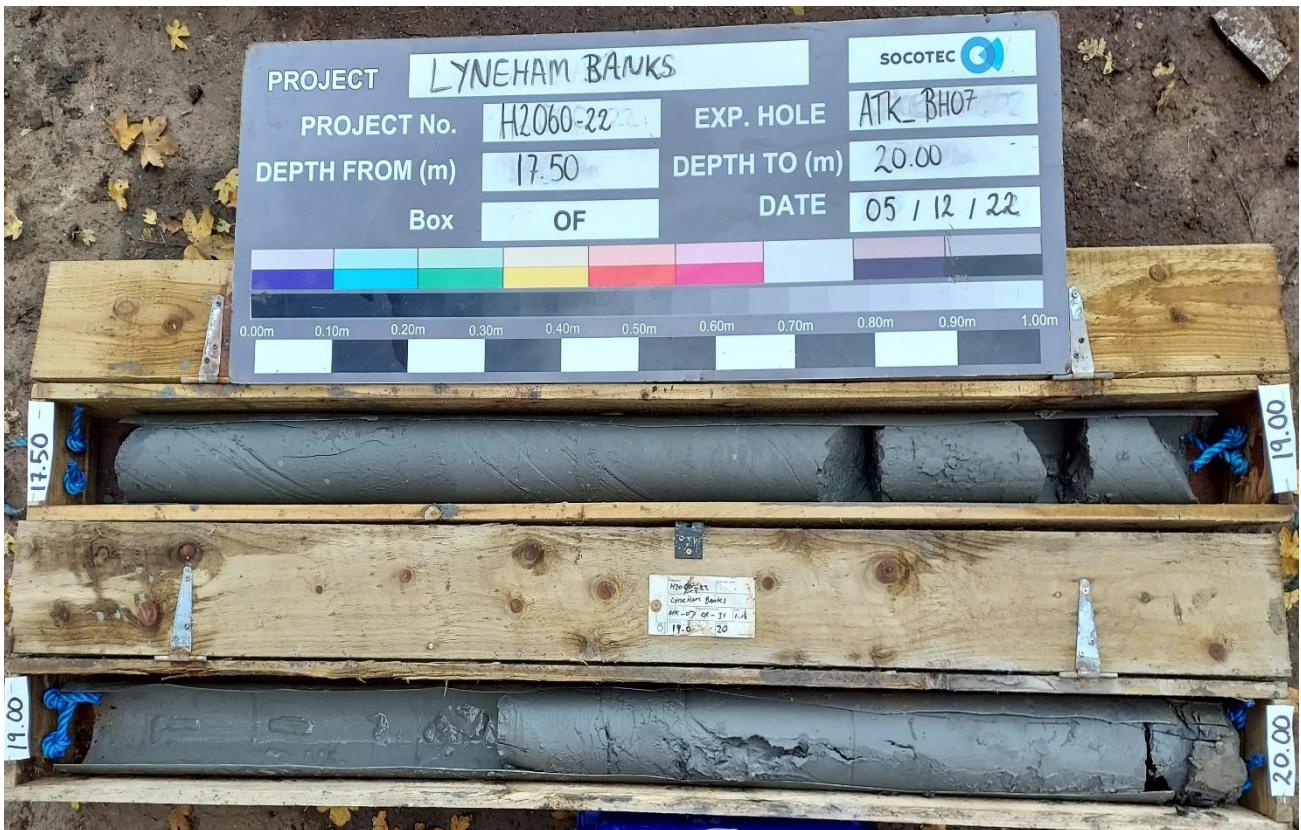
ATK_BH07 11.50-14.50m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">28</p>
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Core Photographs



ATK_BH07 14.50-17.50m



ATK_BH07 17.50-20.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">29</p>
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Core Photographs



ATK_BH08 0.40-4.20m



ATK_BH08 4.70-7.60m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">30</p>
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Core Photographs



ATK_BH08 7.60-10.60m



ATK_BH08 10.60-13.60m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet 31
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Core Photographs



ATK_BH08 13.60-15.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 32
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Core Photographs



ATK_BH09 1.20-2.20m



ATK_BH09 3.20-4.20m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet 33
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Core Photographs



ATK_BH09 5.20-6.20m



ATK_BH09 6.70-7.20m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 1.2em;">34</p>
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Core Photographs



ATK_BH09 6.90-7.20m



ATK_BH09 7.20-9.90m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p>35</p>
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Core Photographs



ATK_BH09 9.90-12.90m



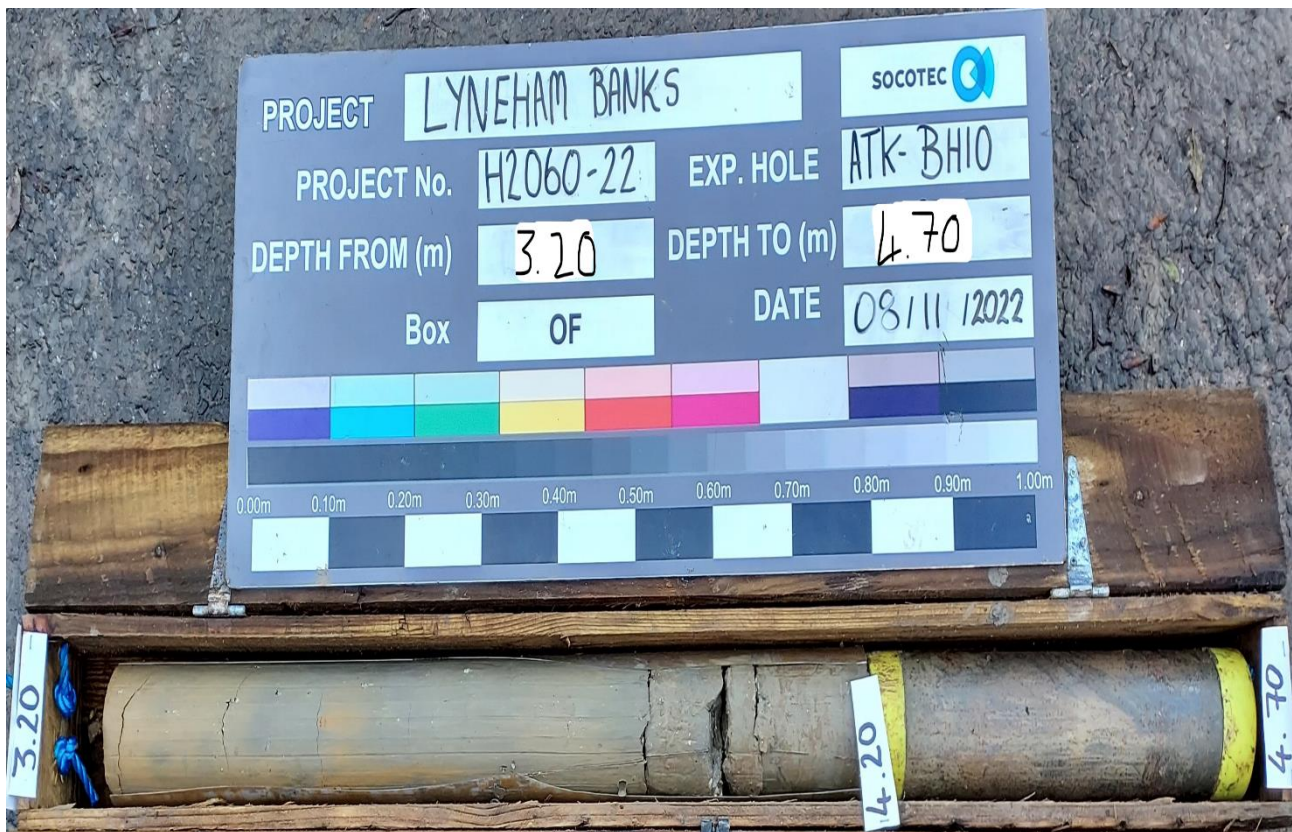
ATK_BH09 12.90-15.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 1.2em;">36</p>
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Core Photographs



ATK_BH10 1.20-3.20m



ATK_BH10 3.20-4.70m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-weight: bold;">37</p>
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Core Photographs



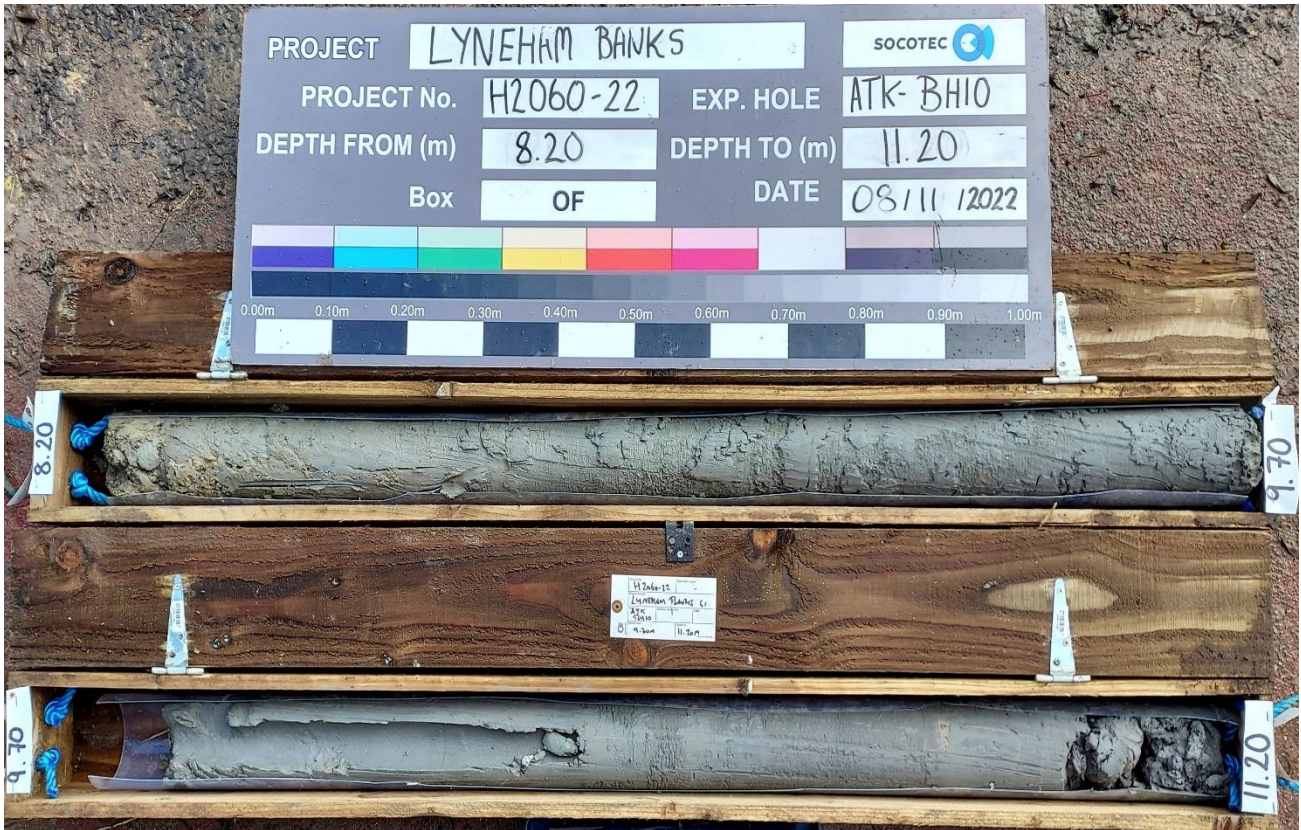
ATK_BH10 4.70-5.20m



ATK_BH10 5.20-8.20m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">38</p>
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Core Photographs



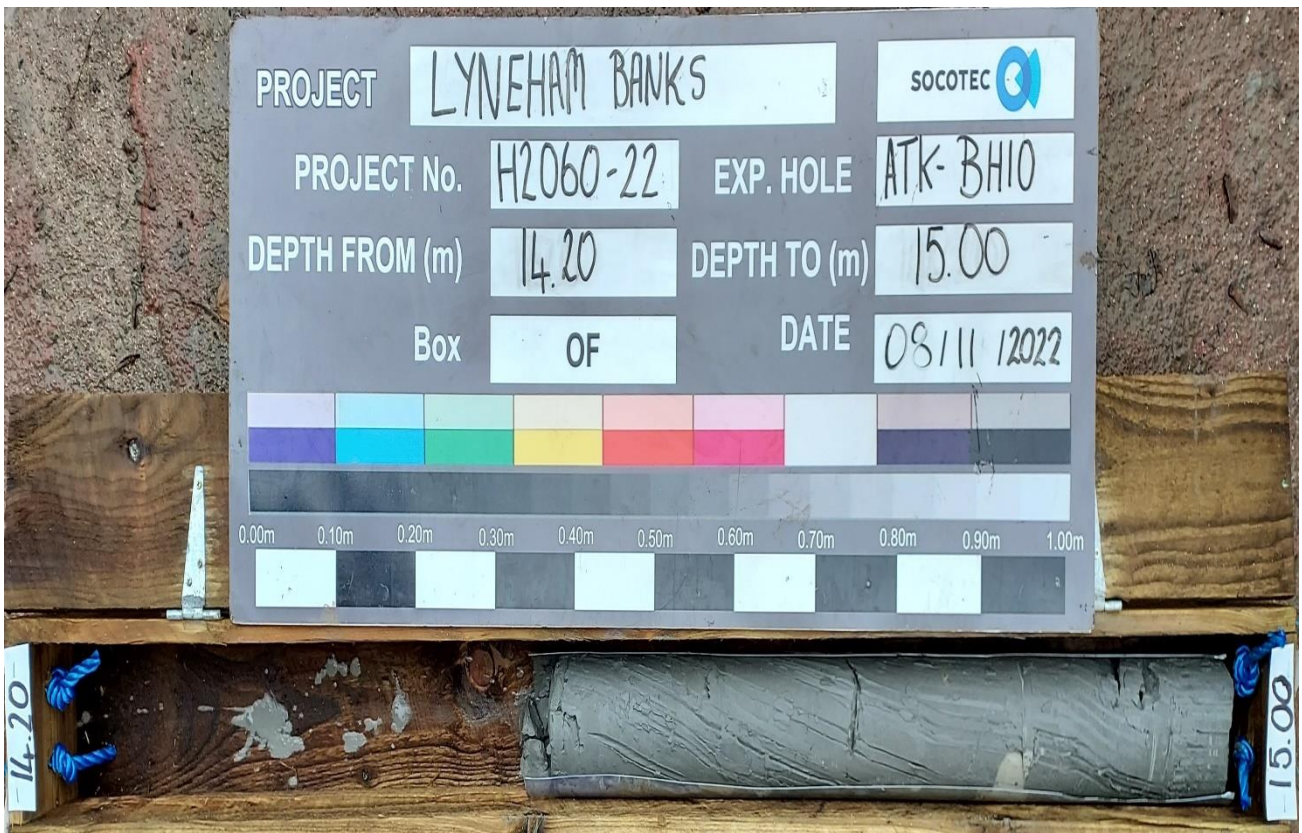
ATK_BH10 8.20-11.20m



ATK_BH10 11.20-14.20m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">39</p>
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Core Photographs



ATK_BH10 14.20-15.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 40
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Core Photographs



ATK_BH11 1.20-3.20m



ATK_BH11 3.20-5.20m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 24px;">41</p>
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Core Photographs



ATK_BH11 5.20-7.50m



ATK_BH11 7.50-10.50m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">42</p>
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Core Photographs



ATK_BH11 10.50-13.50m



ATK_BH11 13.50-15.00m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lynham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lynham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">43</p>
Project	Lynham Banks							
Project No.	H2060-22							
Carried out for	Wiltshire Council							

Core Photographs



ATK_BH12 0.00-2.00m



ATK_BH12 2.00-4.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">44</p>
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Core Photographs



ATK_BH12 4.00-6.00m



ATK_BH12 6.00-8.00m

Core Photographs



ATK_BH12 8.00-9.60m



ATK_BH12 9.60-11.80m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">46</p>
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Core Photographs



ATK_BH12 11.80-14.60m



ATK_BH12 14.60-15.20m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: right;">47</p>
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Core Photographs



ATK_BH13 0.00-3.50m



ATK_BH13 4.00-5.50m

Core Photographs



ATK_BH13 5.50-9.30m



ATK_BH13 9.30-10.80m

Notes:	<p>Project Lynham Banks</p> <p>Project No. H2060-22 Carried out for Wiltshire Council</p>	<p>Sheet 49</p>
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Core Photographs



ATK_BH13 10.80-12.30m



ATK_BH13 12.30-15.30m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">50</p>
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Core Photographs



ATK_BH14 0.00-2.00m



ATK_BH14 2.00-4.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">51</p>
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Core Photographs



ATK_BH14 4.50-6.50m



ATK_BH14 7.50-9.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">52</p>
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Core Photographs



ATK_BH14 9.00-11.70m



ATK_BH14 11.70-14.70m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-weight: bold;">53</p>
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Core Photographs



ATK_BH15 0.00-2.00m



ATK_BH15 2.00-4.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: right;">54</p>
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Core Photographs



ATK_BH15 4.00-6.00m



ATK_BH15 8.00-10.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 1.2em;">55</p>
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Core Photographs



ATK_BH15 10.00-12.00m



ATK_BH15 12.00-15.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">56</p>
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Core Photographs



ATK_BH16 0.00-2.00m



ATK_BH16 2.00-4.00m

Notes:

Project Lyneham Banks
 Project No. H2060-22
 Carried out for Wiltshire Council

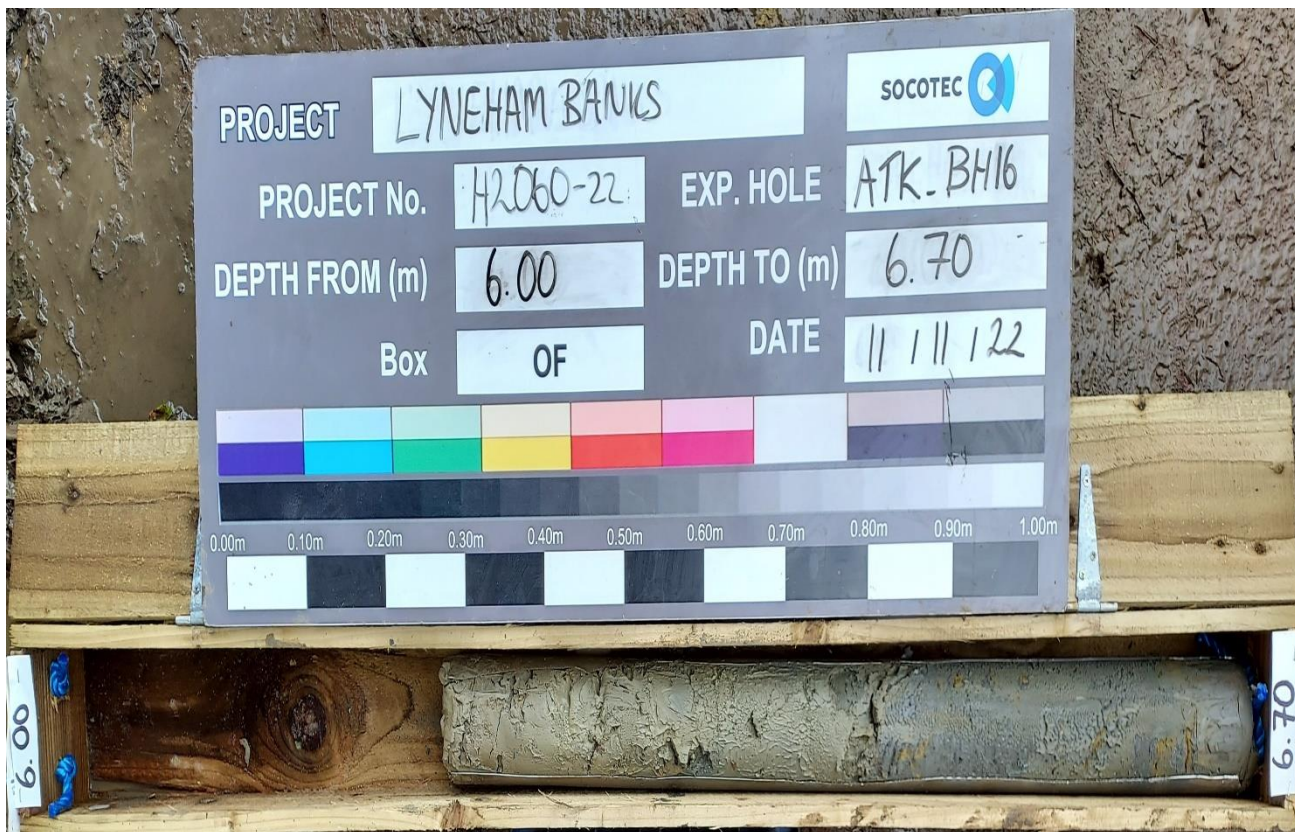
Sheet

57

Core Photographs



ATK_BH16 4.00-6.00m



ATK_BH16 6.00-6.70m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet 58
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Core Photographs



ATK_BH16 6.70-9.00m



ATK_BH16 9.00-11.50m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: right;">59</p>
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Core Photographs



ATK_BH16 11.50-14.00m



ATK_BH16 14.00-15.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-weight: bold;">60</p>
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Core Photographs



ATKRD_BH01 6.40-7.80m



ATKRD_BH01 7.80-10.70m

Notes:

Project Lyneham Banks
 Project No. H2060-22
 Carried out for Wiltshire Council

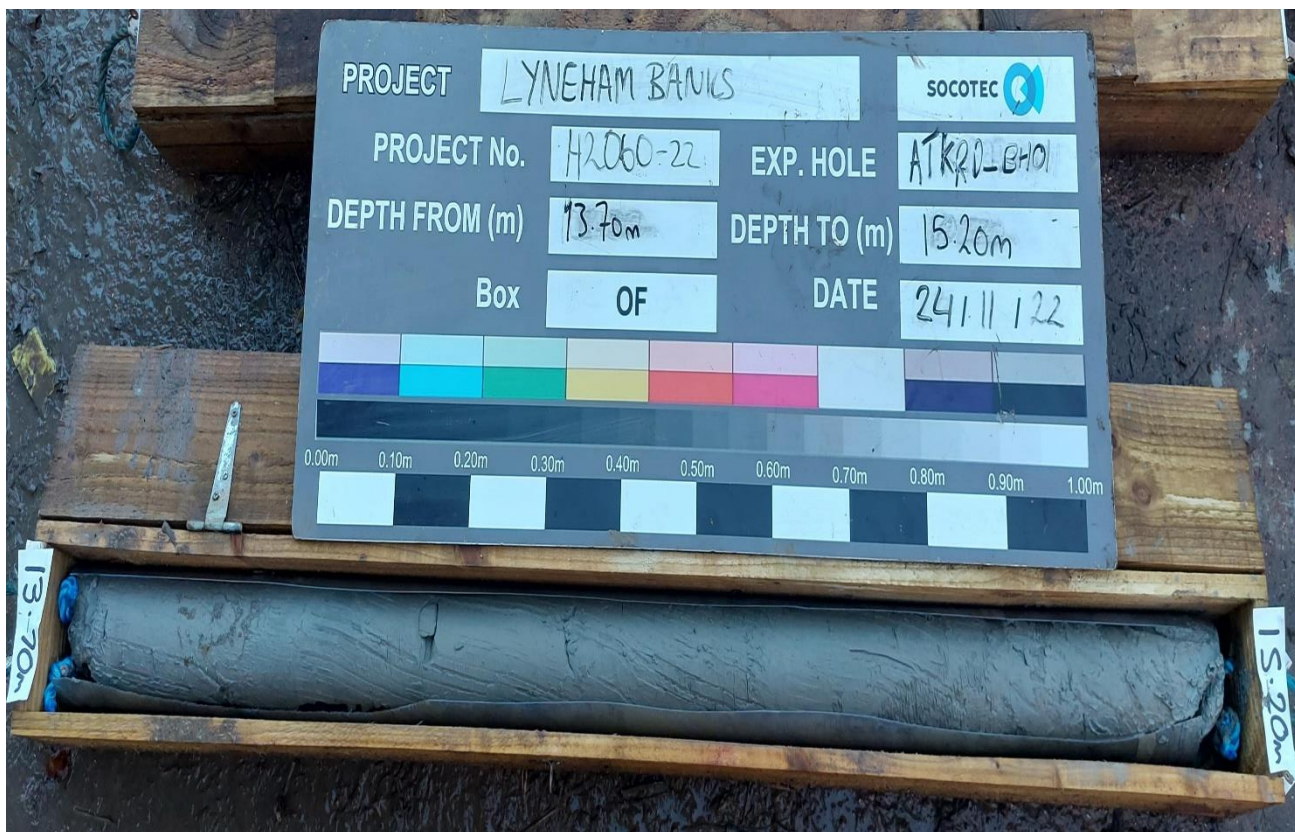
Sheet

61

Core Photographs



ATKRD_BH01 10.70-13.70m



ATKRD_BH01 13.70-15.20m

Core Photographs



ATKRD_BH02 0.80-3.20m



ATKRD_BH02 3.20-4.20m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">63</p>
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Core Photographs



ATKRD_BH02 4.20-6.60m



ATKRD_BH02 6.60-9.60m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">64</p>
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Core Photographs



ATKRD_BH02 9.60-12.60m



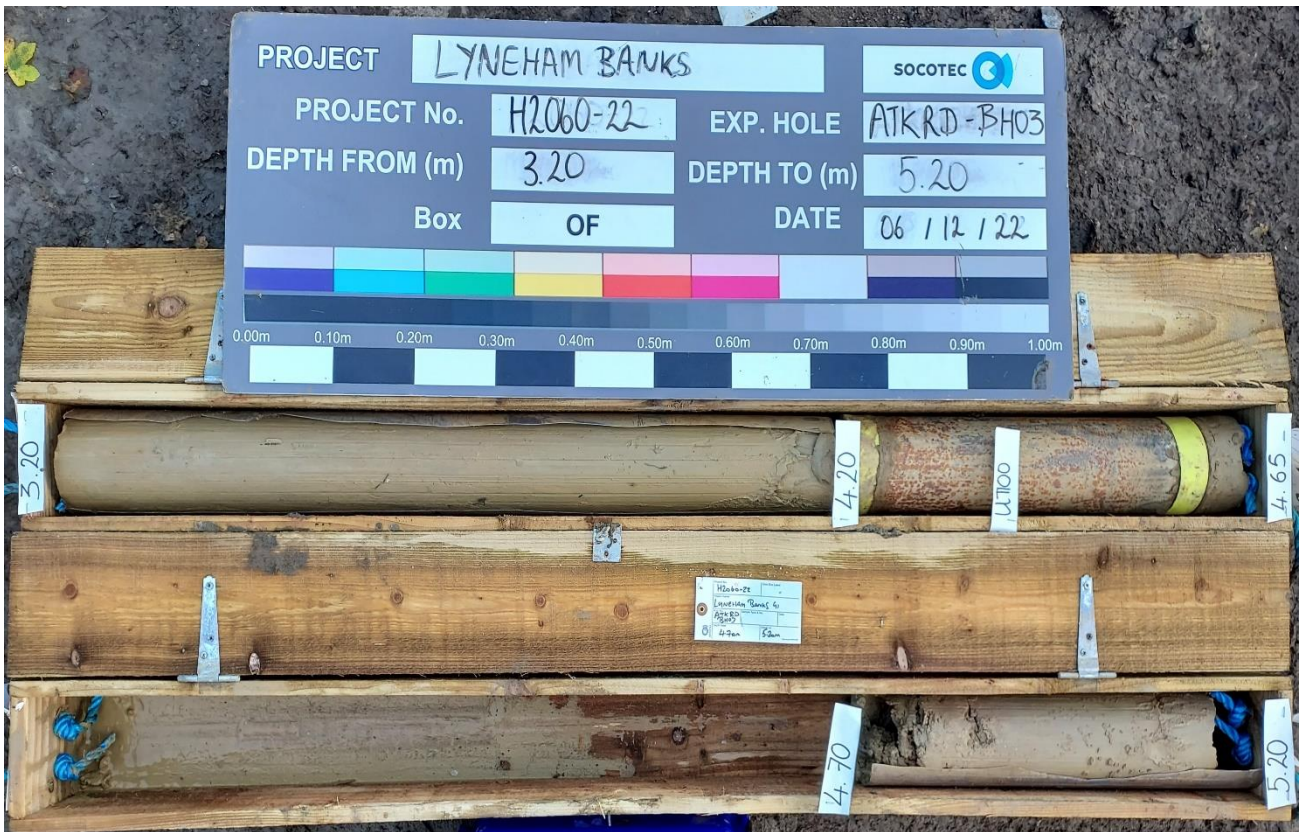
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Core Photographs



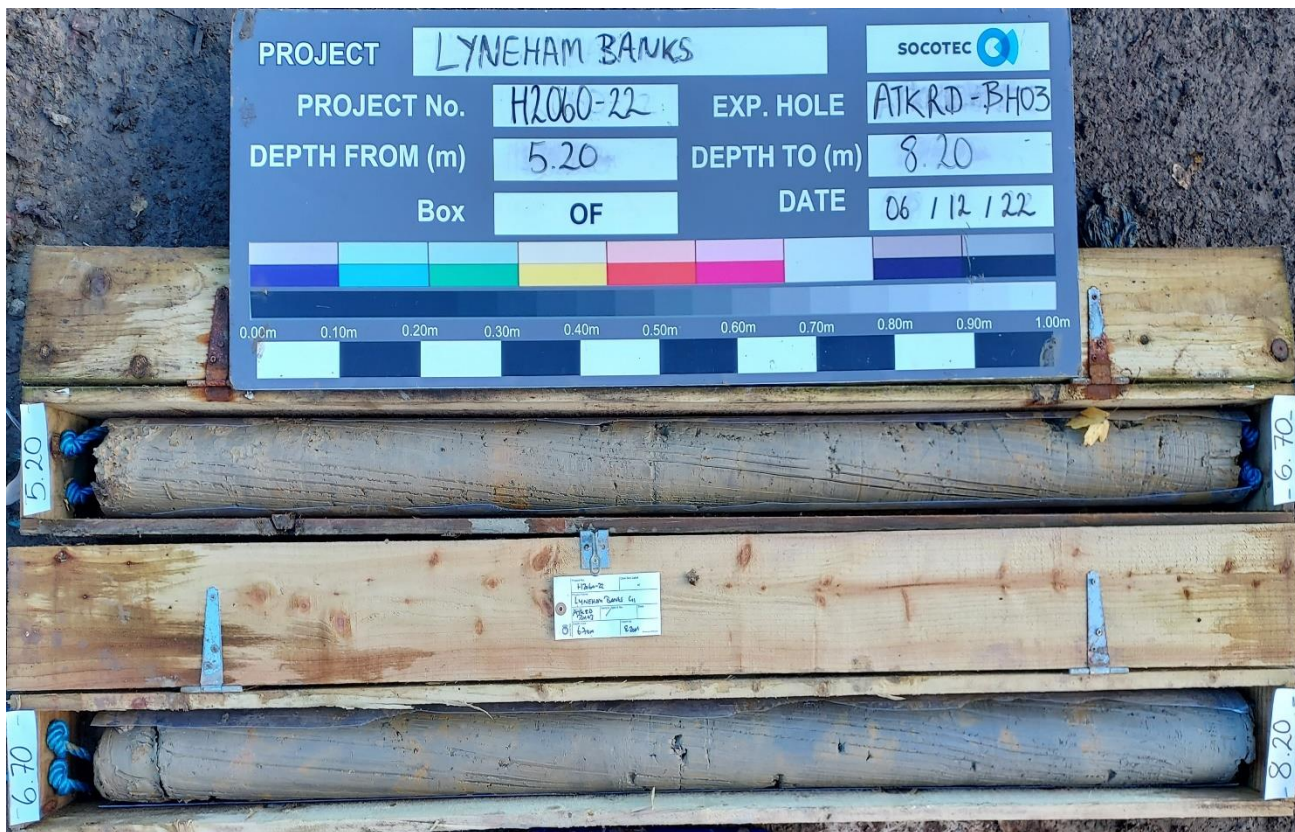
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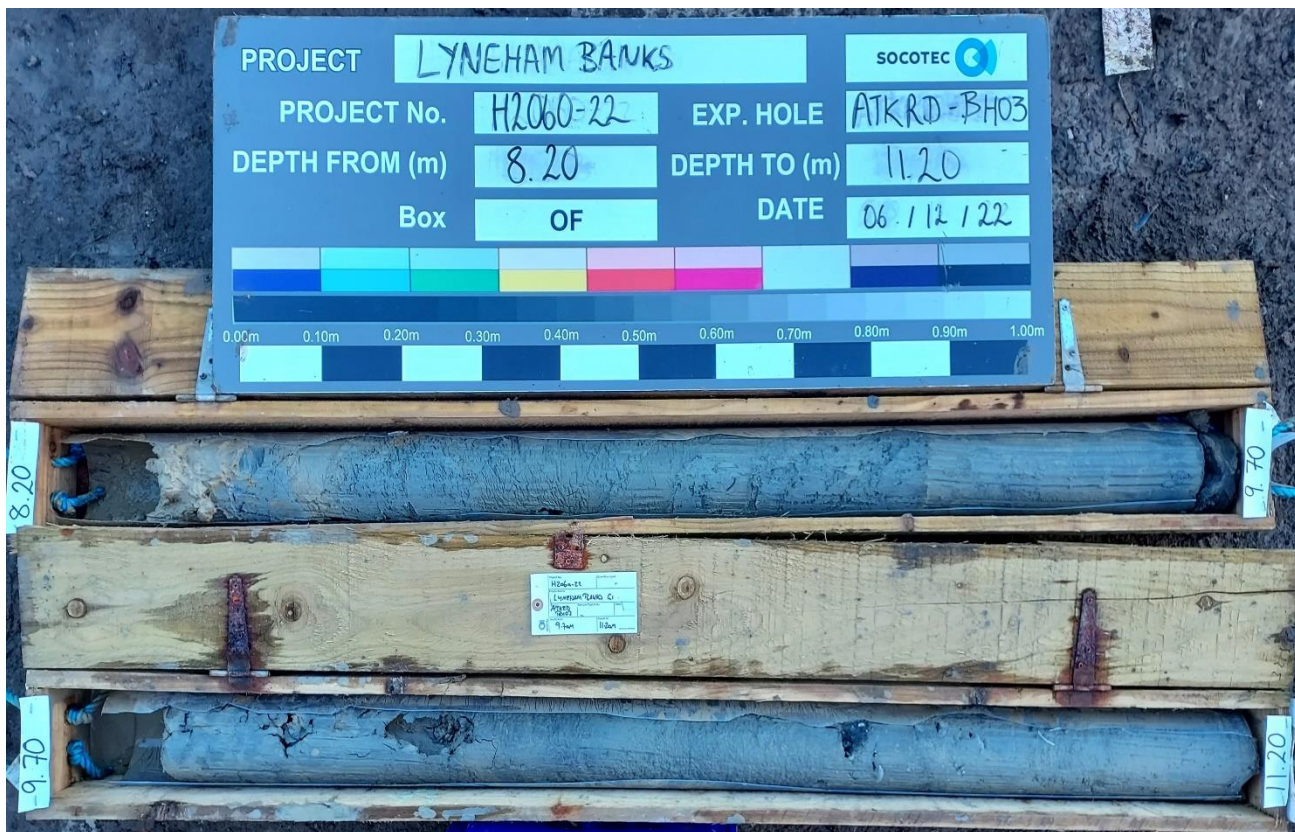
ATKRD_BH03 3.20-5.20m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">66</p>
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Core Photographs



ATKRD_BH03 5.20-8.20m



ATKRD_BH03 8.20-11.20m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">67</p>
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Core Photographs



ATKRD_BH03 11.20-14.20m



ATKRD_BH03 14.20-15.20m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-weight: bold;">68</p>
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Core Photographs



ATKRD_BH04 2.70-4.70m



ATKRD_BH04 4.70-5.70m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">69</p>
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Core Photographs



ATKRD_BH04 6.20-7.30m



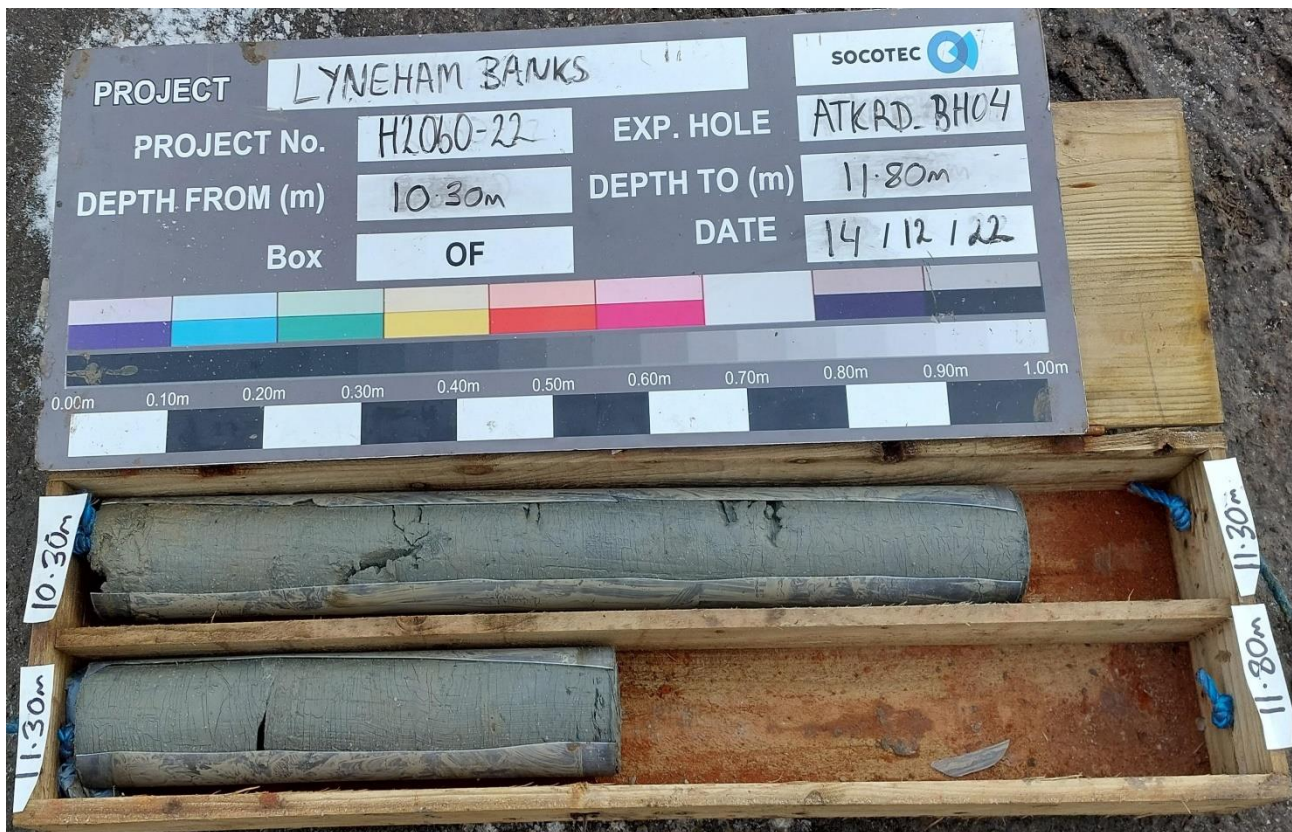
ATKRD_BH04 7.30-8.80m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lyneham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lyneham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	<table border="0"> <tr> <td>Sheet</td> <td style="text-align: center; font-size: 1.2em;">70</td> </tr> </table>	Sheet	70
Project	Lyneham Banks									
Project No.	H2060-22									
Carried out for	Wiltshire Council									
Sheet	70									

Core Photographs



ATKRD_BH04 8.80-10.30m



ATKRD_BH04 10.30-11.80m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: right;">71</p>
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Core Photographs



ATKRD_BH04 11.80-13.30m



ATKRD_BH04 13.30-14.80m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center;">72</p>
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Core Photographs



ATKRD_BH05 1.20-3.00m



ATKRD_BH05 3.00-5.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 1.2em;">73</p>
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Core Photographs



ATKRD_BH05 5.00-6.50m



ATKRD_BH05 6.50-8.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: right; font-size: 1.2em;">74</p>
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Core Photographs



ATKRD_BH05 8.00-9.50m



ATKRD_BH05 9.50-11.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 24px;">75</p>
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Core Photographs



ATKRD_BH05 12.50-14.00m



ATKRD_BH05 14.00-15.50m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center;">76</p>
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Core Photographs



ATKRD_BH06 1.20-3.00m



ATKRD_BH06 3.00-5.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">77</p>
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Core Photographs



ATKRD_BH06 5.00-7.50m



ATKRD_BH06 7.50-9.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">78</p>
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Core Photographs



ATKRD_BH06 9.00-10.50m



ATKRD_BH06 10.50-12.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: right;">79</p>
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Core Photographs



ATKRD_BH06 12.00-13.50m



ATKRD_BH06 13.50-15.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center; font-size: 1.2em;">80</p>
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Core Photographs



ATKRD_BH07 1.20-3.00m



ATKRD_BH07 3.00-5.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">81</p>
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Core Photographs



ATKRD_BH07 5.00-6.00m



ATKRD_BH07 6.00-7.50m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet 82
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Core Photographs



ATKRD_BH07 7.50-9.00m



ATKRD_BH07 9.00-10.50m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center;">83</p>
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Core Photographs



ATKRD_BH07 10.50-12.00m



ATKRD_BH07 12.00-13.50m

Notes:	Project <u>Lynham Banks</u> Project No. <u>H2060-22</u> Carried out for <u>Wiltshire Council</u>	Sheet <p style="text-align: center;">84</p>
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Core Photographs



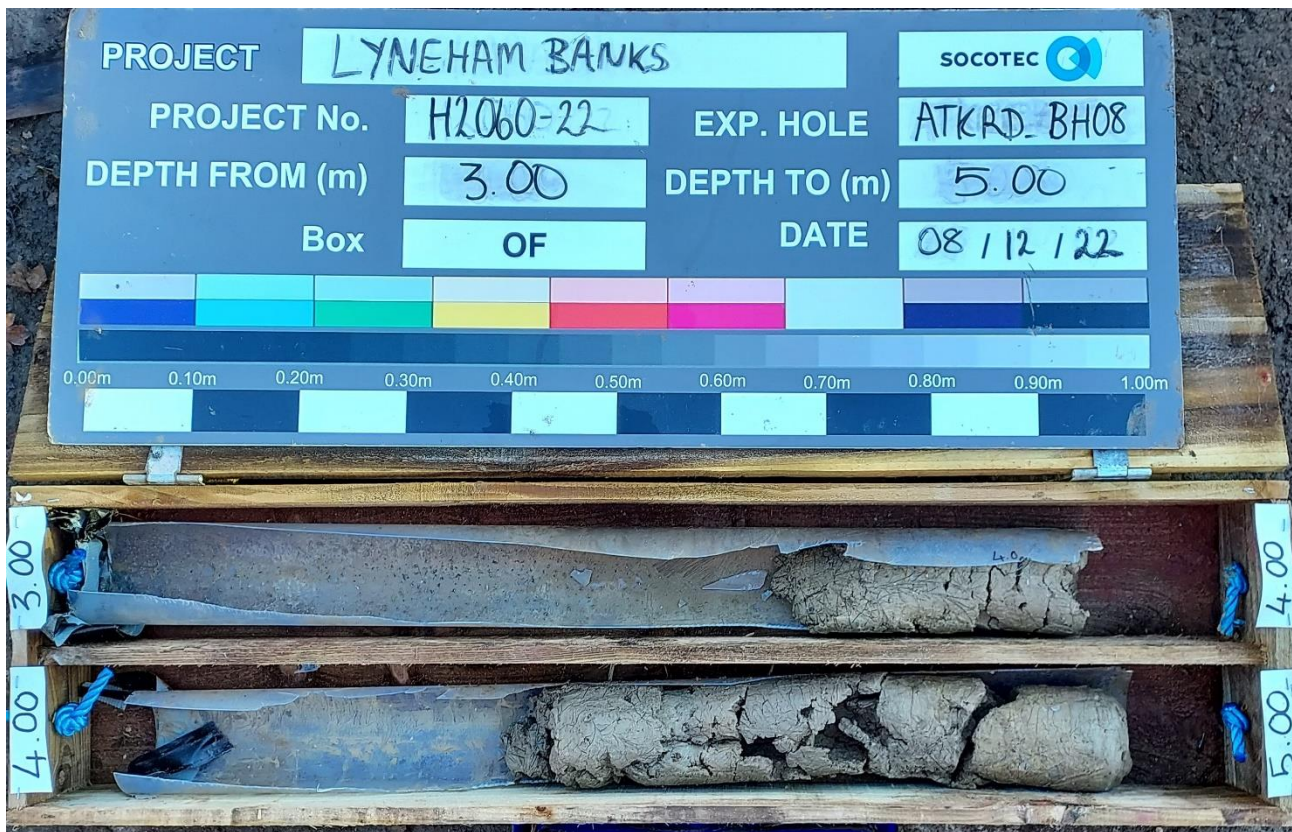
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Core Photographs



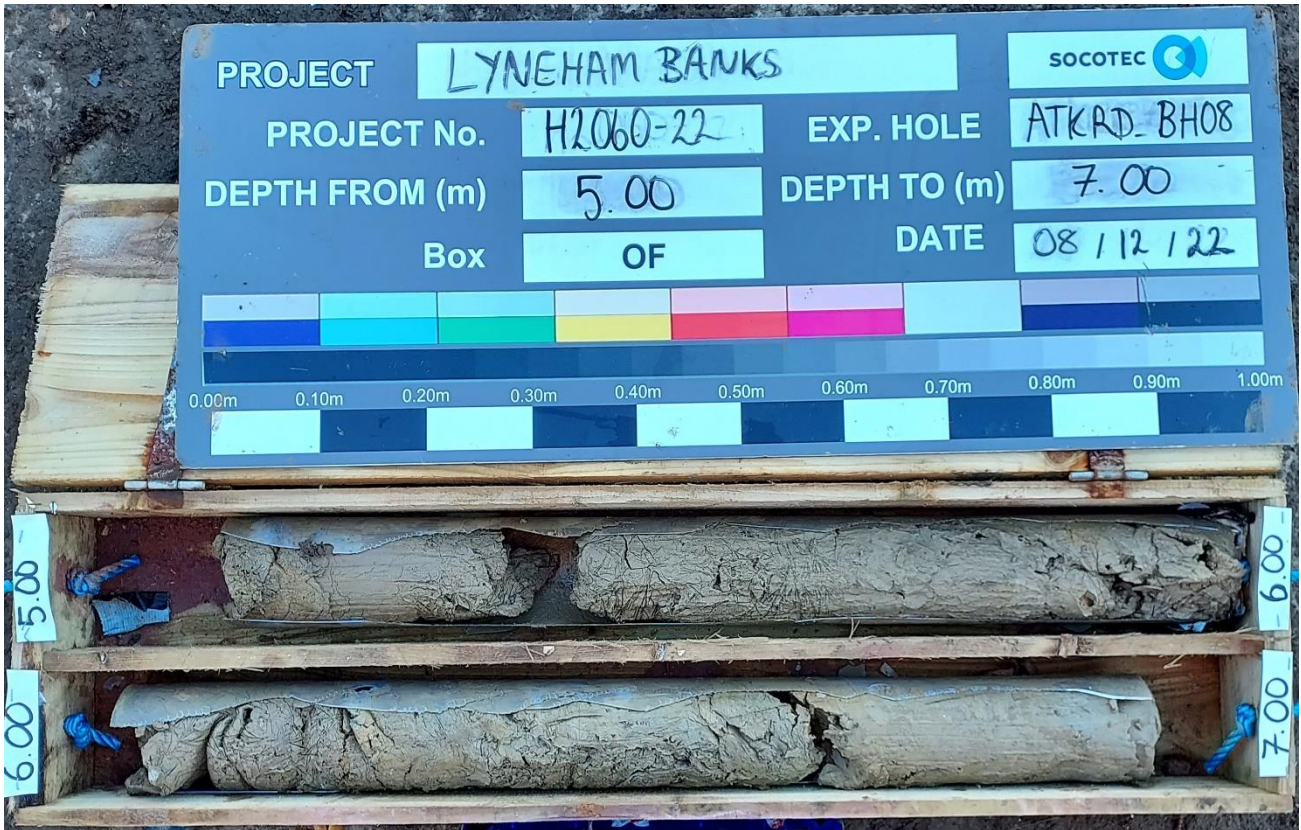
ATKRD_BH08 1.20-3.00m



ATKRD_BH08 3.00-5.00m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">86</p>
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Core Photographs

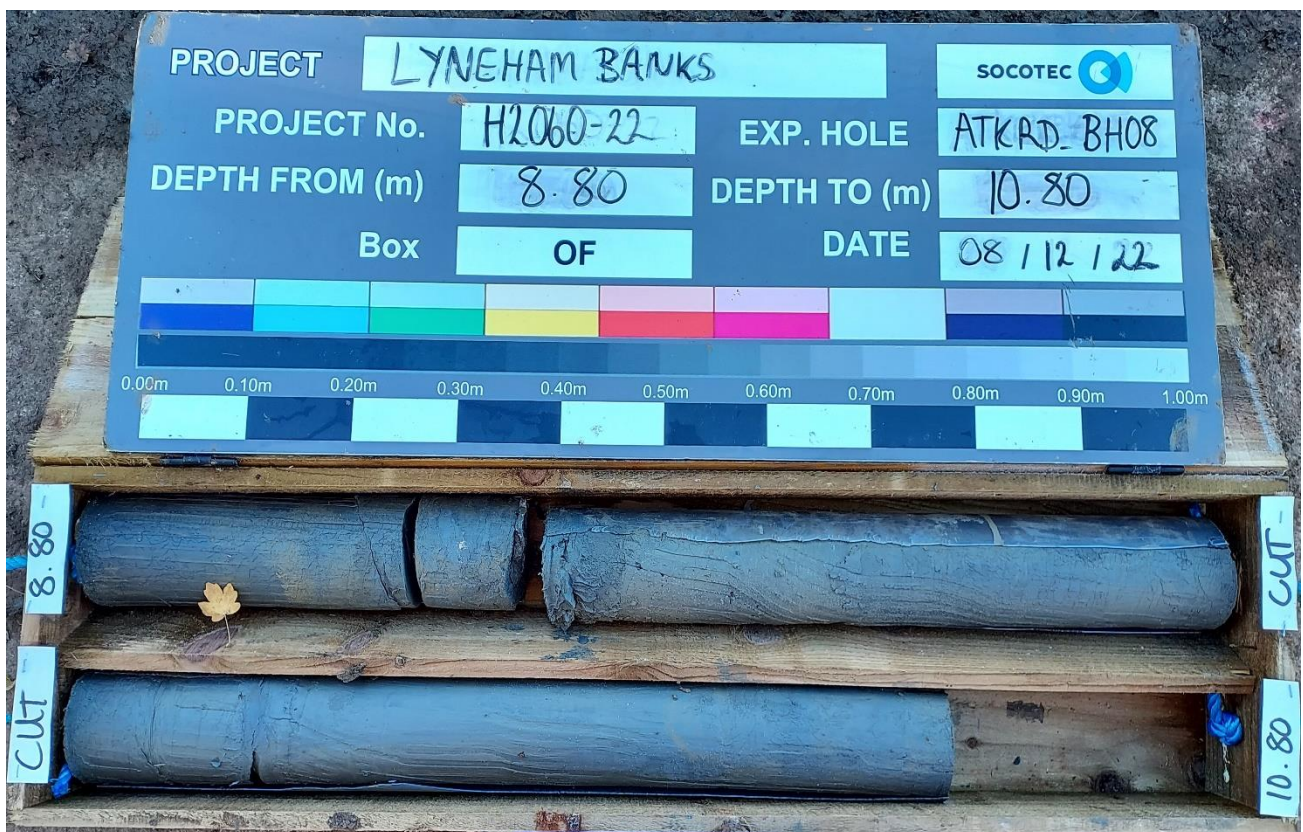


ATKRD_BH08 5.00-7.00m



ATKRD_BH08 7.00-8.80m

Core Photographs



ATKRD_BH08 8.80-10.80m



ATKRD_BH08 10.80-13.80m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 1.2em;">88</p>
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Core Photographs



ATKRD_BH08 13.80-15.30m

Core Photographs



ATKRD_BH09 0.90-3.90m



ATKRD_BH09 3.90-6.90m

Notes:	Project Lyneham Banks Project No. H2060-22 Carried out for Wiltshire Council	Sheet <p style="text-align: center; font-size: 24px;">90</p>
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Core Photographs



ATKRD_BH09 6.90-8.40m



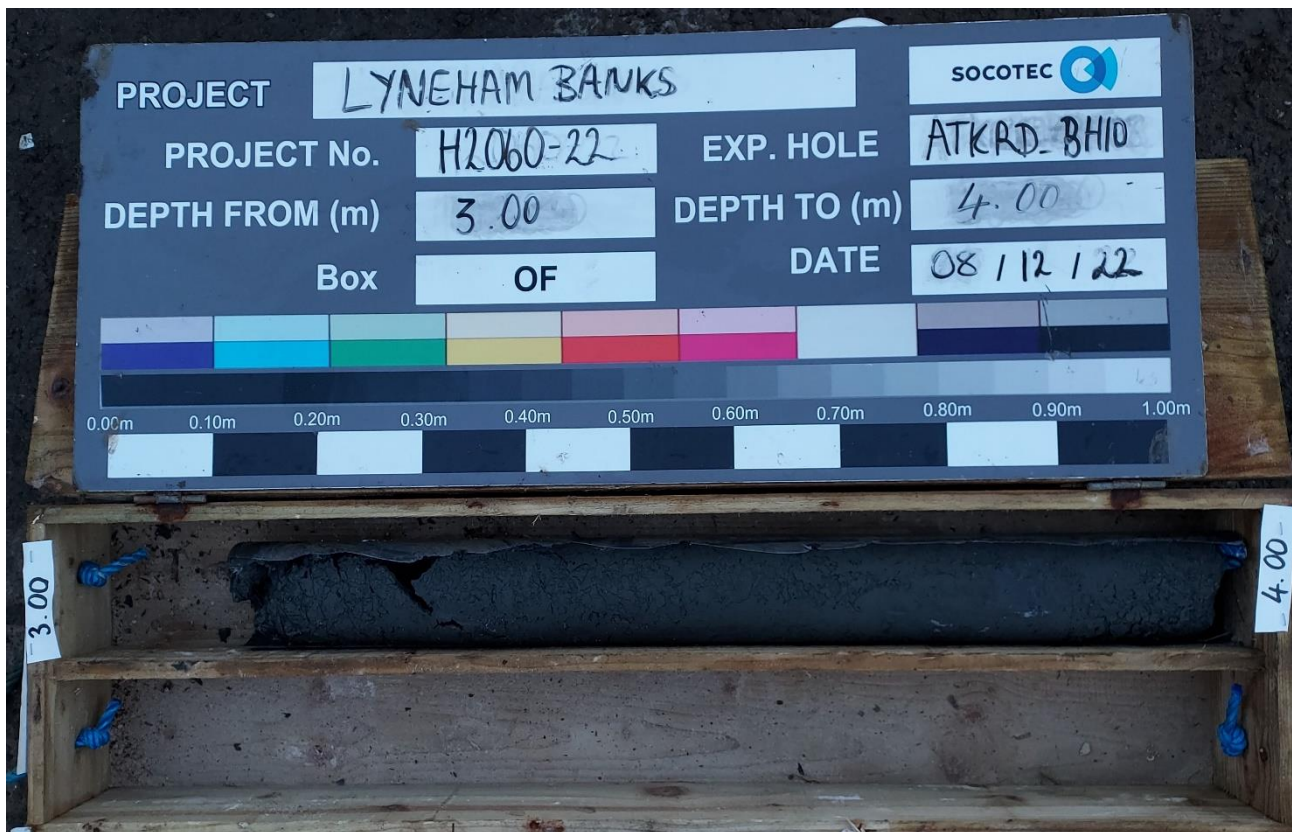
ATKRD_BH09 8.40-9.90m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lyneham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lyneham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	Sheet <p style="text-align: center; font-size: 24px;">91</p>
Project	Lyneham Banks							
Project No.	H2060-22							
Carried out for	Wiltshire Council							

Core Photographs



ATKRD_BH10 1.20-3.00m



ATKRD_BH10 3.00-4.00m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lyneham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lyneham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	<table border="0"> <tr> <td>Sheet</td> <td>92</td> </tr> </table>	Sheet	92
Project	Lyneham Banks									
Project No.	H2060-22									
Carried out for	Wiltshire Council									
Sheet	92									

Core Photographs



ATKRD_BH10 4.00-6.00m



ATKRD_BH10 6.00-8.00m

Notes:	<table border="0"> <tr> <td>Project</td> <td>Lyneham Banks</td> </tr> <tr> <td>Project No.</td> <td>H2060-22</td> </tr> <tr> <td>Carried out for</td> <td>Wiltshire Council</td> </tr> </table>	Project	Lyneham Banks	Project No.	H2060-22	Carried out for	Wiltshire Council	<table border="0"> <tr> <td>Sheet</td> <td>93</td> </tr> </table>	Sheet	93
Project	Lyneham Banks									
Project No.	H2060-22									
Carried out for	Wiltshire Council									
Sheet	93									

Core Photographs



ATKRD_BH10 8.00-10.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 94
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Core Photographs



ATKRD_BH11 2.00-4.00m



ATKRD_BH11 4.00-6.00m

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">95</p>
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Core Photographs



ATKRD_BH11 6.00-7.00m



ATKRD_BH11 7.00-8.00m

Notes:	<p>Project Lynham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet 96</p>
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Core Photographs



ATKRD_BH11 8.00-10.00m

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Trial Pit Photographs



ATK_TP01 Face A

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Trial Pit Photographs



ATK_TP01 Face B



ATK_TP01 Face D

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: center;">99</p>
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Trial Pit Photographs



ATK_TP01 Face C

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ATK_TP01 - Spoil

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Trial Pit Photographs



ATK_TP02 Face A

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Trial Pit Photographs



ATK_TP02 Face B



ATK_TP02 Face D

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p>102</p>
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Trial Pit Photographs



ATK_TP02 Face C

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Trial Pit Photographs



ATK_TP03 Face A

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Trial Pit Photographs



ATK_TP03 Face B



ATK_TP03 Face D

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 105
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Trial Pit Photographs



ATK_TP03 Face C

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Trial Pit Photographs



ATK_TP03 Spoil

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Trial Pit Photographs



ATK_TP04 Face A

Notes:

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Trial Pit Photographs



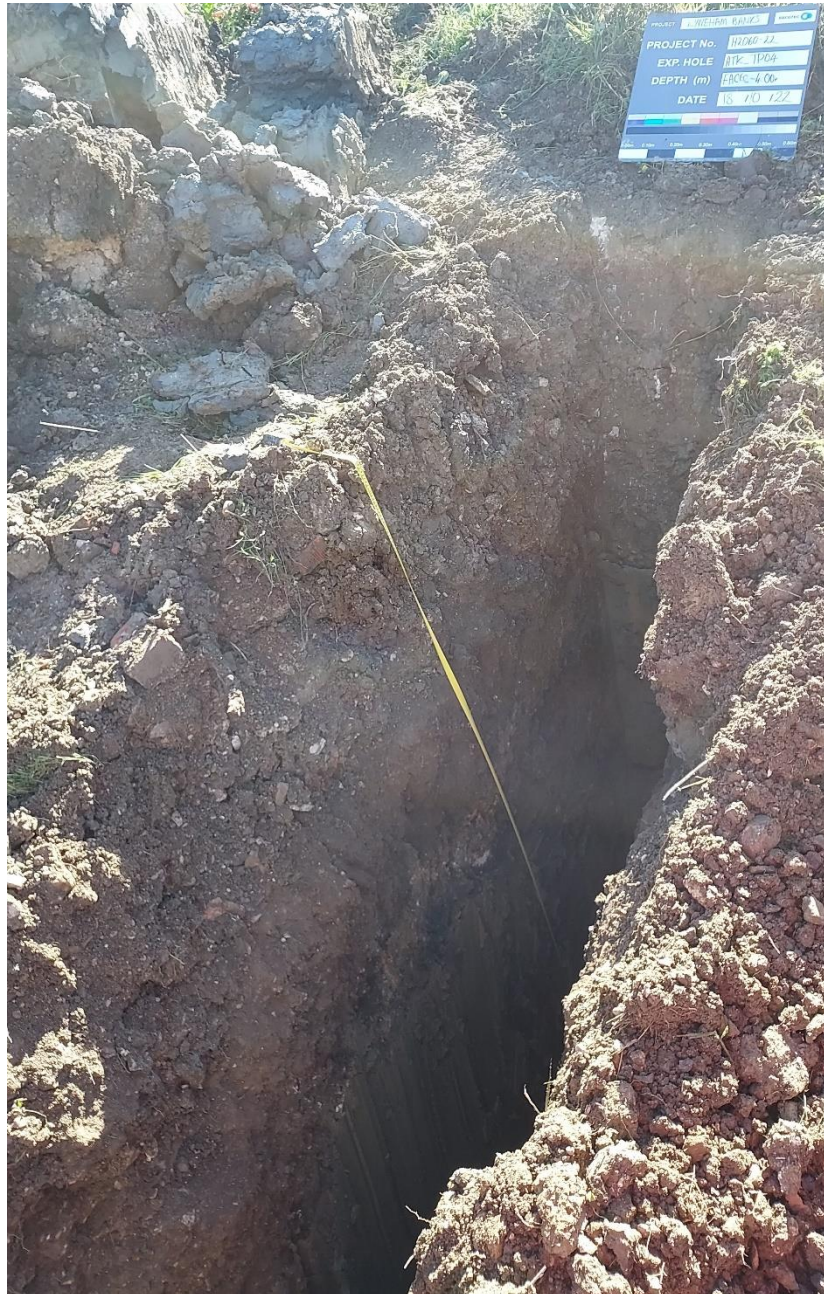
ATK_TP04 Face B



ATK_TP04 Face D

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: right;">109</p>
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Trial Pit Photographs



ATK_TP04 Face C

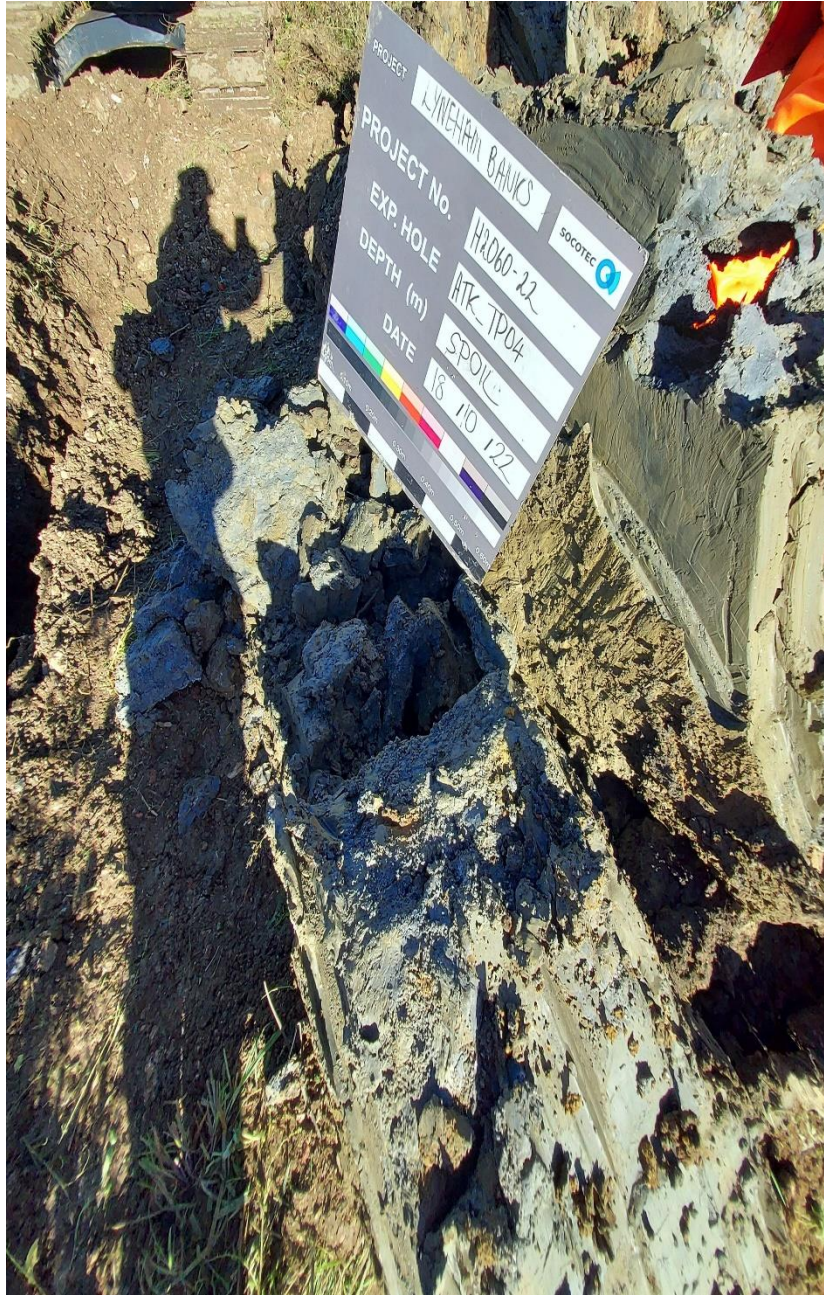
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Trial Pit Photographs



ATK_TP04 Spoil

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ATK_TP05 Face A

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Trial Pit Photographs



ATK_TP05 Face B



ATK_TP05 Face D

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Trial Pit Photographs



ATK_TP05 Face C

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ATK_TP05 Spoil

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ATK_TP06 Face A

Notes:

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ATK_TP06 Face D

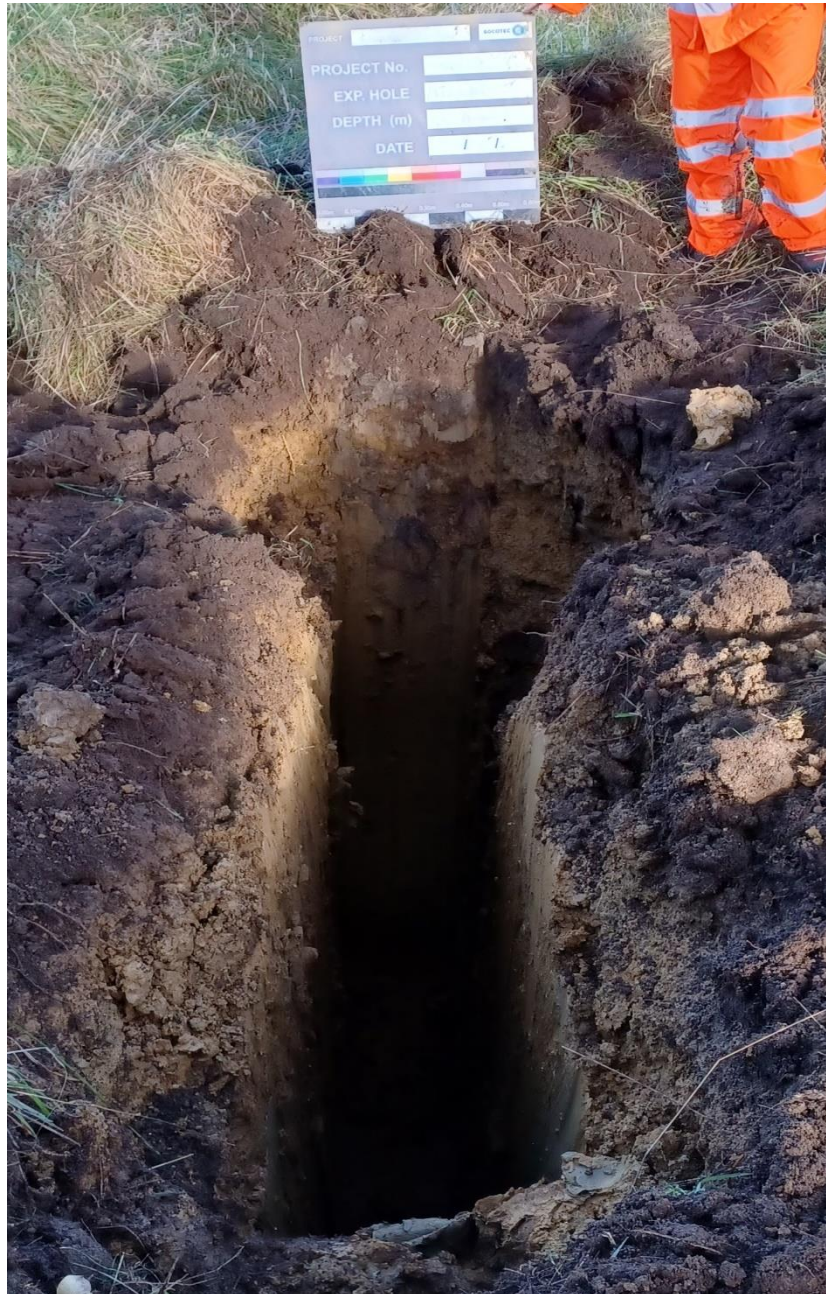
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Trial Pit Photographs



ATK_TP07 Face B

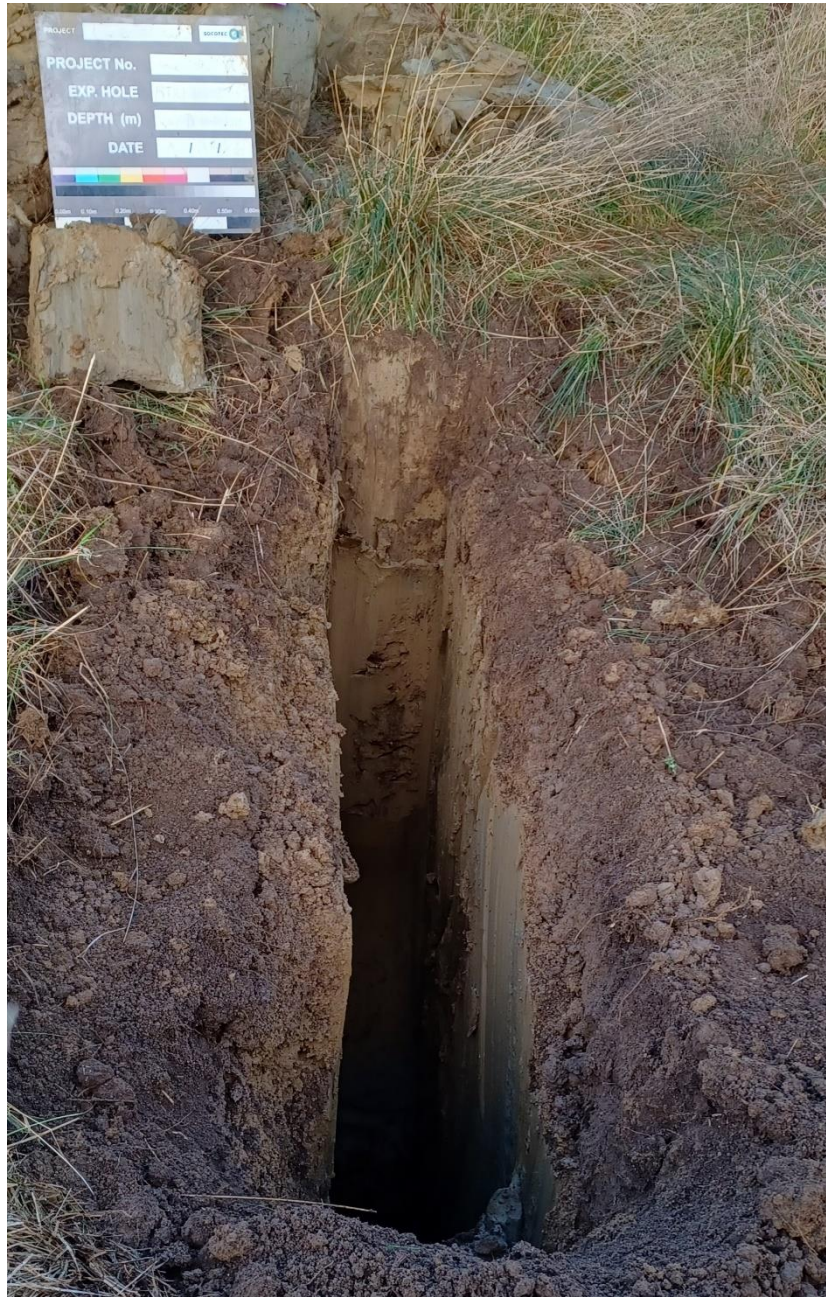
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Trial Pit Photographs



ATK_TP07 Face D

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ATK_TP07A Face A

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ATK_TP07A Face B

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Trial Pit Photographs



ATK_TP07A Face C

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ATK_TP08A Face B

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 123
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ATK_TP09 Face D

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 124
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Trial Pit Photographs



ATK_TP09 Face C



ATK_TP09 Spoil

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 125
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Trial Pit Photographs



ATK_TH10 Face C



ATK_TH10 Spoil

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 126
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Trial Pit Photographs



ATK_TP10 Face D

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ATK_TP11 Face D

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ATK_TP11 Spoil

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ATK_TP12 Face D

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Trial Pit Photographs



ATK_TP13 Face A

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ATK_TP13 Face B



ATK_TP13 Face D

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Trial Pit Photographs



ATK_TP13 Face C

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ATK_TP13 Spoil

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ATK_TP14 Face A

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ATK_TP14 Face B



ATK_TP14 Face D

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Trial Pit Photographs



ATK_TP14 Face C

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ATK_TP15 Face D

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ATK_TP16 Face D

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ATK_TP17 Face D

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Trial Pit Photographs



ATK_TP17 Face B

Notes:

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Trial Pit Photographs



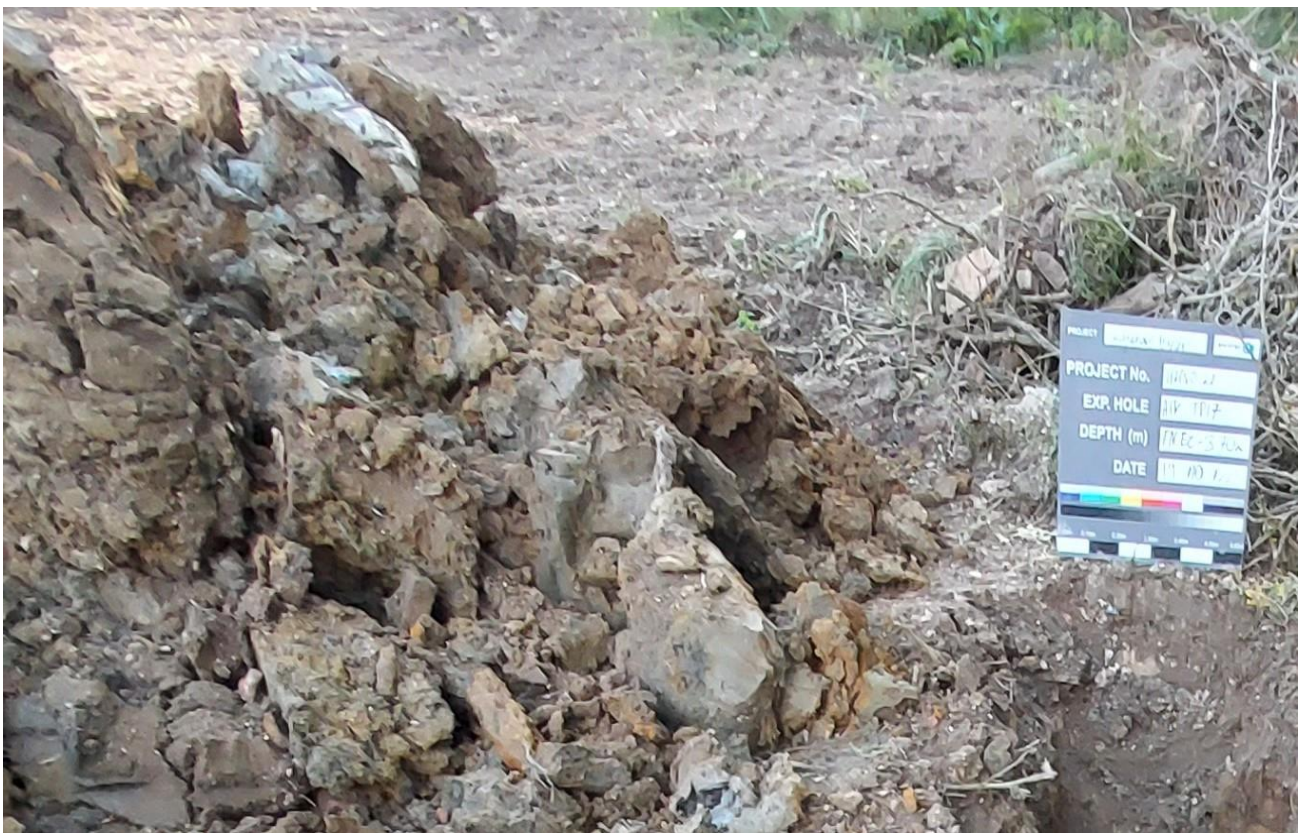
ATK_TP17 Face A



ATK_TP17 Face C

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Trial Pit Photographs



ATK_TP17 Spoil

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ATK_TP18 Face A

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Trial Pit Photographs



ATK_TP18 Face B



ATK_TP18 Face D

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	<p>Sheet</p> <p style="text-align: right;">145</p>
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Trial Pit Photographs



ATK_TP18 Face C

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ATK_TP19 Face B

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ATK_TP19 Face C

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Trial Pit Photographs



ATK_TP19 Face D

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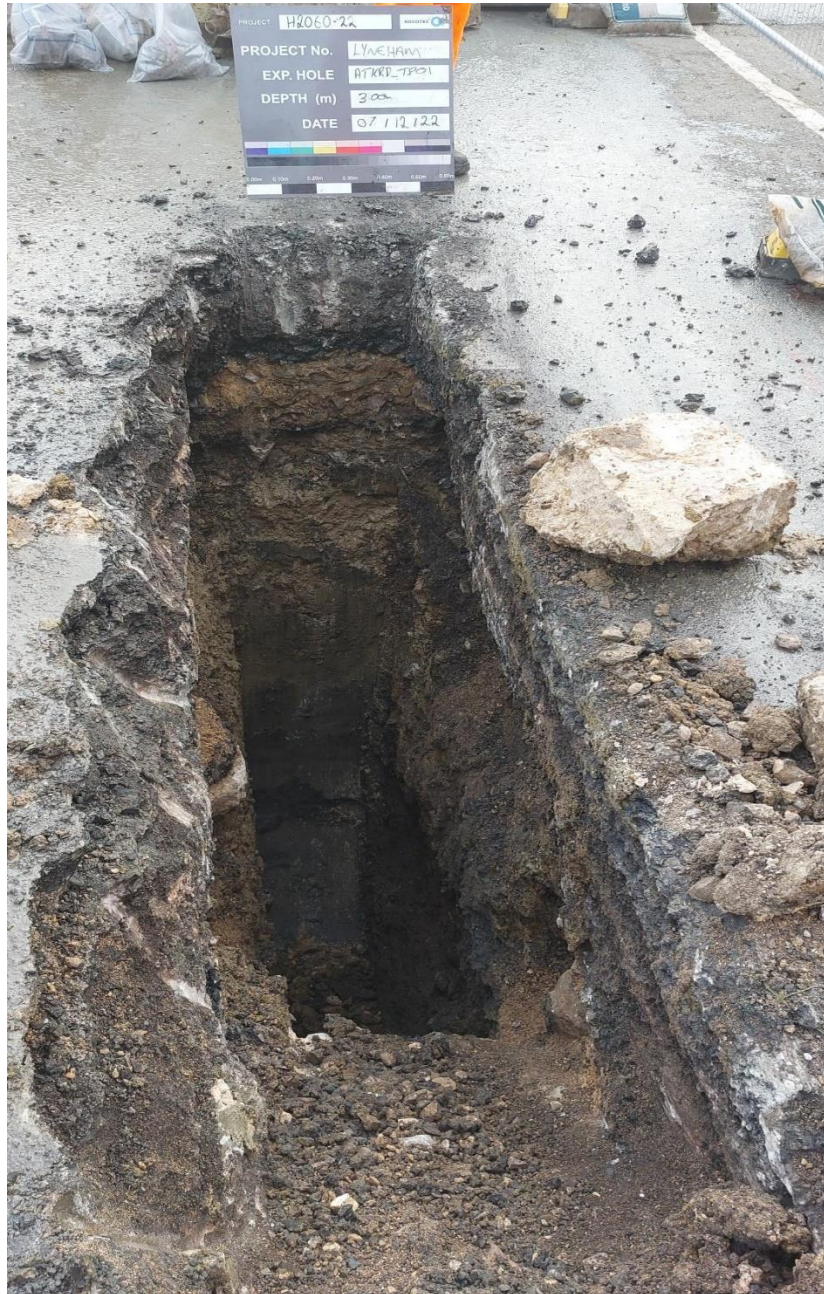
Trial Pit Photographs



ATKRD_TP01 Face A

Notes:	<p>Project Lyneham Banks</p> <p>Project No. H2060-22</p> <p>Carried out for Wiltshire Council</p>	Sheet 150
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Trial Pit Photographs



ATKRD_TP01 Face B

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ATKRD_TP01 Face C

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ATKRD_TP01 Face D

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ATKRD_TP01 Spoil

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