Douglas PARTNERS

GROUNDED EXPERTISE

Report on Geotechnical Investigation

Proposed Data Centre

78 Lockwood Road, Erskine Park NSW

Prepared for STACK Infrastructure Australia (78 Lockwood Road) Pty Ltd atf the STACK Infrastructure Australia (78 Lockwood Road) Unit Trust

Project 207476.10

10 March 2026

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Document History

Details

Project No.	207476.10
Document Title	Report on Geotechnical Investigation
Site Address	78 Lockwood Road, Erskine Park NSW
Report Prepared For	STACK Infrastructure Australia (78 Lockwood Road) Pty Ltd atf the STACK Infrastructure Australia (78 Lockwood Road) Unit Trust
Filename	207476.10.R.001.Rev3

Status and Review

Status	Prepared by	Reviewed by	Date issued
Revision 0	Adam Teoh	Stephen Jackson	31 July 2025
Revision 1	Adam Teoh	Stephen Jackson	7 August 2025
Revision 2	Adam Teoh	Stephen Jackson	21 August 2025
Revision 3	Adam Teoh	Scott Easton	10 March 2026

Distribution of Copies

Status	Issued to
Revisions 0 to 2	Michael Dyer, STACK Infrastructure Australia (78 Lockwood Road) Pty Ltd atf the STACK Infrastructure Australia (78 Lockwood Road) Unit Trust
Revision 3	Michael Dyer, STACK Infrastructure Australia (78 Lockwood Road) Pty Ltd atf the STACK Infrastructure Australia (78 Lockwood Road) Unit Trust

The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

Signature		Date
Author		10 March 2026
Reviewer	p.p. 	10 March 2026

FS604853

Douglas Partners acknowledges Australia's First Peoples as the Traditional Owners of the Land and Sea on which we operate. We pay our respects to Elders past and present and to all Aboriginal and Torres Strait Islander peoples across the many communities in which we live, visit and work. We recognise and respect their ongoing cultural and spiritual connection to Country.

Executive Summary

This Report on Geotechnical Investigation has been prepared by Douglas Partners Pty Ltd to accompany a State Significant Development Application (SSDA) for the development of a proposed data centre development at 78 Lockwood Road, Erskine Park (the site).

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 11 April 2025 issued for the SSDA (SSD-82211208). Specifically, this report has been prepared to respond to the SEARS requirement issued below.

Item	Description of Requirement	Section Reference
13. Ground and Water Conditions	Assess potential impacts on soil resources and related infrastructure and riparian lands on and near the site, including soil erosion, salinity and acid sulfate soils	Section 4 and 8.1.

Planning Information

The following has been provided by the project planner, Urbis, and is included herein, at the request of Urbis and Stack Infrastructure Australia, for reference to the reader:

The site is located in the Penrith Local Government Area (LGA) and is approximately 40km west of the Sydney Central Business District (CBD), 20km west of the Parramatta CBD, and 10km north-east of the future Western Sydney International Airport.

The site is an irregular shaped 7.7 hectare lot bounded to the north by Lenore Drive and to the east by an E2 Environmental Conservation corridor that follows Ropes Creek. The site relies upon access from a cul-de-sac at the eastern end of Lockwood Road at the site's southern boundary. An aerial photograph is provided below.



Source: Urbis GIS, 2025

The project comprises the construction of a data centre development including the following key components:

- Site preparation and bulk earthworks.
- Temporary construction access from Lenore Drive.
- Construction of a three-storey data centre comprising two buildings, with a maximum height of 26.5 metres and a total gross floor area (GFA) of approximately 56,506m², including technical data halls, office and administrative areas, and ancillary circulation space.
- At-grade under-croft car parking (34 spaces) within the building footprint, plus an additional 44 on-site spaces, providing a total of 78 parking spaces.
- Separate generator gantry accommodating 188 backup generators.
- Landscaping and associated public domain works.
- Extension and augmentation of physical infrastructure and utilities as required, including an on-site substation and water storage tanks integrated within the building footprints.
- Off-site works comprising the delivery of two 330kV transmission lines from the TransGrid Sydney West Substation site to the subject site, utilising existing road reserve along Lenore Drive.

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Report on Geotechnical Investigation
Proposed Data Centre
78 Lockwood Road, Erskine Park NSW

1. Introduction

The report presents the results of geotechnical investigations undertaken by Douglas Partners Pty Ltd (DP) for the property at 78 Lockwood Road, Erskine Park (referred to in this report as the 'site'). This report is a revision DP's 2024 geotechnical investigation report which was prepared for an earlier proposed industrial development by a different developer. This report has been updated to reflect the current data centre development proposed by STACK Infrastructure Australia (78 Lockwood Road) Pty Ltd atf the STACK Infrastructure Australia (78 Lockwood Road) Unit Trust (STACK) . The updated assessment, as outlined herein, was commissioned by STACK.

The proposed development comprises the construction of two data centre buildings (eastern and western) located centrally within the site, a generator yard to the east, and a substation yard to the north. Each data centre building will comprise three storeys (Lower Ground, Upper Ground, and Level 1). The buildings will occupy footprints of approximately 17,000 m^2 and 20,000 m^2, respectively.

The generator yard, located east of the data centre buildings, will cover an area of approximately 5,000 m^2 and include 188 generators. The substation yard, situated north of the data centre buildings, will occupy approximately 9,000 m^2 and include on-grade transformers and switch rooms. Site access is expected to consist of pavements between and around the proposed infrastructure, with entry points off Lenore Drive and Lockwood Road.

This revised geotechnical report provides information on subsurface conditions and relevant commentary to support the planning (i.e., SSD Application submission) and design phases in the context of the of the proposed data centre development. The scope of this revision includes:

- A review of geotechnical data obtained by DP from previous investigations undertaken for others to support previously proposed warehouse and data centre developments.
- A site walkover to assess whether surface conditions have changed since DP's most recent fieldwork in July 2024.
- Update of DP's 2024 geotechnical report (i.e. this report) previously prepared for others to reflect the current proposed data centre development by STACK.

This report must be read in conjunction with all appendices including the notes provided in Appendix A and B.

2. Background

Ownership of the site has changed several times prior to Stack's recent acquisition of the site for the proposed data centre development. The data from previous geotechnical and contamination investigations previously undertaken for others has been used to inform this current geotechnical assessment, summarised as follows:

- Report on Geotechnical Investigation (Ref: 207476.00.R.001.Rev0, dated 18 March 2022), prepared by Douglas for a previously proposed data centre development [Douglas Geo 2022].
- Report on Targeted Environmental (Contamination) Assessment (Ref: 207476.01.R.001.Rev1, dated 19 May 2023), prepared by Douglas for a previously proposed data centre development [Douglas Env 2023a].
- Pre-Purchase Due Diligence Contamination Assessment (Ref: 207476.02.R.001.Rev0, dated 18 September 2023), prepared by Douglas as part a due diligence package for a proposed purchaser [Douglas Env 2023b].
- Report of Geotechnical Desktop Assessment (Ref. 207476.03.R.001.Rev0, dated 18 September 2023), prepared by Douglas as part a due diligence package for a proposed purchaser [Douglas Geo 2023a]. As this report is a desktop assessment based on the previous field work, no additional field work was undertaken.
- Pre-Purchase Due Diligence Contamination Assessment (Ref: 207476.04.R.001.Rev0, dated 11 December 2023), prepared by Douglas as part a due diligence package for the last Vendor [Douglas Env 2023c]
- Geotechnical Desktop Assessment (Ref. 207476.05.R.001.Rev0, dated 11 December 2023) prepared by Douglas as part a due diligence package for the last Vendor [Douglas Geo 2023b].
- Level 1 Testing and Supervision Report (Ref: 8982/6-AC-R1, dated 13 May 2021) prepared by Geotech Testing Pty Ltd and supplied by the last Vendor as part of the due diligence documentation package.

From our review of information provided about the site history, it is understood that the site was subject to bulk earthworks, together with the adjacent property to the west, to create a near-level building platform. Minor amounts of cut on the western boundary and up to 3 m of fill were placed to create the platform. The works are understood to have been carried out by FDC Construction and Fitout (NSW) Pty Ltd between February and April 2021.

A Level 1 Testing and Supervision Report (Ref: 8982/6-AC-R1, dated 13 May 2021) prepared by Geotech Testing Pty Ltd which DP has obtained as part of previous works for others. This report indicates the fill was placed under Level 1 testing conditions in accordance with AS3798 Guidelines on Earthworks for Commercial and Residential Structures (2007) between January and April 2021. The fill was reported to be compacted to achieve a minimum density ratio of 98% relative to Standard compaction with a moisture variation of within 2% of Standard optimum moisture content.

DP's previous due diligence assessments found that topsoil (unsuitable fill material) was encountered at the base of TP39, located near the northern boundary of the site.. It was concluded that further geotechnical investigation be undertaken to assess the consistency and uniformity of the fill placed, as well as investigate if topsoil, or other unsuitable fill material, was

buried during earthworks. This is discussed further in Section 5 and as part of the results and commentary of this updated investigation report.

Relevant drawings and field work results from DP's previous investigations on the site have been included within Appendix B and Appendix E.

3. Site Description

The overall site is identified as 78 Lockwood Road, Erskine Park (Lot 101 in DP1268632). It is an irregularly shaped site covering an approximate area of 7.73 hectares, with maximum dimensions of 440 m by 330 m along its north-south and east-west boundaries respectively. The site location is shown in Figure 1.



Figure 1: Approximate Site Location

The site area has had bulk earthworks completed, forming a clay building platform across the footprint of the site. Site levels typically fall at gradients estimated to be less than one degree towards the north-east (RL 55.9 m to RL 53.2 m relative to Australian height datum, AHD). Some areas of water ponding on the building platform as well as erosion and rutting at existing batters (along the adjacent lot and basin) have been observed on-site.

The site is bounded by the following:

- North – Lenore Drive and an industrial facility currently used as a vehicle holding area.

- East – Ropes Creek with bushland surrounding the creek. Two stormwater detention basins are located adjacent to the north east corner of the site.
- South – the cul-de-sac of Lockwood Road and an industrial property.
- West – A recently constructed industrial facility currently used as a logistics facility.

4. Published Data

4.1 Geology

Reference to the Penrith 1:100,000 scale Geological Series Sheet indicates that the site is underlain by sediments of Quaternary age. The Quaternary sediments comprise sands, silts and clays that have been deposited in an alluvial environment (stream deposited).

The Quaternary sediments are underlain by Bringelly Shale of Triassic age. Bringelly Shale typically consists of interbedded layers of siltstone and claystone with alternating fine-grained sandstone and laminite (interbedded sandstone and siltstone) layers. The siltstone and claystone layers range from 3 m to 15 m thick while the sandstone and laminite layers are typically less than 2 m thick. The Bringelly Shale typically weathers to form a residual clay profile of medium to high plasticity and reactivity with the soils known to be highly susceptible to erosion and dispersion.

4.2 Hydrogeology

Groundwater flows in the area are anticipated to generally follow site topography and flow towards the nearest water system which is Ropes Creek located to the east of the site.

The hydrogeology of the Bringelly Shale is usually characterised by shallow seepage along the soil and rock interface and a deep fractured rock aquifer, tens of metres below surface levels. Aquifer recharge is minimal due to the low permeability of the near surface clays, and low horizontal flow velocities in the soil and rock.

A search of the NSW Department of Primary Industries Water (DPI Water) online map of registered groundwater works was undertaken as part of the assessment. The search identified several registered groundwater boreholes approximately 1 km west of the site. The standing water level was only recorded in one well at 12 m depth.

4.3 Acid Sulphate Soils

Acid Sulphate Soil (ASS) mapping indicates that the site is located in an area of “no known occurrence of acid sulphate soils”.

4.4 Salinity

The Department of Infrastructure, Planning and Natural Resources (DIPNR) Map of Salinity Potential in Western Sydney 2002 suggests that the site is in an area of “moderate salinity potential”. Higher potential salinity areas are mapped further to the east along the creek lines where water accumulation is high.

5. Previous Geotechnical Investigations

5.1 DP Geo 2022

5.1.1 DP Geo 2022 Field Work Methods

The field work undertaken in October 2021 as part of DP Geo 2022, for the whole site (across both Stages 1 and 2 areas) included:

- Drilling of 30 boreholes (BH1 to BH30) using a truck or track mounted drilling rig fitted with 110 mm diameter spiral flight augers to practical refusal on at least very low strength siltstone. The boreholes were drilled to depths of 4.1 m to 11.1 m. Standard penetration tests (SPTs) were completed at regular depths within the overburden soil.
- Extension of eight boreholes (BH1, BH6, BH8, BH10, BH12, BH17, BH20 and BH25) into the underlying bedrock using NMLC coring techniques to obtain continuous 50 mm diameter core samples of the rock for identification and strength testing purposes. The cored boreholes were terminated at depths of between 11.5 m to 14.2 m.
- Excavation of ten test pits (TP31 to TP40) using a 5 tonne excavator fitted with a 600 mm wide toothed bucket to depths of 0.7 m to 1.7 m.
- The installation of groundwater monitoring wells in boreholes BH6, BH8 and BH20 after drilling. The wells involved inserting Class 18 uPVC screen and casing to depths of 9 m to 12 m, backfilling the screened length with clean gravel, plugging the top of the gravel with bentonite pellets and backfilling the casing with drilling spoil. Following installation, the wells were purged of groundwater and measurement of the groundwater level was carried out on two subsequent occasions (22 and 29 November 2021).

Undisturbed and disturbed samples were collected from the boreholes and test pits to assist with logging and laboratory testing.

The ground surface levels (measured in 'metres above AHD') together with the Easting and Northing coordinates (measured to GDA2020) at the borehole and test pit locations were determined by using a high precision Differential GPS which is accurate to approximately ±0.1 m. The locations of the boreholes and test pits are shown in Drawing 2, in Appendix B.

5.1.2 DP Geo 2022 Field Work Results

The results of DP Geo 2022 are outlined below. Detailed borehole and test pit logs were prepared and are presented in Appendix E. Notes defining classification methods and descriptive terms used may be found in Appendix C. The subsurface conditions encountered during DP's 2022 investigation are summarised as follows:

Fill: Silty or gravelly clay fill to depths ranging between 0.1 m and 3 m in all boreholes and test pits. The fill generally appeared well compacted, however, the upper 0.3 m to 0.5 m had been subjected to significant moisture softening. Test pit TP39 included a topsoil layer at the base of the fill. Test pit TP32 included a plastic pipe.

Natural Soil: Typically, stiff to hard silty clay to depths of 3.3 m and 9.1 m. The clay was generally stiff grading to very stiff with depth. Boreholes BH9, BH11, BH15, BH16, BH25 and BH26 to BH28 included firm layers that were typically less than 1.5 m thick except in BH29 where the firm layer was 2.5 m thick.

Weathered Rock: Very low strength, pale grey and red-brown siltstone or laminite was encountered below depths of between 3.3 m and 9.1 m. Seams and bands of extremely low, medium and high strength siltstone were encountered within the weathered rock profile.

Low and Medium Strength Laminite and Siltstone: Low and medium strength, highly weathered to fresh, siltstone and laminite (interbedded siltstone and fine to medium grained sandstone) were encountered below depths of 6.9 m to 11.1 m in the cored boreholes. Borehole BH17 also included a high strength layer.

A summary of the ground profile encountered during this investigation is summarised in Table 7 in Section 8.1.

Groundwater seepage was observed in many boreholes (BH5, BH6, BH9 to BH11, BH15 to BH17, BH19 to BH22 and BH24 to BH30) at depths of 5.0 m to 7.0 m during auger drilling. No free groundwater was observed during auger drilling at the remaining borehole locations. The use of water as a drilling fluid prevented groundwater observations during rotary drilling and coring. Backfilling of boreholes at the completion of drilling precluded long term monitoring of the groundwater levels.

Groundwater levels were measured in the monitoring wells on two occasions. A summary of the groundwater levels measured is presented in Table 1. It is noted that groundwater levels are transient and are affected by preceding climatic conditions and soil/rock permeability and can therefore fluctuate with time.

Table 1: Results of Groundwater Level Measurements

Borehole	Surface RL (m AHD)	Monitoring Well Measurements – Water Level			
		22 November 2021		29 November 2021	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
6	53.5	4.5	49.0	4.6	48.9
8	54.5	5.2	49.3	5.3	49.2
20	53.7	5.2	48.5	5.3	48.4

Note: RL = Reduced Levels relative to AHD

5.1.3 DP Geo 2022 Geotechnical Laboratory Testing

As part of DP Geo 2022, selected samples collected from the test pits were tested in a NATA accredited laboratory for measurement of Atterberg limits, dispersion potential, moisture content, compaction properties and California bearing ratio (CBR). The detailed results are given in Appendix E and are summarised in Table 2.

Table 2: Results of Laboratory Testing – Mechanical

Sample Location	Depth (m)	FMC (%)	OMC (%)	MDD (t/m³)	CBR (%)	W_L (%)	W_P (%)	PI (%)	ECN
TP31	0.3 – 0.4	22.1	17.5	1.70	2.5	71	19	52	2
TP32	0.5 – 0.6	20.9	18.0	1.79	3.0	42	16	26	2
TP35	0.5 – 0.6	15.1	16.5	1.77	2.5	40	15	25	2
TP36	0.5 – 0.6	15.9	15.5	1.75	1.5	47	17	30	2
TP38	0.5 – 0.6	22.8	21.5	1.67	1.5	74	22	52	2
TP40	0.5 – 0.6	13.7	15.5	1.85	4.0	29	16	13	2

Notes: FMC = Field Moisture Content; OMC = Standard Optimum Moisture Content; MDD = Maximum Dry Density; CBR = California bearing ratio; W_L = Liquid Limit; W_P = Plastic Limit; PI = Plasticity Index; ECN = Emerson Crumb number

The following is inferred from the laboratory test results:

- The Atterberg limits results indicate that the silty clay samples ranged from low to high plasticity but were generally of medium to high plasticity.
- The CBR values were of low remoulded strength and ranged from 1.5% to 4.0% for the clay samples tested.
- The field moisture contents ranged from 13.7% to 22.8% for the silty clay samples tested. The field moisture contents of the samples ranged from 2.6% wet to 1.4% dry of standard optimum moisture content at the time of sampling.
- The Emerson Class Numbers were 2, indicating the clays have a high dispersion potential.

5.1.4 DP Geo 2022 Chemical Laboratory Testing

Selected samples from the boreholes and test pits were also tested in the laboratory for determination of aggressivity (pH, sulphate ion, chloride ion and electrical conductivity) and salinity (electrical conductivity, textural class, ECe). The detailed results are given in Appendix E and are summarised in Table 3.

Table 3: Results of Laboratory Testing – Aggressivity and Salinity

Sample Location	Depth (m)	pH	Chloride (mg/kg)	Sulphate (mg/kg)	$EC_{1:5}$ (µS/cm)	Texture Class	EC_e (dS/m)	Salinity Class
BH2	0.1 – 0.2	5.5	590	150	460	Light Medium Clay	3.7	Slightly Saline
BH2	2.5 – 2.95	5.6	92	10	72	Medium Clay	<2	Non-Saline
BH4	0.4 – 0.5	5.2	790	230	650	Medium Clay	4.6	Moderately Saline
BH4	7.0 – 7.23	7.7	230	54	190	Medium Clay	<2	Non-Saline
BH11	0.1 – 0.2	6.9	570	240	500	Light Medium Clay	4.0	Moderately Saline
BH11	4.0 – 4.45	7.5	520	60	380	Clay Loam	3.4	Slightly Saline
BH13	0.4 – 0.5	5.5	480	290	460	Medium Clay	3.2	Slightly Saline
BH13	7.0 – 7.41	7.9	790	120	570	Light Medium Clay	4.5	Moderately Saline

Note: $EC_{1:5}$ = Electrical Conductivity in Water, EC_e = Electrical Conductivity corrected for texture

The subsurface conditions encountered at the site during DP Geo 2022 indicate that soils are in 'Condition B' as defined by AS 2159. The results show that the samples tested indicate the ground conditions are:

- Mildly aggressive to non-aggressive to concrete and non-aggressive to steel with reference to AS2159.
- Range from non-saline to moderately saline.

5.1.5 DP Geo 2022 Rock Core Testing

Point Load Strength Index (Is_{50}) testing was carried out on selected rock core specimens during DP Geo 2022. The results of the tests are shown on the borehole logs at the appropriate depths, refer to past field work results in Appendix E.

5.2 DP Env 2023a

5.2.1 DP Env 2023a Field Work Methods

Field work for this investigation was carried out in February 2023 and comprised:

- The excavation of 37 test pits (TP1 to TP36 and TP33A) to depths of between 0.5 m and 2.3 m, generally terminating upon encountering natural soils.

- Surface sampling of several locations for contamination proposes.

Disturbed samples were collected from the test pits to assist with logging and contamination laboratory testing.

The ground surface levels together with the Easting and Northing coordinates (measured to GDA2020) at the test pit locations were determined by using a dGPS, accurate to approximately ±0.1 m. The locations of the test pits are shown in Drawing 2, in Appendix B.

5.2.2 DP Env 2023a Field Work Results

The results of DP Env 2023a are outlined below. Detailed test pit logs were prepared and are presented in Appendix E. Notes defining classification methods and descriptive terms used may be found in Appendix C. The subsurface conditions encountered during this investigation are summarised as follows:

Fill: Silty or gravelly clay fill to depths ranging between 0.3 m and greater than 2.1 m in all test pits. The fill generally appeared well compacted, however, the upper 0.3 m to 0.5 m was noted to be variably compacted with some surficial vegetation.

Natural Soil: Estimated to be of stiff consistency and encountered beneath the fill within all test pits, excluding TP32.

Weathered Rock: Not encountered during this investigation.

A summary of the ground profile encountered during this investigation is summarised in Table 7 in Section 8.1.

Groundwater seepage was not observed during excavation of the test pits. It is noted that groundwater levels are transient and are affected by preceding climatic conditions and soil/rock permeability and can therefore fluctuate with time.

5.3 DP Env 2023b

5.3.1 DP Env 2023b Field Work Methods

This investigation was carried out in June 2023 and comprised the excavation of 13 test pits (TP101 to TP113) to depths of between 1.6 m and 3.4 m and generally terminating upon encountering natural soils.

Disturbed samples were collected from the test pits to assist with logging and contamination laboratory testing.

The ground surface levels together with the Easting and Northing coordinates (measured to GDA2020) at the test pit locations were determined by using a dGPS, accurate to approximately ±0.1 m. The locations of the test pits are shown in Drawing 2, in Appendix B.

5.3.2 DP Env 2023b Field Work Results

The results of DP Env 2023b are outlined below. Detailed test pit logs were prepared and are presented in Appendix E. Notes defining classification methods and descriptive terms used may be found in Appendix C. The subsurface conditions encountered during this investigation are summarised as follows:

Fill: Silty or gravelly clay fill to depths ranging between 0.9 m and greater than 3.4 m in all test pits. The fill generally appeared well compacted (or equivalent to a stiff to very stiff clay), however anthropogenic materials such as timber, metal wire, plastic fragments and organic material such as rootlets was noted within the test pits.

Natural Soil: Estimated to be of stiff consistency and encountered beneath the fill within all test pits.

Weathered Rock: Not encountered during this investigation.

A summary of the ground profile encountered during this investigation is summarised in Table 7 in Section 8.1.

Groundwater seepage was not observed during excavation of the test pits. It is noted that groundwater levels are transient and are affected by preceding climatic conditions and soil/rock permeability and can therefore fluctuate with time.

5.4 DP Geo 2023a, DP Env 2023c and DP Geo 2023b

As DP Geo 2023a, DP Env 2023c and DP Geo 2023b are desktop assessment, no additional field work was undertaken as part of these assessment reports and hence all the assessment of the site was based on the field work undertaken for DP Geo 2022, DP Env 2023a and DP Env 2023b.

6. Current Field Work

The current field work for this revised report was undertaken between the dates of 11 July 2024 and 17 July 2024 with a recent site walkover undertaken on 24 June 2025 to assess site conditions.

6.1 Site Walkover

A geotechnical engineer from Douglas visited the site on 24 June 2025 and undertook a site walkover and the following observations are noted:

- A fence has been erected between the site and the adjacent property to the west. Some building rubble, concrete blocks, plastic sheeting and pipes are also noted to be present within the site along this fence line.
- The site surface was generally level with no observable evidence of further development work since field investigations in July 2024.

- The site surface was generally exposed clay fill. The observable surface was generally desiccated due to a lack of ongoing earthworks maintenance or the placement of a protective surfacing, such as topsoil or a working platform.
- A mound/stockpile of fill along the northern site boundary, previously present on site, remains relatively unchanged and is likely to be uncontrolled in nature with high amounts of topsoil.
- The site is partially covered with vegetation (i.e. small shrubs, patchy grass and weeds) that have grown since field investigations in July 2024. Vegetation is also noted more mature along the northern, eastern and southern site boundaries.

During the site walkover the existing ground water monitoring wells were measured with results presented in Table 4.

6.2 Field Work Methods

The field work for this revised report included:

- The set out of a total of 79 test pits and CPT Locations.
- Electronic services scanning and survey with a differential GPS system.
- Cone penetration tests (CPTs) at 25 locations (CPT301 to CPT325) to depths of between 2.2 m and 7.5 m, terminating below the existing fill or upon refusal.
- Excavation of 54 test pits (TP201 to TP254 using a 5 tonne excavator fitted with a 450 mm wide toothed bucket targeting depths of 0.8 m and 3.4 m, with all but three test pits terminating approximately 0.5 m into the natural clays or upon bucket refusal and the others terminating in fill due to the limit of reach of the excavator.
- Supervision of the CPT testing, drilling and logging of the boreholes by an experienced geotechnical engineer from Douglas.
- Groundwater measurement of water levels within previously installed monitoring wells, located within BH6, BH8 and BH20.

Coordinates and surface levels for all borehole and CPT locations were determined using a dGPS receiver, which has an accuracy of ±0.1 m. Coordinates are in GDA2020/MGA Zone 56 format (Geocentric Datum of Australia 2020 base with Map Grid of Australia projection) and levels are relative to AHD. The test locations are shown in Drawings 3 and 4 in Appendix B.

6.3 Field Work Results

The subsurface conditions encountered at the test pit locations are shown on the engineering logs in Appendix C, together with the CPT plots including inferred soil stratification based on the measured cone tip and sleeve resistance. Notes defining descriptive terms and classification methods are included in Appendix C.

The general subsurface profile encountered at the test locations may be summarised as follows:

Fill — Encountered at all test pit and CPT locations, excluding CPT304. The fill was generally encountered to depths of between 0.1 m and 3.0 m, however, fill to depths of greater than 3 m was encountered at the test pits located near the landscaping and setback area (TP207 to TP209 and CPT305) along the northern boundary. The fill was found to generally consist of predominantly clay soils, with minor constituents of sand, silt and gravels with some layers of silty sand. Topsoil was not encountered during the excavation of the test pits, however, traces of unsuitable material (oversized sandstone boulders, timber and plastic fragments) were observed within some of the test pits at various depths within the fill, and a significant proportion of wood chips (possibly mulch) was encountered within TP231 throughout the full 2.9 m depth of fill.

Natural Soil — Alluvial clay was encountered within all test pits (excluding TP207 to TP209, TP229, TP230 and TP254 where test pitting did not reach the base of the fill) and all CPTs below the general fill. The natural clay was observed to consist of medium to high plasticity, red-brown to grey and dark grey clay, with traces of rootlets and ironstone gravels and generally was of a stiff to very stiff consistency. Residual clays were not encountered during excavation of the test pits and could not be inferred from the CPT test results as CPTs are a blind testing technique. However residual clays are likely to be present beneath site, likely occurring as a 1 m to 2 m thick clay layers above bedrock.

Bedrock — Weathered bedrock as well as low to medium-strength rock was not encountered during this investigation, however, reference should be made to field results from DP Geo 2022, included in Appendix E and Section 8.1, which summarises the results of boreholes drilled within the site.

Groundwater was not encountered during test pit excavations, however, seepage was encountered following the withdrawal of CPT rods at CPT321 to CPT325 at depths of between 2.7 m and 5.2 m depth. Groundwater measurements of existing wells were undertaken on 25 September 2024 and on 24 June 2025 and are presented below in Table 4.

Table 4: Summary of Groundwater Observations

Borehole	Surface RL (m AHD)	Monitoring Well Measurements – Water Level			
		25 September 2024		24 June 2025	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
6	53.5	4.0	49.5	4.9	48.6
8	54.5	5.0	49.5	5.7	48.8
20	53.7	4.9	48.8	5.3	48.4

Reference should be made to Table 1 for further groundwater measurements made at these groundwater wells on 22 November 2021 and 29 November 2021 during the previous field investigations, It is noted that groundwater levels are transient and are affected by preceding climatic conditions and soil/rock permeability and can therefore fluctuate with time.

6.4 Laboratory Test Results

CBR tests were undertaken on near-surface samples collected from the test pits located within proposed pavements and hardstand areas. Salinity tests were undertaken on samples of the fill for classification of the existing fill materials. The NATA accredited laboratory test results are summarised in Table 5. The detailed laboratory test reports are presented in Appendix D.

Table 5: Summary of CBR Test Results

Test	Depth (m)	FMC (%)	OMC (%)	MDD (t/m^3)	CBR (%)	Swell (%)
TP206	0.5 – 0.7	12.7	16.0	1.78	12	0.5
TP212	0.5 – 0.7	17.8	18.0	1.76	3.0	3.0
TP224	0.5 – 0.7	7.1	11.0	2.17	30	0.0
TP235	0.5 – 0.7	18.2	21.0	1.68	3.0	2.0
TP248	0.5 – 0.7	23.7	18.0	1.74	3.0	2.5
TP249	0.5 – 0.7	14.9	16.0	1.79	3.0	2.5

Notes: FMC = Field Moisture Content OMC = Standard Optimum Moisture Content
MDD = Maximum Dry Density CBR = California bearing ratio

Electrical conductivity and textural class testing were undertaken on selected fill samples to assess the salinity of the placed fill. The results of the salinity tests are summarised in Table 6.

Table 6: Summary of Salinity Test Results

Test	Depth	pH	$EC_{1:5}$ (µS/cm)	Textural Class	EC_e (dS/m)	Salinity
TP201	0.0-0.2	6.1	61	Light Medium Clay	<2	Non-saline
TP201	0.8-1.0	5.1	370	Medium Clay	2.6	Slightly saline
TP203	0.0-0.2	5.7	420	Sandy Loam	5.9	Moderately saline
TP203	0.9-1.1	4.7	1300	Medium Clay	9.1	Very Saline
TP205	0.0-0.2	6.9	450	Light Clay	3.8	Slightly saline
TP205	0.8-1.0	5.6	530	Medium Clay	3.7	Slightly saline
TP212	0.0-0.2	7.4	390	Medium Clay	2.7	Slightly saline
TP212	2.0-2.2	5.6	460	Clay Loam	4.1	Moderately saline
TP212	2.4-2.6	6.1	150	Clay Loam	<2	Non-saline
TP223	0.0-0.2	7.1	660	Light Medium Clay	5.3	Moderately saline
TP223	0.8-1.0	4.8	500	Light Medium Clay	4.0	Moderately saline
TP227	0.0-0.2	5.6	360	Light Medium Clay	2.9	Slightly saline
TP227	1.0-1.2	7.3	630	Light Clay	5.4	Moderately saline
TP227	2.4-2.6	6.4	160	Medium Clay	<2	Non-saline

Test	Depth	pH	$EC_{1:5}$ (µS/cm)	Textural Class	EC_e (dS/m)	Salinity
TP233	0.0-0.2	7.8	400	Light Medium Clay	3.2	Slightly saline
TP233	1.0-1.2	5.5	210	Light Medium Clay	<2	Non-saline
TP237	0.0-0.2	6.1	760	Light Medium Clay	6.1	Moderately Saline
TP237	0.8-1.0	6.4	620	Medium Clay	4.3	Moderately Saline
TP237	3.0-3.2	5.3	260	Medium Clay	<2	Non-saline
TP240	0.0-0.2	5.8	160	Light Medium Clay	<2	Non-saline
TP240	0.8-1.0	5.7	270	Light Clay	2.3	Slightly saline
TP240	2.7-2.9	6.4	90	Clay Loam	<2	Non-saline
TP247	0.0-0.2	5.7	350	Light Clay	3.0	Slightly saline
TP247	0.9-1.1	4.7	560	Medium Clay	3.9	Slightly saline
TP249	0.0-0.2	7.7	710	Medium Clay	5.0	Moderately Saline
TP249	0.5-0.7	4.9	220	Light Medium Clay	<2	Non-saline
TP253	0.0-0.2	7.2	250	Medium Clay	<2	Non-saline
TP253	2.0-2.2	5.8	500	Medium Clay	3.5	Slightly saline

Note: $EC_{1:5}$ = Electrical Conductivity in Water, EC_e = Electrical Conductivity corrected for texture

7. Proposed Development

Based on the supplied concept drawing sets (drawings ref. 2413-W-A000 to A501 RevA by Genton Pty Ltd dated 8 August 2025 and NA251463-C02-0001 to C11-0302 RevA by Acor Consultants dated 5 August 2025) the development is understood to comprise two multi-storey data centre buildings, a generator yard, and a substation yard at 78 Lockwood Road, Erskine Park. Site access will be provided via Lenore Drive and Lockwood Road, with internal pavements connecting the various infrastructure elements throughout the site.

The data centre buildings will be centrally located within the site and comprise three main storeys (Lower Ground, Upper Ground, and Level 1). The buildings will be founded above the existing site surface levels, with finished floor levels (FFL) of RL55.9 m and RL55.2 m AHD, and approximate footprints of 17,000 m² and 20,000 m² for the eastern and western data centre buildings, respectively.. The generator yard will be located to the east of the data centre buildings and will contain approximately 188 individual generator units and covering an area of around 5,000 m². The yard will be founded near to existing surface levels, with a finished floor level (FFL) of RL54.1 m AHD. To the north, a substation yard of approximately 9,000 m² is proposed, which will accommodate on-grade transformers and switch rooms. The current concept design indicates that this area will be founded above existing surface levels, grading between RL54.8 m and RL 53.2 m AHD, with a 1–1.2% fall to the east.

From the provided concept design, it is anticipated that earthworks will include:

- The placement of up to 2.0 m of fill within the areas of the data centre buildings to raise existing site levels (currently between RL53.2 m AHD and RL55.8 m AHD) to the design FFLs of RL55.9 m and RL55.2 m AHD.
- The placement of up to 1.4 m of fill within the area of the generator yard (currently between RL52.8 m AHD and RL53.4 m AHD) to found a fuel storage area (at FFL54.1 m AHD).
- Cut and fill across the proposed substation yard with placement of up to 1.5 m of fill and excavation of up to 0.5 m below current site levels.
- Various retaining walls may also be required, subject to ongoing design, to support changes in design surface levels, between areas within the site as well as across the site's boundary.

8. Comments

8.1 Geotechnical Model

Based on the subsurface conditions encountered during the current investigation and from previous investigations in the development area, it is evident that the soil profile (fill and natural clay) generally increases with depth from the western boundary, at depths of approximately between 3.8 m and 6.0 m, towards the central and eastern portions of the site, at depths of approximately between 7.0 m and 8.1 m. The fill was observed as a layer of clay soil to depths of between 0.2 m and greater than 3.0 m, with fill deeper than 3.0 m encountered along the northern boundary, within the area of the landscape setback where a fill mound is present. Fill depths vary across the development area, likely dictated by original topography and past earthworks (cut and fill) to form the existing ground surface levels (currently between RL52 m and RL55 m AHD).

From a review of the previous reports, it is understood that the past earthworks were undertaken in a 'controlled' manner i.e. under Level 1 earthworks control as per AS3798.

During the investigation, the fill was noted to predominantly comprise clay in a generally well compacted state with minor constituents of silt, gravels, as well as rootlets and timber. Although rootlets were observed within the fill, the rootlets were observed at low concentrations (i.e. trace amounts) and were well distributed throughout the fill layer. CPT testing did not encounter any material indicating significantly under compacted fill. Given the generally well compacted nature of the fill and the trace amounts of rootlets at varying depths, the rootlets (possibly old topsoil) were blended at low concentrations when placed.

Unsuitable material (timber/wood fragments and plastic fragments) was generally encountered within most test pit locations. Generally, these materials were also noted in trace amounts within the test pits and as the fill was placed in a controlled manner, these materials are unlikely to compromise the integrity of the fill.

Rectification of the fill will however be required to address the presence of variably compacted fill as well as unsuitable fill (due to high concentrations of rootlets, timber fragments and silt) encountered within areas associated with TP208 to TP210, TP229 to TP232 and TP254. Variably compacted material was encountered at most CPT locations to depths of between 0.2 m to 0.5 m. This less compacted near-surface material is likely the result of initially well compacted fill being

placed and then subject to possible erosion, weathering and shrink and swell movements since its initial placement. At TP208 to TP210, TP229 to TP232 and TP254 the fill is not considered to have been placed in a controlled manner, possibly due to original proposals for landscaping in this 'frontage' area of the site. Further assessment during site preparation will be required to assess the extent of the unsuitable fill, with rectification being required if unsuitable material is found to underlie any proposed buildings, retaining walls, hardstands, pavements or services installation areas.

From the laboratory testing undertaken during the current and previous investigations, the fill is generally of low CBR values typically between 2% and 3%, is susceptible to shrink and swell ground movements with swell values of up to 3% and is non to moderately saline.

Below the fill is natural soil, comprising alluvial clay underlain by residual clay. Natural clay is noted to generally consist of medium to high plasticity clay and silty clay, and in a stiff to very stiff condition which grades to hard with depth. Although soft or loose soil layers were not encountered during the investigation, they are common within alluvial soil profiles and should be anticipated within this site. Some of the soils encountered pose high instability (high shrink-swell index values and highly sodic), slight to moderate salinity and moderate aggressivity.

Based on the previous investigation DP Geo 2022, 30 boreholes were drilled with bedrock encountered at depths of between 3.1 m to 6.0 m along the western boundary, dipping to between 6.2 m to 8.1 m within the central and eastern portions of the site. The rock profile generally comprises moderately to highly weathered very low to low strength siltstone within the upper 3 m of bedrock before grading to fresh, medium then high strength siltstone and laminite (interbedded and interlaminated siltstone and sandstone).

Groundwater monitoring at BH6, BH8 and BH20 indicates groundwater at depths of between 4.0 m and 5.7 m (RL48.4 m and RL49.5 m AHD) below existing ground levels and within the underlying natural clay. It should be noted that groundwater levels are transient and may fluctuate over time in response to climatic variations or anthropogenic influences.

From the descriptions of the various soil and rock encountered within the site, during the previous and the current investigations, the geotechnical model can be considered to consist of four units and a summary of the depths to each unit is presented in Table 7 below.

Table 7: Summary of Geotechnical Model

Location	Surface RL (m AHD)	Depth of Fill /Top of Natural Soils)		Top of Very Low Strength Rock		Top of Low and Medium Strength Rock	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
DP Geo 2022							
BH1	55.9	1.5	54.4	6.0	49.9	8.2	47.7
BH2	55.1	1.0	54.1	5.3	49.8	-	-
BH3	54.6	1.8	52.8	5.8	48.8	-	-

Location	Surface RL (m AHD)	Depth of Fill /Top of Natural Soils)		Top of Very Low Strength Rock		Top of Low and Medium Strength Rock	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
BH4	54.3	2.5	51.8	6.5	47.8	-	-
BH5	53.8	1.0	52.8	8.1	45.7	-	-
BH6	53.5	1.0	52.5	6.5	47.0	8.9	44.6
BH7	55.4	1.4	54.0	3.3	52.1	-	-
BH8	54.5	1.0	53.5	7.5	47.0	9.4	45.1
BH9	54.2	0.8	53.4	8.6	45.6	-	-
BH10	53.9	1.0	52.9	6.5	47.4	11.1	42.8
BH11	53.5	1.0	52.5	6.8	46.7	-	-
BH12	55.5	0.4	55.1	3.8	51.7	6.9	48.6
BH13	54.5	1.0	53.5	7.4	47.1	-	-
BH14	54.0	2.2	51.8	6.7	47.3	-	-
BH15	53.7	1.2	52.5	8.1	45.6	-	-
BH16	53.3	0.4	52.9	6.8	46.5	-	-
BH17	53.2	3.0	50.2	6.2	47.0	8.6	44.6
BH18	55.2	0.9	54.3	3.8	51.4	-	-
BH19	54.3	0.6	53.7	8.0	46.3	-	-
BH20	53.7	0.8	52.9	6.0	47.7	8.75	45.0
BH21	53.4	2.3	51.1	7.1	46.3	-	-
BH22	52.8	1.3	51.5	7.0	45.8	-	-
BH23	54.3	1.2	53.1	5.0	49.3	-	-
BH24	53.5	2.5	51.0	7.0	46.5	-	-
BH25	53.1	1.3	51.8	7.5	45.6	8.6	44.6
BH26	52.8	2.5	50.3	7.5	45.3	-	-
BH27	53.2	2.5	50.7	7.0	46.2	-	-
BH28	52.9	1.8	51.1	6.1	46.8	-	-
BH29	53.4	2.3	51.1	9.1	44.3	-	-
BH30	53.1	2.1	51.0	7.9	45.2	-	-
TP31	56.0	0.2	55.8	-	-	-	-
TP32	54.5	>1.5	<53.0	-	-	-	-

Location	Surface RL (m AHD)	Depth of Fill /Top of Natural Soils)		Top of Very Low Strength Rock		Top of Low and Medium Strength Rock	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
TP33	53.5	0.5	53.0	-	-	-	-
TP34	55.9	0.1	55.8	-	-	-	-
TP35	53.4	>1.7	<51.7	-	-	-	-
TP36	53.7	>1.5	<52.2	-	-	-	-
TP37	53.1	>1.5	<51.6	-	-	-	-
TP38	55.3	0.4	54.9	-	-	-	-
TP39	53.3	1.2	52.1	-	-	-	-
TP40	53.2	>1.5	<51.7	-	-	-	-
DP Env 2023a							
TP1	55.7	0.3	55.4	-	-	-	-
TP2	54.5	1.6	52.9	-	-	-	-
TP3	53.8	>1.6	<52.2	-	-	-	-
TP4	53.4	0.9	52.5	-	-	-	-
TP5	55.4	1.4	54.0	-	-	-	-
TP6	54.2	1.9	52.3	-	-	-	-
TP7	53.5	0.8	52.7	-	-	-	-
TP8	54.7	1.6	53.1	-	-	-	-
TP9	54.2	0.8	53.4	-	-	-	-
TP10	53.5	1.3	52.2	-	-	-	-
TP11	53.2	0.4	52.8	-	-	-	-
TP12	55.2	0.3	54.9	-	-	-	-
TP13	54.1	>2.1	<52.0	-	-	-	-
TP14	53.7	>1.3	<52.4	-	-	-	-
TP15	53.3	>1.7	<51.6	-	-	-	-
TP16	53.1	1.6	51.5	-	-	-	-
TP17	55.1	0.8	54.3	-	-	-	-
TP18	53.9	1.2	52.7	-	-	-	-
TP19	53.5	1.6	51.9	-	-	-	-
TP20	53.1	1.3	51.8	-	-	-	-

Location	Surface RL (m AHD)	Depth of Fill /Top of Natural Soils)		Top of Very Low Strength Rock		Top of Low and Medium Strength Rock	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
TP21	52.9	1.8	51.1	-	-	-	-
TP22	54.7	0.3	54.4	-	-	-	-
TP23	53.9	0.6	53.3	-	-	-	-
TP24	53.3	1.4	51.9	-	-	-	-
TP25	53.1	2.1	51.0	-	-	-	-
TP26	53.9	0.4	53.5	-	-	-	-
TP27	53.5	1.8	51.7	-	-	-	-
TP28	53.3	1.6	51.7	-	-	-	-
TP29	53.2	0.4	52.8	-	-	-	-
TP30	53.1	0.3	52.8	-	-	-	-
TP31	53.2	0.3	52.9	-	-	-	-
TP32	53.4	2.1	51.3	-	-	-	-
TP33	53.0	1.1	51.9	-	-	-	-
TP33A	53.2	1.8	51.4	-	-	-	-
TP34	53.3	1.2	52.1	-	-	-	-
TP35	53.2	1.1	52.1	-	-	-	-
TP36	54.4	1.3	53.1	-	-	-	-
DP Env 2023b							
TP101	55.1	1.8	53.3	-	-	-	-
TP102	54.0	>3.4	<50.6	-	-	-	-
TP103	53.6	>3.3	<50.3	-	-	-	-
TP104	53.3	0.9	52.4	-	-	-	-
TP105	53.3	1.3	52.0	-	-	-	-
TP106	53.4	2.3	51.1	-	-	-	-
TP107	54.5	2.1	52.4	-	-	-	-
TP108	55.1	1.5	53.6	-	-	-	-
TP109	54.6	>3.0	<51.6	-	-	-	-
TP110	53.6	>3.0	<50.6	-	-	-	-
TP111	53.0	1.8	51.2	-	-	-	-

Location	Surface RL (m AHD)	Depth of Fill /Top of Natural Soils)		Top of Very Low Strength Rock		Top of Low and Medium Strength Rock	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
TP112	53.5	1.9	51.6	-	-	-	-
TP113	53.1	2.9	50.2	-	-	-	-
Current Investigation							
TP201	55.7	0.2	55.5	-	-	-	-
TP202	55.8	0.3	55.5	-	-	-	-
TP203	55.7	0.3	55.4	-	-	-	-
TP204	55.5	0.1	55.4	-	-	-	-
TP205	55.4	0.2	55.2	-	-	-	-
TP206	55.2	0.7	54.5	-	-	-	-
TP207	58.2	>2.6	<55.6	-	-	-	-
TP208	57.0	>3.0	<54.0	-	-	-	-
TP209	55.1	>3.0	<52.1	-	-	-	-
TP210	55.2	3.2	52.0	-	-	-	-
TP211	54.4	1.4	53.0	-	-	-	-
TP212	54.1	2.4	51.7	-	-	-	-
TP213	54.7	0.9	53.8	-	-	-	-
TP214	54.1	2.7	51.4	-	-	-	-
TP215	54.8	1.0	53.8	-	-	-	-
TP216	54.2	2.7	51.5	-	-	-	-
TP217	53.8	2.4	51.5	-	-	-	-
TP218	55.1	1.2	53.9	-	-	-	-
TP219	54.4	2.0	52.4	-	-	-	-
TP220	54.1	0.4	53.7	-	-	-	-
TP221	55.1	1.2	53.9	-	-	-	-
TP222	54.5	2.3	52.2	-	-	-	-
TP223	54.2	3.3	50.9	-	-	-	-
TP224	55.2	0.7	54.5	-	-	-	-
TP225	54.6	2.4	52.2	-	-	-	-
TP226	54.6	>1.2	<53.4	-	-	-	-

Location	Surface RL (m AHD)	Depth of Fill /Top of Natural Soils)		Top of Very Low Strength Rock		Top of Low and Medium Strength Rock	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
TP227	53.7	2.0	51.7	-	-	-	-
TP228	53.5	1.4	52.1	-	-	-	-
TP229	55.4	>2.8	<52.6	-	-	-	-
TP230	54.0	>3.0	<51.0	-	-	-	-
TP231	53.5	2.9	50.6	-	-	-	-
TP232	51.6	1.2	50.4	-	-	-	-
TP233	52.7	2.1	50.6	-	-	-	-
TP234	53.2	2.0	51.2	-	-	-	-
TP235	52.8	2.1	50.7	-	-	-	-
TP236	53.2	2.3	50.9	-	-	-	-
TP237	53.2	2.6	50.6	-	-	-	-
TP238	52.8	1.9	50.9	-	-	-	-
TP239	53.0	2.0	51.0	-	-	-	-
TP240	53.1	2.2	50.9	-	-	-	-
TP241	53.5	2.5	51.0	-	-	-	-
TP242	53.3	2.0	51.3	-	-	-	-
TP243	53.0	1.7	51.3	-	-	-	-
TP244	53.1	2.3	50.8	-	-	-	-
TP245	53.3	2.0	51.3	-	-	-	-
TP246	53.6	2.0	51.6	-	-	-	-
TP247	53.2	2.3	50.9	-	-	-	-
TP248	53.3	1.8	51.5	-	-	-	-
TP249	53.9	2.4	51.5	-	-	-	-
TP250	53.8	2.3	51.5	-	-	-	-
TP251	53.6	1.8	51.8	-	-	-	-
TP252	53.3	2.3	51.0	-	-	-	-
TP253	53.4	1.9	51.5	-	-	-	-
TP254	54.8	>2.8	<52.0	-	-	-	-
CPT301	54.5	1.5	53.0	-	-	-	-

Location	Surface RL (m AHD)	Depth of Fill /Top of Natural Soils)		Top of Very Low Strength Rock		Top of Low and Medium Strength Rock	
		Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)	Depth (m)	RL (m AHD)
CPT302	54.9	0.9	54.0	-	-	-	-
CPT303	55.4	1.4	54.0	-	-	-	-
CPT304	55.4	1.2	54.2	-	-	-	-
CPT305	53.5	3.2	50.3	-	-	-	-
CPT306	53.9	2.8	51.1	-	-	-	-
CPT307	54.2	2.7	51.5	-	-	-	-
CPT308	54.5	1.3	53.2	-	-	-	-
CPT309	54.7	2.4	52.3	-	-	-	-
CPT310	54.3	2.2	52.1	-	-	-	-
CPT311	53.8	1.6	52.2	-	-	-	-
CPT312	53.6	2.7	50.9	-	-	-	-
CPT313	53.9	2.7	51.2	-	-	-	-
CPT314	53.3	2.3	51.0	-	-	-	-
CPT315	53.2	2.1	51.1	-	-	-	-
CPT316	53.2	2.4	50.8	-	-	-	-
CPT217	53.2	2.1	51.1	-	-	-	-
CPT318	53.5	2.2	51.3	-	-	-	-
CPT319	53.4	2.3	51.1	-	-	-	-
CPT320	53.2	2.5	50.7	-	-	-	-
CPT321	52.9	2.3	50.6	-	-	-	-
CPT322	57.8	2.0	55.8	6.9	50.9	-	-
CPT323	52.8	2.1	50.7	-	-	-	-
CPT324	53.0	1.8	51.2	-	-	-	-
CPT325	53.3	2.3	51.0	-	-	-	-

Notes: - = not encountered

8.2 Site Preparation and Earthworks

8.2.1 Excavation Conditions

Excavation to depths of up to 0.5 m for general bulk earthworks and to a further depth of up to 1.5 m, for detailed excavations such as service trenches are anticipated to be undertaken within fill and natural clay soils, which should be achievable using conventional earthmoving equipment.

All excavated materials will need to be disposed of in accordance with current EPA policies. Under the Waste Avoidance and Resource Recovery Act (NSW EPA, 2001 – refer to latest amendment 2020) a waste/fill receiving site must be satisfied that materials received meet the environmental criteria for proposed land use. This includes fill and virgin excavated natural materials (VENM), such as may be removed from site. The type and extent of testing undertaken will depend on the final use or destination of the spoil, and requirements of the receiving site.

8.2.2 Earthworks

During the current investigation, unsuitable fill was encountered in the vicinity of test pits TP208 to TP210, TP229 to TP232, and TP254, corresponding to the fill mound located along the northern site boundary. This area is understood to be the proposed location of an internal access road and potentially service trenches. Prior to the construction of any infrastructure in this area, it is recommended that rectification of the unsuitable fill be undertaken in the early stages of construction. Rectification will require assessment of the depth and lateral extent of the unsuitable fill, followed by the provision of additional geotechnical advice based on the findings of this assessment.

In the remainder of the site, surficial soils are likely to be variable in moisture content and density and will require moisture conditioning and compaction prior to commencing site works. Moisture conditioning will require drying in hot and sunny weather, tyning and blending with other drier material (e.g. weathered rock), or tyning and wetting with water cart application. It is recommended that the subgrade be protected by a layer of rockfill to provide a more trafficable surface during construction. Furthermore, adequate drainage including sufficient site cross-falls will need to be installed to protect the fill platform.

Where unsuitable material requires rectification or site surface levels are to be lowered or raised, such as for areas of cut or fill, the following measures are recommended:

- For areas requiring excavation or removal of unsuitable fill, commence bulk excavation/stripping of the site, stockpile any suitable excavated material for later use as general fill, subject to contamination considerations. For any areas requiring the placement of engineered fill, the areas should be suitably stripped of deleterious material. The stripped/excavated surfaces should be free of all existing topsoil and vegetation before being inspected by a geotechnical consultant. Subject to the required settlement tolerances, the existing fill may be required to be stripped to expose natural clay.
- Proof roll all exposed surfaces using a minimum 12 tonne smooth drum roller in non-vibration mode. The surface should be rolled a minimum of six times with the last two passes observed by an experienced geotechnical engineer to detect any ‘soft spots’.
- For any areas identified to be soft or wet, such as within the areas of prior water ponding, the area is to be reworked to 500 mm depth and moisture conditioned and then compacted to

a dry density ratio of between 98% and 102% relative to Standard compaction with moisture contents maintained within 2% of Standard optimum moisture content. Any heaving materials identified during proof rolling should be treated as directed by the geotechnical engineer.

- For areas of observed rutting, the areas are to be stripped to 500 mm below the observed ruts and the exposed surfaces are to be moisture conditioned prior to the replacement of fill.
- Fill should be placed in layers of 250 mm maximum (loose) thickness and compacted to a dry density ratio between 98% and 102% relative to Standard compaction with moisture contents maintained within 2% of Standard optimum moisture content. New fill to form pavement subgrades will be required to be compacted to a minimum dry density ratio of 100% relative to Standard compaction within the upper 0.3 m of the design subgrade surface.
- Promptly cover any exposed clay at subgrade level with a minimum 150 mm of select granular fill (minimum CBR 15%) to reduce potential wetting and drying and trafficability problems.
- Density testing of the engineered fill should be carried out in accordance with AS3798 Guidelines for Earthworks for Commercial and Residential Developments to a Level 1 standard.

8.2.3 Site Maintenance and Drainage

Surface drainage measures must be included within all earthworks operations carried out on site to minimise ponding and promote drying out of surface materials.

Surface and subsurface drainage for the building and pavements should also be incorporated into the design.

Care should be taken to avoid external influences on the soil moisture regime to prevent erosion and softening of the exposed soils. Detailing of surface and subsurface drainage should be aimed at avoiding substantial wetting of the soils beneath building and pavement areas. Surface water should be directed away from building or hardstand areas and the upper section of services trenches should be backfilled with compacted clay soil to avoid the trench acting as an inlet drain.

Site trafficability during dry weather should pose no problems, however inclement weather may cause clayey soils to soften and become unsuitable for construction traffic until the site conditions dry. In areas where high levels of construction traffic are expected, a temporary hardstand comprising crushed rock could be constructed to aid in trafficability during wet weather.

8.2.4 Pavements and Ground Bearing Slabs

Based on the highly reactive clays on-site, pavements and ground slabs should be articulated to allow for differential movement together with a drainage system to limit the potential for shrink-swell movements that could potentially damage pavements.

As part of the previous and current investigation, laboratory testing for CBR and compaction was carried out on representative bulk samples of natural clay and clay fill subgrades recovered from the estimated subgrade level of the proposed subgrades. Experience in the area and the results of laboratory testing suggest a CBR value of 1.5% is appropriate for the natural clay subgrade and a CBR value of 3% is appropriate for the existing fill. If further fill materials are to be imported and

placed on site, the CBR value would be dependent on the material type, and it is recommended that additional CBR testing is carried out prior to importation.

The design CBR values given above depend on the provision of adequate surface and subsoil drainage to maintain the subgrade as close to OMC as possible. Subsoil drainage should be installed to not less than 500 mm depth below subgrade level adjacent to the high side of pavements and floor slabs and in any adjacent garden areas. Preparation of subgrade surfaces should be such that adequate cross-falls for the surface drainage purposes are achievable across the final pavement. Further comments on pavement drainage are provided in Section 8.2.3.

Pavements should be placed on a subgrade prepared in accordance with the recommendations provided in Section 8.2.2.

8.2.5 **Floor Slabs**

Where buildings are to be designed with a slab on-grade or a suspended floor slab, site preparation measures in accordance with Section 8.2.2 should be adopted. Building load related settlements in the order of 2 mm to 5 mm are estimated for slab-on-ground structures with an applied pressure of 20 kPa to 50 kPa founded on this platform.

Floor slabs should be cast independently of pads or pile and strip footings and incorporate control joints to allow for differential movements. Edge protection, such as deepened stiffening edge beams in conjunction with surface paving should also be included to minimise the effects of reactivity movements due to the high/moderate reactivity of the site clays.

Floor slabs should be placed on a subgrade prepared in accordance with the recommendations provided in Section 8.2.2.

8.3 **Excavation Support**

8.3.1 **Batter Slopes**

Excavation for the proposed building and pavement areas is likely to be predominantly within fill and clays.

The soils exposed in cuts will not be able to stand vertically without support in the longer term. Where space permits, it will be possible to batter the sides of the excavation and in these conditions, it is suggested to allow for temporary side slopes of 1H:1V in the stiff or stronger clays up to a maximum depth of 3 m. Deeper excavations would require site specific geotechnical assessment.

A maximum batter slope of 3H:1V is recommended for permanent slopes in the clays to allow for proper vegetation and maintenance, provided that the slopes are protected against surface erosion and localised slumping. The batter slopes recommended above are appropriate provided there are no surcharge loads from structures near the top of the batters.

All battered slopes will need to have appropriate drainage measures installed to limit the potential for slopes to be adversely affected by water runoff (e.g. erosion).

8.3.2 Retaining/Shoring Walls

Where there is insufficient room to batter the sides of the excavations, or due to preference or the proposed design, the construction of retaining walls will be required for long term support. Gravity or cantilevered retaining walls will generally be suitable where some lateral movement can be tolerated at the crest of the wall.

Gravity or cantilevered retaining walls up to 5 m high, for which some deflection is acceptable, may be designed on the basis of a triangular earth pressure distribution using a bulk unit weight of 20 kN/m^3 for the retained material, and an active earth pressure coefficient (K_a) of 0.35 (level backfill conditions). In situations where the wall movements must be minimised or reduced, an 'at rest' earth pressure coefficient (K_0) of 0.55 should be used.

In cases involving multiple rows of anchors or props (i.e. two or more), lateral earth pressures may be modelled using a trapezoidal pressure distribution. For these scenarios, the following design pressures are considered appropriate, where H is the height (in metres) of soil and very low to low strength rock to be retained:

- 6H kPa, where some lateral movement is allowed; and
- 8H kPa, where lateral movements need to be limited (e.g. next to buildings and services).

In each case the maximum pressure generally acts over the central 60% of the wall, reducing to zero at the top and base of the wall.

All retaining walls should be designed to accommodate additional surcharge loads, including those arising from sloping backfill, vehicular traffic, construction equipment, and compaction activities. Furthermore, shoring systems must be designed for full hydrostatic pressure unless effective drainage can be provided to relieve groundwater pressures behind impermeable walls.

8.4 Footings

8.4.1 Bearing Pressures

The results of previous and current investigations within the site have shown that the site is underlain by controlled fill and natural clay and then weathered bedrock. Accordingly, it is anticipated that piles socketed into bedrock will likely be required to support the multistorey structural loads associated with the proposed data centre buildings and generator yard, while settlement tolerant, lightly loaded infrastructure may be supported on shallow footings within the natural clays or controlled fill.

The parameters listed in Table 8 are suggested for footing design.

Table 8: Suggested Footing Design Parameters

Material	End Bearing		Shaft Adhesion	
	Allowable	Ultimate	Allowable	Ultimate
Uncontrolled/Unsuitable Fill	Not recommended			
Controlled Fill	150	300	10	20
Natural Clay	150	400	15	25
Very Low Strength Rock	1,000	3,000	100	150
Low & Medium Strength Rock	2,000	10,000	200	450

Notes: The values listed in Table 8 are subject to confirmation during construction.
Natural soil to be at least stiff consistency.
Values for Unit 1, assume all fill is controlled, if uncontrolled fill is encountered, the uncontrolled fill should be removed and replaced with controlled fill.
Values for Unit 3 assume a minimum 0.5 m penetration of the footing into rock. Shaft adhesion for piles only.

To confirm the appropriateness of the adopted design footing parameters, it is recommended that all footing excavations are subjected to geotechnical inspection and dynamic cone penetrometer testing (DCP, where applicable) during construction to verify that the listed bearing pressures are available and have been achieved.

Shallow footings founding near excavations (lift wells/pits, service trenches or similar) must have all loads transferred to below an influence line inclined upwards at 45 degrees commencing from the lowest and closest side of the excavation or trench base. Pad footings can be deepened to accommodate this load transfer or alternatively pile footings may be used.

Local variations in rock strength and depth may occur across the site. All pile or footing excavations in weathered rock should be inspected by a geotechnical engineer or engineering geologist and approved prior to concreting to confirm reduced pressures are not warranted due to extensively weathered or jointed zones.

Footings designed in accordance with the allowable parameters listed in Table 7 can be considered to undergo elastic settlements in the order of 1% of the footing width upon application of the working load. In addition to elastic settlements, creep settlements can be experienced in controlled fills with total depths of more than about 5 m. Footings should preferably be founded on consistent materials to help control differential movements due to settlement and shrink-swell movements.

8.4.2 Site Classification

Although the proposed development is for a 'heavily loaded' data centre development, it is important to note that the results of the Atterberg limits and shrink swell index tests have indicated a high susceptibility of the natural clays to undergo considerable shrink and swell movement as a result of changes in ground moisture contents (i.e. seasonal, or otherwise).

Although the site would be classified as Class P due to the presence of fill, based on the DP Geo 2022 results, the plasticity and thus reactivity of the soils at the site are generally considered representative of Class H1 conditions when assessed in accordance with AS2870-2011.

8.5 **Salinity**

The NSW Salinity Potential map for Western Sydney indicates a moderate salinity potential category is applicable to the site and its immediate surrounds. The laboratory test results on samples from the site generally indicate a range of salinity values from non-saline to moderately saline., with one sample indicating very saline soil conditions

Soil salinity is assessed with respect to electrical conductivity after conversion of the result to EC_e (electrical conductivity of a saturated extract) by multiplication with a factor dependent on soil texture. Once converted, the EC_e value is compared to the guideline ranges listed in Table 9.

Table 9: Soil Salinity Classification

Class	EC_e (dS/m)	Implication
Non-Saline	<2	Salinity effects are mostly negligible
Slightly Saline	2 – 4	Yields of sensitive crops effected
Moderately Saline	4 – 8	Yields of many crops effected
Very Saline	8 – 16	Only tolerant crops yield satisfactorily
Highly Saline	>16	Only a few very tolerant crops yield satisfactorily

During the current site assessment, a total of 29 samples from 12 test pits underwent chemical testing in an attempt to 'ground truth' the relevance of the mapped conditions. The results of the testing (refer Section 6.3) show that non-saline to very saline soil conditions were generally encountered.

During previous site assessments, a total of 8 samples from 4 soil profiles (including natural clays) were underwent similar chemical testing. The results of the testing (Section 5.1.4) show that non-saline to moderately saline soil conditions were generally encountered.

Assuming the laboratory test results are representative of the general site conditions, the electrical conductivity values obtained, when adjusted for a soil textural classification multiplier representing a medium clay, suggest a highly variable range from non-saline to very saline conditions apply to this site.

For management of salinity risk, strategies are only required for salinity levels of moderately saline and higher. The assessment has shown that parts of the site are within these categories. Construction and excavation within the areas of identified higher saline soils, however, will necessitate the preparation of a salinity management plan, which will need to consider all necessary earthworks yet to be completed as part of the proposed development.

Control measures may include the use of higher strength concrete in footings and buried services/pipes, the potential lining of service trenches and controls on the order of excavation and replacement of site soils during earthworks.

8.6 **Seismic Design**

In accordance with Part 4 of the Structural design actions Standard, AS1170.4 – 2024 the site is assessed to have a Site Sub-Soil Class of 'Ce''.

8.7 **Aggressivity**

In accordance with AS2159-2009, the results of the chemical laboratory from previous investigations show that the soils are non-aggressive to mildly aggressive to concrete and non-aggressive to steel with reference to AS2159.

9. References

The following Australian Standards were referred to in the preparation of this geotechnical investigation report. Where applicable, all design and construction works should be carried out in accordance with the requirements of these standards:

- AS 1170.4–2004: Structural design actions – Part 4: Earthquake actions in Australia
- AS 2159–2009: Piling – Design and installation.
- AS 2870–2011: Residential slabs and footings.
- AS 3798–2007: Guidelines on earthworks for commercial and residential developments.

10. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at 78 Lockwood Road, Erskine Park in general accordance with DP's proposal 207476.10.P.001.Rev0 dated 14 May 2025 and acceptance received from STACK Infrastructure Australia (78 Lockwood Road) Pty Ltd atf the STACK Infrastructure Australia (78 Lockwood Road) Unit Trust (STACK). The work was carried out under Douglas' Engagement Terms. This report is provided for the exclusive use of STACK and for only for the purposes as described in the report. It should not be used by or relied upon for other projects or purposed on the same or other site or by a third party. Any party relying upon this report beyond its exclusive use and purpose as stated above, and without the express of written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and / or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The scope of work for this investigation/report did not include the assessment of surface or sub-surface materials or groundwater for contaminants, within or adjacent to the site. Should evidence of fill of unknown origin be noted in the report, and in particular the presence of building demolition materials, it should be recognised that there may be some risk that such fill may contain contaminants and hazardous building materials.

The assessment of atypical safety hazards arising from this advice is restricted to the geotechnical components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Appendix A

About This Report

About this Report

November 2023

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

continued next page

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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Appendix B

Drawings





LOCALITY MAP

Notes:
1. Drawing projection GDA2020 / MGA zone 56
2. Aerial imagery sourced from metromap.com.
3. Boundaries are approximate only.

Legend

Site Boundary

Previous Test Locations

Borehole Location (DP Geo 2022)

Test Pit Location (DP Geo 2021)

Test Pit Location (DP Env 2023)

Monitoring Well Location

0 25 50 75 100 m

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Stack Infrastructure Australia Pty Ltd	TITLE:	**Site Location Plan with Previous Test Locations**
OFFICE:	Sydney	DRAWN BY:	AT		**Proposed Data Centre**
SCALE:	1:2000 @ A3	DATE:	23.07.2025		**78 Lockwood Road, Erskine Park**

N

PROJECT No:	207476.10
DRAWING No:	1
REVISION:	0





LOCALITY MAP

Notes:
1. Drawing projection GDA2020 / MGA zone 56
2. Aerial imagery sourced from metromap.com.
3. Boundaries are approximate only.

Legend

Site Boundary

Current Investigation

Test Pit Locations

CPT Locations

0 25 50 75 100 m

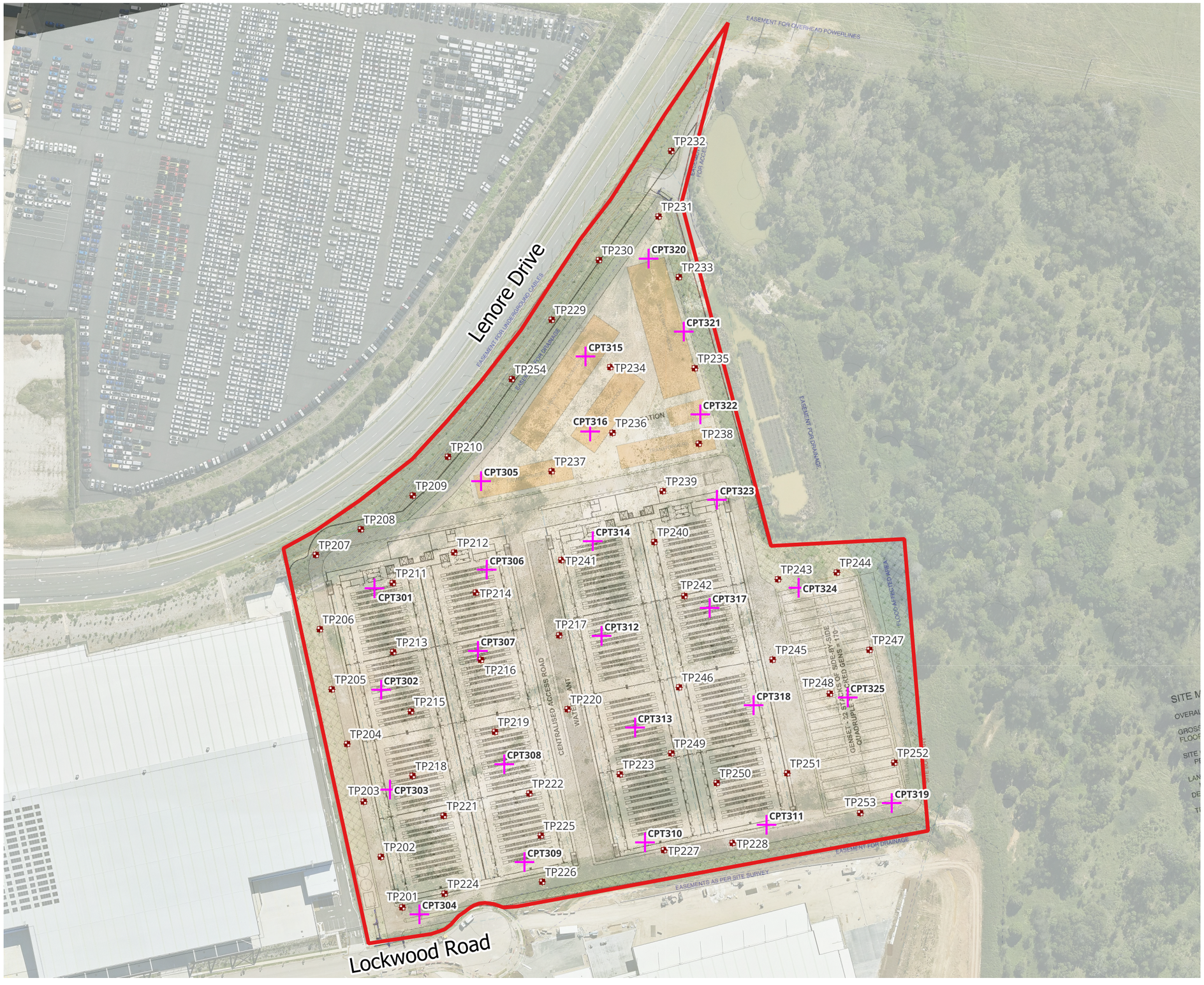
Douglas Partners
Geotechnics / Environment / Groundwater

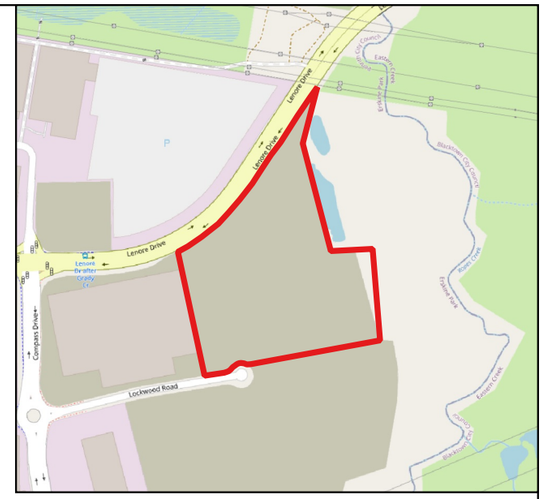
CLIENT:	STACK Infrastructure Australia Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	AT
SCALE:	1:2000 @ A3	DATE:	07.07.2025

TITLE: **Site Location Plan with Current Test Locations**
Proposed Data Centre
78 Lockwood Road, Erskine Park

N

PROJECT No:	207476.06
DRAWING No:	2
REVISION:	0





LOCALITY MAP

Notes:
1. Drawing projection GDA2020 / MGA zone 56
2. Aerial imagery sourced from metromap.com.
3. Boundaries are approximate only.

Legend

Site Boundary

Current Investigation

Test Pit Locations

CPT Locations

0 25 50 75 100 m

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	STACK Infrastructure Australia Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	AT
SCALE:	1:2000 @ A3	DATE:	07.07.2025

TITLE: **Site Location Plan with Current Test Locations**
Proposed Data Centre
78 Lockwood Road, Erskine Park

PROJECT No:	207476.06
DRAWING No:	3
REVISION:	0

Appendix C

Current Field Work Results

Terminology, Symbols and Abbreviations

November 2023

Introduction to Terminology, Symbols and Abbreviations

Douglas Partners' reports, investigation logs, and other correspondence may use terminology which has quantitative or qualitative connotations. To remove ambiguity or uncertainty surrounding the use of such terms, the following sets of notes pages may be attached Douglas Partners' reports, depending on the work performed and conditions encountered:

- Soil Descriptions;
- Rock Descriptions; and
- Sampling, insitu testing, and drilling methodologies

In addition to these pages, the following notes generally apply to most documents.

Abbreviation Codes

Site conditions may also be presented in a number of different formats, such as investigation logs, field mapping, or as a written summary. In some of these formats textual or symbolic terminology may be presented using textual abbreviation codes or graphic symbols, and, where commonly used, these are listed alongside the terminology definition. For ease of identification in these note pages, textual codes are presented in these notes in the following style `XW`. Code usage conforms with the following guidelines:

- Textual codes are case insensitive, although herein they are generally presented in upper case; and
- Textual codes are contextual (i.e. the same or similar combinations of characters may be used in different contexts with different meanings (for example `PL` is used for plastic limit in the context of soil moisture condition, as well as in `PL(A)` for point load test result in the testing results column)).

Data Integrity Codes

Subsurface investigation data recorded by Douglas Partners is generally managed in a highly structured database environment, where records "span" between a top and bottom depth interval. Depth interval "gaps" between records are considered to introduce ambiguity, and, where appropriate, our practice guidelines may require contiguous data sets. Recording meaningful data is not always appropriate (for example assigning a "strength" to a concrete pavement) and the following codes may be used to maintain contiguity in such circumstances.

Term	Description	Abbreviation Code
Core loss	No core recovery	`KL`
Unknown	Information was not available to allow classification of the property. For example, when auguring in loose, saturated sand auger cuttings may not be returned.	`UK`
No data	Information required to allow classification of the property was not available. For example, if drilling is commenced from the base of a hole predrilled by others	`ND`
Not Applicable	Derivation of the properties not appropriate or beyond the scope of the investigation. For example, providing a description of the strength of a concrete pavement	`NA`

Graphic Symbols

Douglas Partners' logs contain a "graphic" column which provides a pictorial representation of the basic composition of the material. The symbols used are directly representing the material name stated in the adjacent "Description of Strata" column, and as such no specific graphic symbology legend has been provided in these notes.

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Soil Descriptions

Terminology
Symbols
Abbreviations

November 2023

Introduction

All materials which are not considered to be "in-situ rock" are described in general accordance with the soil description model of AS 1726-2017 Part 6.1.3, and can be broken down into the following description structure:



The "classification" comprises a two character "group symbol" providing a general summary of dominant soil characteristics. The "name" summarises the particle sizes within the soil which most influence its behaviour. The detailed description presents more information about composition, condition, structure, and origin of the soil.

Classification, naming and description of soils require the relative proportion of particles of different sizes within the whole soil mixture to be considered.

Particle size designation and Behaviour Model

Solid particles within a soil are differentiated on the basis of size.

The engineering behaviour properties of a soil can subsequently be modelled to be either "fine grained" (also known as "cohesive" behaviour) or "coarse grained" ("non cohesive" behaviour), depending on the relative proportion of fine or coarse fractions in the soil mixture.

Particle Size Designation	Particle Size (mm)	Behaviour Model	
		Behaviour	Approximate Dry Mass
Boulder	>200	Excluded from particle behaviour model as "oversize"	
Cobble	63 - 200		
Gravel[1]	2.36 - 63	Coarse	>65%
Sand[1]	0.075 - 2.36		
Silt	0.002 - 0.075	Fine	>35%
Clay	<0.002		

[1] – refer grain size subdivision descriptions below

The behaviour model boundaries defined above are not precise, and the material behaviour should be assumed from the name given to the material (which considers the particle fraction which dominates the behaviour, refer "component proportions" below), rather than strict observance of the proportions of particle sizes. For example, if a material is named a "Sandy CLAY", this is indicative that the material exhibits fine grained behaviour, even if the dry mass of coarse grained material may exceed 65%.

Component proportions

The relative proportion of the dry mass of each particle size fraction is assessed to be a "primary", "secondary", or "minor" component of the soil mixture, depending on its influence over the soil behaviour.

Component Proportion Designation	Definition[1]	Relative Proportion	
		In Fine Grained Soil	In Coarse Grained Soil
Primary	The component (particle size designation, refer above) which dominates the engineering behaviour of the soil	The clay/silt component with the greater proportion	The sand/gravel component with the greater proportion
Secondary	Any component which is not the primary, but is significant to the engineering properties of the soil	Any component with greater than 30% proportion	Any granular component with greater than 30%; or Any fine component with greater than 12%
Minor[2]	Present in the soil, but not significant to its engineering properties	All other components	All other components

[1] As defined in AS1726-2017 6.1.4.4

[2] In the detailed material description, minor components are split into two further sub-categories. Refer "identification of minor components" below.

Composite Materials

In certain situations, a lithology description may describe more than one material, for example, collectively describing a layer of interbedded sand and clay. In such a scenario, the two materials would be described independently, with the names preceded or followed by a statement describing the arrangement by which the materials co-exist. For example, "INTERBEDDED Silty CLAY AND SAND".

Classification

The soil classification comprises a two character group symbol. The first character identifies the primary component. The second character identifies either the grading or presence of fines in a coarse grained soil, or the plasticity in a fine grained soil. Refer AS1726-2017 6.1.6 for further clarification.

Soil Name

For most soils, the name is derived with the primary component included as the noun (in upper case), preceded by any secondary components stated in an adjective form. In this way, the soil name also describes the general composition and indicates the dominant behaviour of the material.

Component [1]	Prominence in Soil Name
Primary	Noun (eg "CLAY")
Secondary	Adjective modifier (eg "Sandy")
Minor	No influence

[1] – for determination of component proportions, refer component proportions on previous page

For materials which cannot be disaggregated, or which are not comprised of rock or mineral fragments, the names "ORGANIC MATTER" or "ARTIFICIAL MATERIAL" may be used, in accordance with AS1726-2017 Table 14.

Commercial or colloquial names are not used for the soil name where a component derived name is possible (for example "Gravelly SAND" rather than "CRACKER DUST").

Materials of "fill" or "topsoil" origin are generally assigned a name derived from the primary/secondary component (where appropriate). In log descriptions this is preceded by uppercase "FILL" or "TOPSOIL". Origin uncertainty is indicated in the description by the characters (?), with the degree of uncertainty described (using the terms "probably" or "possibly" in the origin column, or at the end of the description).

Identification of minor components

Minor components are identified in the soil description immediately following the soil name. The minor component fraction is usually preceded with a term indicating the relative proportion of the component.

Minor Component Proportion Term	Relative Proportion	
	In Fine Grained Soil	In Coarse Grained Soil
With	All fractions: 15-30%	Clay/silt: 5-12% sand/gravel: 15-30%
Trace	All fractions: 0-15%	Clay/silt: 0-5% sand/gravel: 0-15%

The terms "with" and "trace" generally apply only to gravel or fine particle fractions. Where cobbles/boulders are encountered in minor proportions (generally less than about 12%) the term "occasional" may be used. This term describes the sporadic distribution of the material within the confines of the investigation excavation only, and there may be considerable variation in proportion over a wider area which is difficult to factually characterise due to the relative size of the particles and the investigation methods.

Soil Composition

Plasticity

Descriptive Term	Laboratory liquid limit range	
	Silt	Clay
Non-plastic materials	Not applicable	Not applicable
Low plasticity	≤50	≤35
Medium plasticity	Not applicable	>35 and ≤50
High plasticity	>50	>50

Note, Plasticity descriptions generally describe the plasticity behaviour of the whole of the fine grained soil, not individual fine grained fractions.

Grain Size

Type		Particle size (mm)
Gravel	Coarse	19 - 63
	Medium	6.7 - 19
	Fine	2.36 – 6.7
Sand	Coarse	0.6 - 2.36
	Medium	0.21 - 0.6
	Fine	0.075 - 0.21

Grading

Grading Term	Particle size (mm)
Well	A good representation of all particle sizes
Poorly	An excess or deficiency of particular sizes within the specified range
Uniformly	Essentially of one size
Gap	A deficiency of a particular size or size range within the total range

Note, AS1726-2017 provides terminology for additional attributes not listed here.

Soil Condition

Moisture

The moisture condition of soils is assessed relative to the plastic limit for fine grained soils, while for coarse grained soils it is assessed based on the appearance and feel of the material. The moisture condition of a material is considered to be independent of stratigraphy (although commonly these are related), and this data is presented in its own column on logs.

Applicability	Term	Tactile Assessment	Abbreviation code
Fine	Dry of plastic limit	Hard and friable or powdery	w<PL
	Near plastic limit	Can be moulded	w=PL
	Wet of plastic limit	Water residue remains on hands when handling	w>PL
	Near liquid limit	"oozes" when agitated	w=LL
	Wet of liquid limit	"oozes"	w>LL
Coarse	Dry	Non-cohesive and free running	D
	Moist	Feels cool, darkened in colour, particles may stick together	M
	Wet	Feels cool, darkened in colour, particles may stick together, free water forms when handling	W

The abbreviation code NDF, meaning "not-assessable due to drilling fluid use" may also be used.

Note, observations relating to free ground water or drilling fluids are provided independent of soil moisture condition.

Consistency/Density/Compaction/Cementation/Extremely Weathered Material

These concepts give an indication of how the material may respond to applied forces (when considered in conjunction with other attributes of the soil). This behaviour can vary independent of the composition of the material, and on logs these are described in an independent column and are generally mutually exclusive (i.e it is inappropriate to describe both consistency and compaction at the same time). The method by which the behaviour is described depends on the behaviour model and other characteristics of the soil as follows:

- In fine grained soils, the "consistency" describes the ease with which the soil can be remoulded, and is generally correlated against the materials undrained shear strength;
- In granular materials, the relative density describes how tightly packed the particles are, and is generally correlated against the density index;
- In anthropogenically modified materials, the compaction of the material is described qualitatively;
- In cemented soils (both natural and anthropogenic), the cemented "strength" is described qualitatively, relative to the difficulty with which the material is disaggregated; and
- In soils of extremely weathered material origin, the engineering behaviour may be governed by relic rock features, and expected behaviour needs to be assessed based the overall material description.

Quantitative engineering performance of these materials may be determined by laboratory testing or estimated by correlated field tests (for example penetration or shear vane testing). In some cases, performance may be assessed by tactile or other subjective methods, in which case investigation logs will show the estimated value enclosed in round brackets, for example (VS).

Consistency (fine grained soils)

Consistency Term	Tactile Assessment	Undrained Shear Strength (kPa)	Abbreviation Code
Very soft	Extrudes between fingers when squeezed	<12	VS
Soft	Mouldable with light finger pressure	>12 - ≤25	S
Firm	Mouldable with strong finger pressure	>25 - ≤50	F
Stiff	Cannot be moulded by fingers	>50 - ≤100	St
Very stiff	Indented by thumbnail	>100 - ≤200	VSt
Hard	Indented by thumbnail with difficulty	>200	H
Friable	Easily crumbled or broken into small pieces by hand	-	Fr

Relative Density (coarse grained soils)

Relative Density Term	Density Index	Abbreviation Code
Very loose	<15	VL
Loose	>15 - ≤35	L
Medium dense	>35 - ≤65	MD
Dense	>65 - ≤85	D
Very dense	>85	VD

Note, tactile assessment of relative density is difficult, and generally requires penetration testing, hence a tactile assessment guide is not provided.

Compaction (anthropogenically modified soil)

Compaction Term	Abbreviation Code
Well compacted	WC
Poorly compacted	PC
Moderately compacted	MC
Variably compacted	VC

Cementation (natural and anthropogenic)

Cementation Term	Abbreviation Code
Moderately cemented	MOD
Weakly cemented	WEK

Extremely Weathered Material

AS1726-2017 considers weathered material to be soil if the unconfined compressive strength is less than 0.6 MPa (i.e. less than very low strength rock). These materials may be identified as "extremely weathered material" in reports and by the abbreviation code XWM on log sheets. This identification is not correlated to any specific qualitative or quantitative behaviour, and the engineering properties of this material must therefore be assessed according to engineering principles with reference to any relic rock structure, fabric, or texture described in the description.

Soil Origin

Term	Description	Abbreviation Code
Residual	Derived from in-situ weathering of the underlying rock	RS
Extremely weathered material	Formed from in-situ weathering of geological formations. Has strength of less than 'very low' as per as1726 but retains the structure or fabric of the parent rock.	XWM
Alluvial	Deposited by streams and rivers	ALV
Estuarine	Deposited in coastal estuaries	EST
Marine	Deposited in a marine environment	MAR
Lacustrine	Deposited in freshwater lakes	LAC
Aeolian	Carried and deposited by wind	AEO
Colluvial	Soil and rock debris transported down slopes by gravity	COL
Slopewash	Thin layers of soil and rock debris gradually and slowly deposited by gravity and possibly water	SW
Topsoil	Mantle of surface soil, often with high levels of organic material	TOP
Fill	Any material which has been moved by man	FILL
Littoral	Deposited on the lake or seashore	LIT
Unidentifiable	Not able to be identified	UID

Cobbles and Boulders

The presence of particles considered to be "oversize" may be described using one of the following strategies:

- Oversize encountered in a minor proportion (when considered relative to the wider area) are noted in the soil description; or
- Where a significant proportion of oversize is encountered, the cobbles/boulders are described independent of the soil description, in a similar manner to composite soils (described above) but qualified with "MIXTURE OF".

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Rock Strength

Rock strength is defined by the unconfined compressive strength, and it refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects.

The Point Load Strength Index $I_{s(50)}$ is commonly used to provide an estimate of the rock strength and site specific correlations should be developed to allow UCS values to be determined. The point load strength test procedure is described by Australian Standard AS4133.4.1-2007. The terms used to describe rock strength are as follows:

Strength Term	Unconfined Compressive Strength (MPa)	Point Load Index[1] $I_{s(50)}$ MPa	Abbreviation Code
Very low	0.6 - 2	0.03 - 0.1	VL
Low	2 - 6	0.1 - 0.3	L
Medium	6 - 20	0.3 - 1.0	M
High	20 - 60	1 - 3	H
Very high	60 - 200	3 - 10	VH
Extremely high	>200	>10	EH

[1] Rock strength classification is based on UCS. The UCS to $I_{s(50)}$ ratio varies significantly for different rock types and specific ratios may be required for each site. The point load Index ranges shown above are as suggested in AS1726 and should not be relied upon without supporting evidence.

The following abbreviation codes are used for soil layers or seams of material "within rock" but for which the equivalent UCS strength is less than 0.6 MPa.

Scenario	Abbreviation Code
The material encountered has an equivalent UCS strength of less than 0.6 MPa, and therefore is considered to be soil (as per Note 1 of Table 20 of AS 1726-2017). The properties of the material encountered over this interval are described in the "Description of Strata" and soil properties columns.	SOIL
The material encountered has an equivalent UCS strength of less than 0.6 MPa, and therefore is considered to be soil (as per Note 1 of Table 20 of AS 1726-2017). The prominence of the material is such that it can be considered to be a seam (as defined in Table 22 of AS1726-2017) and the properties of the material are described in the defect column.	SEAM

Degree of Weathering

The degree of weathering of rock is classified as follows:

Weathering Term	Description	Abbreviation Code
Residual Soil[1]	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.	RS
Extremely weathered[1]	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible	XW
Highly weathered	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching or may be decreased due to deposition of weathering products in pores.	HW
Moderately weathered	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable but shows little or no change of strength from fresh rock.	MW
Slightly weathered	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.	SW
Fresh	No signs of decomposition or staining.	FR
Note: If HW and MW cannot be differentiated use DW (see below)		
Distinctly weathered	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathered products in pores.	DW

[1] The parent rock type, of which the residual/extremely weathered material is a derivative, will be stated in the description (where discernible).

Degree of Alteration

The degree of alteration of the rock material (physical or chemical changes caused by hot gasses or liquids at depth) is classified as follows:

Term	Description	Abbreviation Code
Extremely altered	Material is altered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.	XA
Highly altered	The whole of the rock material is discoloured, usually by staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is changed by alteration. Some primary minerals are altered to clay minerals. Porosity may be increased by leaching or may be decreased due to precipitation of secondary materials in pores.	HA
Moderately altered	The whole of the rock material is discoloured, usually by staining or bleaching to the extent that the colour of the original rock is not recognisable but shows little or no change of strength from fresh rock.	MA
Slightly altered	Rock is slightly discoloured but shows little or no change of strength from fresh rock	SA
Note: If HA and MA cannot be differentiated use DA (see below)		
Distinctly altered	Rock strength usually changed by alteration. The rock may be highly discoloured, usually by staining or bleaching. Porosity may be increased by leaching or may be decreased due to precipitation of secondary minerals in pores.	DA

Degree of Fracturing

The following descriptive classification apply to the spacing of natural occurring fractures in the rock mass. It includes bedding plane partings, joints and other defects, but excludes drilling breaks. These terms are generally not required on investigation logs where fracture spacing is presented as a histogram, and where used are presented in an unabbreviated format.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with occasional fragments
Fractured	Core lengths of 30-100 mm with occasional shorter and longer sections
Slightly Fractured	Core lengths of 300 mm or longer with occasional sections of 100-300 mm
Unbroken	Core contains very few fractures

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections > 100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or stronger. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e., drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

These terms may be used to describe the spacing of bedding partings in sedimentary rocks. Where used, these terms are generally presented in an unabbreviated format

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Defect Descriptions

Defect Type

Term	Abbreviation Code
Bedding plane	B
Infilled seam	IS
Cleavage	CV
Crushed zone	CZ
Decomposed seam	DS
Fault	F
Joint	JT
Lamination	LAM
Parting	P
Shear zone	SZ
Vein	VN
Drilling/handling break	DB , HB
Fracture	FC

Rock Defect Orientation

Term	Abbreviation Code
Horizontal	H
Vertical	V
Sub-horizontal	SH
Sub-vertical	SV

Rock Defect Coating

Term	Abbreviation Code
Clean	CN
Coating	CT
Healed	HE
Infilled	INF
Stained	SN
Tight	TI
Veneer	VNR

Rock Defect Infill

Term	Abbreviation Code
Calcite	CA
Carbonaceous	CBS
Clay	CLAY
Iron oxide	FE
Manganese	MN

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Rock Defect Shape/Planarity

Term	Abbreviation Code
Curved	CU
Irregular	IR
Planar	PR
Stepped	ST
Undulating	UN

Rock Defect Roughness

Term	Abbreviation Code
Polished	PO
Rough	RF
Slickensided	SL
Smooth	SM
Very rough	VR

Defect Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

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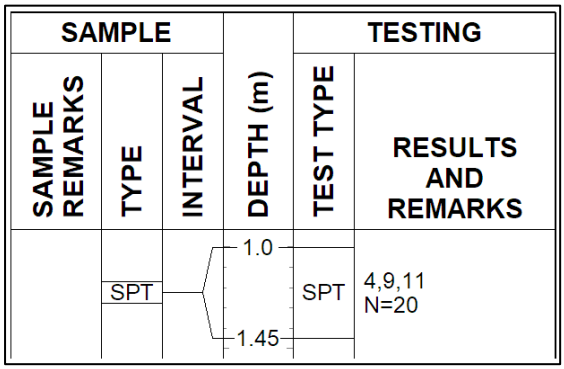
Sampling, Testing and Excavation Methodology

Terminology
Symbols
Abbreviations

November 2023

Sampling and Testing

A record of samples retained, and field testing performed is usually shown on a Douglas Partners' log with samples appearing to the left of a depth scale, and selected field and laboratory testing (including results, where relevant) appearing to the right of the scale, as illustrated below:



Sampling

The type or intended purpose for which a sample was taken is indicated by the following abbreviation codes.

Sample Type	Code
Auger sample	A
Bulk sample	B
Core sample	C
Disturbed sample	D
Sample from SPT test	SPT
Environmental sample	ES
Gas sample	G
Undisturbed tube sample	U[1]
Water sample	W
Piston sample	P
Core sample for unconfined compressive strength testing	UCS
Material Sample	MT

[1] – numeric suffixes indicate tube diameter/width in mm

The above codes only indicate that a sample was retained, and not that testing was scheduled or performed.

Field and Laboratory Testing

A record that field and laboratory testing was performed is indicated by the following abbreviation codes.

Test Type	Code
Pocket penetrometer (kPa)	PP
Photo ionisation detector (ppm)	PID
Standard Penetration Test x/y =x blows for y mm penetration HB = hammer bouncing HW = fell under weight of hammer	SPT
Shear vane (kPa)	V
Unconfined compressive strength, (MPa)	UCS

Field and laboratory testing (continued)

Test Type	Code
Point load test, (MPa), axial (A), diametric (D), irregular (I)	PLT(_)
Dynamic cone penetrometer, followed by blow count penetration increment in mm (cone tip, generally in accordance with AS1289.6.3.2)	DCP/150
Perth sand penetrometer, followed by blow count penetration increment in mm (flat tip, generally in accordance with AS1289.6.3.3)	PSP/150

Groundwater Observations

▷	seepage/inflow
▽	standing or observed water level
NFGWO	no free groundwater observed
OBS	observations obscured by drilling fluids

Drilling or Excavation Methods/Tools

The drilling/excavation methods used to perform the investigation may be shown either in a dedicated column down the left-hand edge of the log, or stated in the log footer. In some circumstances abbreviation codes may be used.

Method	Abbreviation Code
Toothed bucket	TB[1]
Mud/blade bucket	MB[1]
Ripping tyne/ripper	R
Rock breaker/hydraulic hammer	RB
Hand auger	HA[1]
NMLC series coring	NMLC
HMLC series coring	HMLC
NQ coring	NQ3
HQ coring	HQ3
PQ coring	PQ3
Push tube	PT[1]
Rock roller	RR[1]
Solid flight auger. Suffixes: /T = tungsten carbide tip, /V = v-shaped tip	AD[1]
Sonic drilling	SON[1]
Vibrocore	VC[1]
Wash bore (unspecified bit type)	WB[1]
Existing exposure	X
Hand tools (unspecified)	HAND
Predrilled	PD
Diatube	DT[1]
Hollow flight auger	HSA[1]
Vacuum excavation	VE

[1] – numeric suffixes indicate tool diameter/width in mm

Douglas PARTNERS

Cone Penetration Testing

November 2023

Introduction

The Cone Penetration Test (CPT) is a sophisticated soil profiling test carried out in-situ. A special cone shaped probe is used which is connected to a digital data acquisition system. The cone and adjoining sleeve section contain a series of strain gauges and other transducers which continuously monitor and record various soil parameters as the cone penetrates the soils.

The soil parameters measured depend on the type of cone being used, however they always include the following basic measurements

- Cone tip resistance q_c
- Sleeve friction f_s
- Inclination (from vertical) i
- Depth below ground z

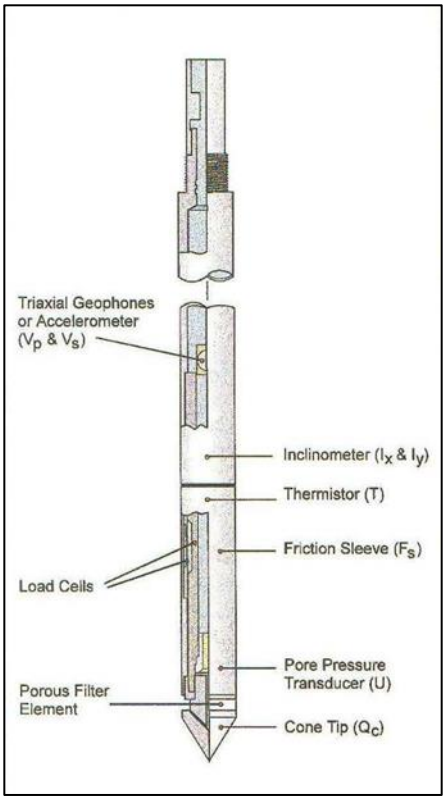


Figure 1: Cone Diagram

The inclinometer in the cone enables the verticality of the test to be confirmed and, if required, the vertical depth can be corrected.

The cone is thrust into the ground at a steady rate of about 20 mm/sec, usually using the hydraulic rams of a purpose built CPT rig, or a drilling rig. The testing is carried out in accordance with the Australian Standard AS1289 Test 6.5.1.



Figure 2: Purpose built CPT rig

The CPT can penetrate most soil types and is particularly suited to alluvial soils, being able to detect fine layering and strength variations. With sufficient thrust the cone can often penetrate a short distance into weathered rock. The cone will usually reach refusal in coarse filling, medium to coarse gravel and on very low strength or better rock. Tests have been successfully completed to more than 60 m.

Types of CPTs

Douglas Partners (and its subsidiary GroundTest) owns and operates the following types of CPT cones:

Type	Measures
Standard	Basic parameters (qc, fs, i & z)
Piezocone	Dynamic pore pressure (u) plus basic parameters. Dissipation tests estimate consolidation parameters
Conductivity	Bulk soil electrical conductivity (□) plus basic parameters
Seismic	Shear wave velocity (Vs), compression wave velocity (Vp), plus basic parameters

Strata Interpretation

The CPT parameters can be used to infer the Soil Behaviour Type (SBT), based on normalised values of cone resistance (Qt) and friction ratio (Fr). These are used in conjunction with soil classification charts, such as the one below (after Robertson 1990)

Cone Penetration testing

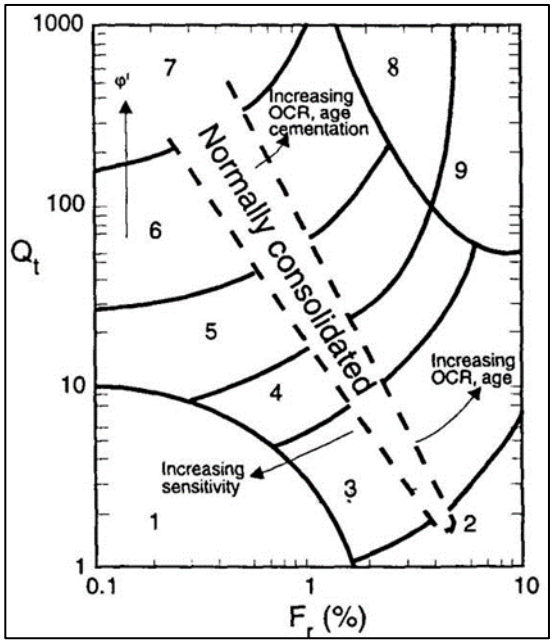


Figure 3: Soil Classification Chart

DP's in-house CPT software provides computer aided interpretation of soil strata, generating soil descriptions and strengths for each layer. The software can also produce plots of estimated soil parameters, including modulus, friction angle, relative density, shear strength and over consolidation ratio.

DP's CPT software helps our engineers quickly evaluate the critical soil layers and then focus on developing practical solutions for the client's project.

Engineering Applications

There are many uses for CPT data. The main applications are briefly introduced below:

Settlement

CPT provides a continuous profile of soil type and strength, providing an excellent basis for settlement analysis. Soil compressibility can be estimated from cone derived moduli, or known consolidation parameters for the critical layers (eg. from laboratory testing). Further, if pore pressure dissipation tests are undertaken using a piezocone, in-situ consolidation coefficients can be estimated to aid analysis.

Pile Capacity

The cone is, in effect, a small scale pile and, therefore, ideal for direct estimation of pile capacity. DP's in-house program ConePile can analyse most pile types and produces pile capacity versus depth plots. The analysis methods are based on proven static theory and empirical studies, taking account of scale effects, pile materials and method of installation.

The results are expressed in limit state format, consistent with the Piling Code AS2159.

Dynamic or Earthquake Analysis

CPT and, in particular, Seismic CPT are suitable for dynamic foundation studies and earthquake response analyses, by profiling the low strain shear modulus G0. Techniques have also been developed relating CPT results to the risk of soil liquefaction.

Other Applications

Other applications of CPT include ground improvement monitoring (testing before and after works), salinity and contaminant plume mapping (conductivity cone), preloading studies and verification of strength gain.

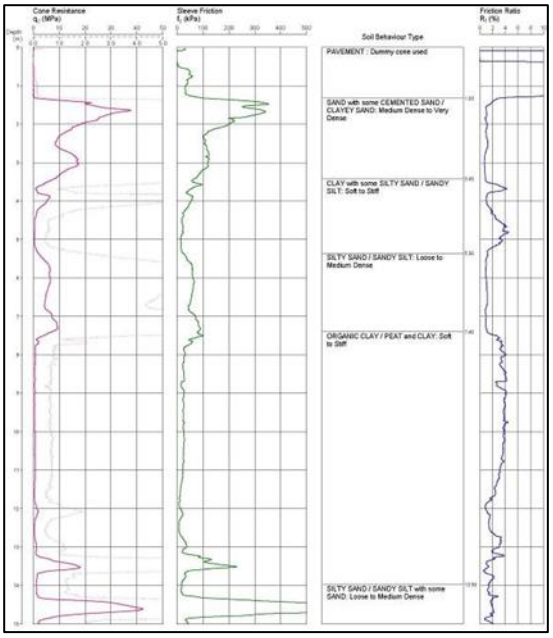


Figure 4: Sample Cone Plot

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.7 AHD
COORDINATE: E:297366.3, N:6255956.9
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP201
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	55 / 0	FILL / Silty CLAY: red-brown; medium to high plasticity; with fine to medium ironstone gravel and rootlets, trace roots .		FILL	ND	w=PL		ES		0.20	PID	2ppm
	0.20	CLAY (CI-CH): red-brown; medium to high plasticity; trace fine to medium ironstone gravel.		RS possibly ALV				ES		0.30 0.50	PID	<1ppm
	0.60	CLAY (CH): red-brown mottled pale grey; high plasticity; with fine to medium ironstone gravel.		RS				ES		0.80	PID	<1ppm
	1	Test Pit discontinued at 1.00m depth. Target depth reached.								1.00		
	54 / 2											
	53 / 3											
	52											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.8 AHD
COORDINATE: E:297355.3, N:6255982.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP202
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	55	FILL / Silty CLAY: brown, red -brown and pale grey ; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel, trace rootlets .		FILL				ES		0.20	PID	< 1ppm
	0.30	CLAY (CH): red-brown; high plasticity; trace roots.		RS possibly ALV	ND	w=PL		ES		0.40	PID	<1ppm
	0.70	CLAY (CH): orange-brown mottled pale grey; high plasticity; trace fine to medium ironstone gravel.		RS						0.50		
	1							ES		0.90	PID	<1ppm
	54	Test Pit discontinued at 1.10m depth. Target depth reached.								1		
	2									1.10		
	53											
	3											
	52											

NOTES: (#) Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.7 AHD
COORDINATE: E:297346.5, N:6256011.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP203
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[##]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	55	FILL / Clayey Silty SAND: dark brown with red-brown; fine to medium; low to medium plasticity clay; low to medium plasticity silt; trace rootlets, fine to medium igneous, ironstone and concrete gravel.		FILL		w<PL		ES		0.20	PID	2ppm
	0.30	CLAY (CI-CH): red-brown mottled pale grey; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets		RS possibly ALV	ND	w=PL		ES		0.40	PID	<1ppm
		From 0.70m: high plasticity, trace ironstone								0.60		
	1							* ES		0.90	PID	<1ppm
										1		
		Test Pit discontinued at 1.10m depth. Target depth reached.								1.10		
	54											
	2											
	53											
	3											
	52											

NOTES: [##] Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD5/20240712 taken from 0.9-1.1m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.5 AHD
COORDINATE: E:297338.0, N:6256040.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP204
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	0.05	FILL / Silty Sandy CLAY: red-brown, orange-brown and brown; low to medium plasticity; fine to medium sand; trace fine to medium ironstone gravel.		FILL		w>PL		ES		0.05	PID	2ppm
				RS possibly ALV						0.10		
								ES			PID	<1ppm
	0.40	CLAY (CH): red-brown and orange-brown; high plasticity; with fine to medium ironstone gravel.			ND					0.30		
	55	CLAY (CH): orange-brown mottled pale grey; high plasticity; with fine to medium ironstone gravel.		RS		w=PL						
										0.60		
								ES			PID	<1ppm
										0.80		
		Test Pit discontinued at 0.80m depth. Target depth reached.										
	1											
	54											
	2											
	53											
	3											
	52											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.4 AHD
COORDINATE: E:297330.2, N:6256068.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP205
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^]/ DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	55 / 0.20	FILL/Silty CLAY, red-brown, pale grey and brown; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace plastic and rootlets.				w<PL		ES		0.20	PID	1ppm
		CLAY (CI-CH): orange-brown and pale grey; medium to high plasticity; trace fine to medium ironstone gravel.		RS possibly ALV	ND	w<PL		ES		0.30 0.50	PID	<1ppm
	0.60	CLAY (CH): pale grey mottled orange-brown; high plasticity.		RS		w=PL		* ES		0.80	PID	<1ppm
	1	Test Pit discontinued at 1.00m depth. Target depth reached.								1.00		

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD4/20240712 taken from 0.8-1.0m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.2 AHD
COORDINATE: E:297324.1, N:6256099.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP206
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^]/ DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	55		FILL / Clayey SAND: brown and red-brown; fine to medium; low to medium plasticity clay; with silt; trace plastic, fine to medium sandstone, ironstone and igneous gravel.		FILL				ES		0.20	PID	3ppm
									ES		0.50	PID	<1ppm
		0.70	CLAY (CI-CH): red-brown; medium to high plasticity; trace rootlets.		ALV	ND	w<PL				0.70		
									ES		0.80	PID	<1ppm
		1.00	CLAY (CI-CH): red-brown mottled pale grey; medium to high plasticity.		ALV possibly RS						1.00		
	54								* ES		1.20	PID	<1ppm
			Test Pit discontinued at 1.40m depth. Target depth reached.								1.40		
		2											
	53												
		3											
	52												

NOTES: [#]Soil origin is "probable" unless otherwise stated. [^]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD3/20240712 taken from 1.2-1.4m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 58.2 AHD
COORDINATE: E:297322.0, N:6256137.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP207
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	58	FILL / Silty CLAY: dark brown; low to medium plasticity; with fine to medium ironstone gravel; trace rootlets.		FILL		w<PL		ES		0.20	PID	2ppm
		0.70m: trace plastic						ES		0.50	PID	2ppm
	0.90									0.70		
	1	FILL / Silty CLAY: dark grey; low to medium plasticity; trace rootlets .		FILL	ND	w=PL		ES		1.00	PID	2ppm
	57									1.20		
	2	From 2.20m: grey to dark grey, trace fine to medium sand						ES		2.00	PID	1ppm
	56									2.20		
		Test Pit discontinued at 2.60m depth. Limit of excavator.										
	3											
	55											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

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Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 57.0 AHD
COORDINATE: E:297345.1, N:6256150.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP208
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed			FILL / Silty Sandy CLAY: dark brown; low to medium plasticity; fine to medium sand; trace rootlets, timber fragments and fine igneous gravel.		FILL		w>PL		ES		0.20	PID	1ppm
									ES		0.50	PID	1ppm
											0.70		
		0.80	FILL / Silty CLAY: dark grey and red-brown; low to medium plasticity; with fine to medium sand; trace rootlets and timber fragments.								0.90		
	56	1							ES		1	PID	2ppm
											1.10		
			From 1.50m: dark grey			ND							
			From 1.70m: trace fine to medium sand										
					FILL		w=PL				1.90		
	55	2							ES		2	PID	3ppm
											2.10		
											2.80		
	54	3							ES		3.00	PID	<1ppm
			Test Pit discontinued at 3.00m depth. Limit of excavator.										
	53												

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

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Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.1 AHD
COORDINATE: E:297371.6, N:6256167.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP209
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 Perched groundwater at 1.1m	55 / 0	FILL / Silty CLAY: brown; medium to high plasticity; trace rootlets and timber fragments.		FILL		w<PL		ES	0.00–0.20	0.20	PID	2ppm
								ES	0.50–0.70	0.50	PID	2ppm
	54 / 1					w>PL				0.70		
										1		
		FILL / Silty CLAY: dark brown and grey-brown; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets and plastic irrigation hose.			ND			ES	1.50–1.70	1.50	PID	<1ppm
	1.40									1.70		
	53 / 2	From 2.20m: with timber; trace plastic; moderate decomposition odour		FILL		w=PL				2		
								ES	2.50–2.70	2.50	PID	1ppm
	52 / 3	Test Pit discontinued at 3.00m depth. Limit of excavator.								2.70		

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.2 AHD
COORDINATE: E:297389.6, N:6256187.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP210
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^] / DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	55 / 0	FILL / Silty CLAY: brown and yellow-brown; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets.		FILL				ES		0.20	PID	1ppm
								ES		0.50	PID	2ppm
										0.70		
	54 / 1							ES		1.00	PID	2ppm
										1.20		
	1.60	FILL / Silty CLAY: red-brown, pale grey and brown; medium to high plasticity; with fine to medium sand; trace rootlets, timber fragments and plastic; moderate decomposition odour.		FILL	ND	w<PL		ES		1.70	PID	2ppm
	53 / 2									1.90		
										2.70	PID	2ppm
								ES		2.90		
	52 / 3									3.30	PID	2ppm
	3.20	Silty CLAY (CI-CH): yellow and yellow-grey; medium to high plasticity.		ALV possibly FILL		w>PL		ES		3.50		
		Test Pit discontinued at 3.50m depth. Limit of excavator.										

NOTES: [#]Soil origin is "probable" unless otherwise stated. [^]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.4 AHD
COORDINATE: E:297361.4, N:6256122.7
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP211
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^]/ DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	54	FILL / Silty CLAY: pale brown, red-brown and pale grey; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets (0-0.1m) . From 0.40m: with fine to medium sand; trace sandstone and igneous gravel		FILL		w=PL		ES		0.20	PID	3ppm
	0.80							ES		0.50	PID	6ppm
	1	FILL / Silty CLAY: pale grey and red-brown; medium to high plasticity; with fine to medium ironstone gravel.		FILL	ND	w<PL		ES		0.80 0.90 1 1.10	PID	5ppm
	1.20	FILL / Silty CLAY: dark grey and red-brown; low to medium plasticity; with fine to medium igneous and ironstone gravel.		FILL		w=PL		ES		1.20	PID	3ppm
	1.35	CLAY (CI-CH): red-brown; medium to high plasticity; trace rootlets and fine to medium ironstone gravel.		ALV		w<PL		ES		1.35 1.40	PID	1ppm
	53							ES		1.60		
								* ES		1.80	PID	<1ppm
	2	Test Pit discontinued at 2.00m depth. Target depth reached.								2.00		
	52											
	3											
	51											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate taken from BD2/20240712 taken from 1.8-2.0m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.1 AHD
COORDINATE: E:297392.8, N:6256138.3
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP212
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	54	0	FILL / Silty CLAY: orange-brown, red-brown and pale brown; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets (0-0.2m). From 0.30m: trace sandstone gravel		FILL		w<PL		ES		0.20	PID	3ppm
		0.40	FILL / Silty Sandy CLAY: brown, red-brown and pale grey; low to medium plasticity; fine to medium sand; with fine to medium ironstone gravel; trace plastic. From 0.80m: pale grey, red-brown and brown						ES		0.50	PID	4ppm
	53	1									0.70		
									ES		1.00	PID	5ppm
					FILL	ND	w<PL				1.20		
	52	2							ES		2.00	PID	1ppm
											2.20		
		2.40	CLAY (CI-CH): dark grey mottled red-brown; medium to high plasticity; trace rootlets and decomposed wood.		ALV		w=PL		ES		2.40	PID	1ppm
											2.60		
									ES		2.80	PID	<1ppm
	51	3	Test Pit discontinued at 3.00m depth. Target depth reached.								3.00		

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.7 AHD
COORDINATE: E:297361.6, N:6256087.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP213
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^]/ DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	54	FILL / Silty CLAY: red-brown, pale grey and brown; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets.		FILL		w>PL		ES		0.20	PID	8ppm
	0.20	FILL / Silty Sandy CLAY: brown and red-brown; low to medium plasticity; fine to medium sand; with fine to medium igneous and ironstone gravel.		FILL		w<PL		ES		0.30	PID	8ppm
	0.50	FILL / Silty CLAY: pale grey, red-brown and brown; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel.		FILL		w<PL		ES		0.50		
	0.80	FILL / Silty CLAY: grey-brown; low to medium plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets and fine to medium igneous gravel.		FILL	ND			ES		0.60	PID	2ppm
	0.90	CLAY (CI-CH): pale red-brown; medium to high plasticity; trace rootlets.		ALV		w=PL		ES		0.80	PID	2ppm
	1							ES		0.90		
								ES		1.00	PID	<1ppm
										1.20		
								* ES		1.40	PID	<1ppm
	53	Test Pit discontinued at 1.60m depth. Target depth reached.								1.60		
	2											
	52											
	3											
	51											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD1/20240712 taken from 1.4-1.6m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.1 AHD
COORDINATE: E:297403.9, N:6256117.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP214
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	54		FILL / Silty CLAY: orange-brown, red-brown, brown and pale grey; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets.		FILL				ES		0.20	PID	3ppm
		0.30	FILL / Silty Sandy CLAY: dark brown, red-brown and pale grey; low to medium plasticity; fine to medium sand; with fine to medium ironstone gravel; trace plastic.								0.40		
									ES		0.60	PID	4ppm
			From 0.90m: trace sandstone gravel								0.90		
	53	1							ES		1	PID	4ppm
											1.10		
			From 1.30m: pale grey to dark grey and red-brown				w<PL						
					FILL								
						ND							
											1.90		
	52	2							ES		2	PID	1ppm
											2.10		
		2.70	CLAY (CI-CH): pale brown; medium to high plasticity; trace roots and rootlets.								2.80		
									ES			PID	<1ppm
	51	3			ALV		w=PL				3.00		
											3.10		
									ES			PID	<1ppm
											3.30		
			Test Pit discontinued at 3.30m depth. Target depth reached.										

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

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Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.8 AHD
COORDINATE: E:297370.7, N:6256057.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP215
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	54	FILL / Silty CLAY: red-brown, pale grey and brown; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets (0-0.2m) and fine to medium igneous gravel.		FILL	ND	ND		ES		0.20	PID	4ppm
								ES		0.50	PID	4ppm
										0.70		
	1.00 53	CLAY (CI-CH): red-brown; medium to high plasticity; with fine to medium ironstone gravel; trace roots		ALV possibly RS		w=PL		ES		1 1.10	PID	<1ppm
		From 1.40m: red-brown mottled grey; trace ironstone gravel								1.30		
								ES		1.50	PID	<1ppm
										1.70		
	2 52	Test Pit discontinued at 1.80m depth. Target depth reached.										
	3 51											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Generated with CORE-GS by Geroc - Soil Log

Refer to explanatory notes for symbol and abbreviation definitions

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.2 AHD
COORDINATE: E:297406.5, N:6256083.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP216
PROJECT No: 207476.06
DATE: 11/07/24
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(##)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	SAMPLE DEPTH (m)	TESTING AND REMARKS: TEST TYPE	TESTING AND REMARKS: RESULTS AND REMARKS
11/07/24 No free groundwater observed	54	0.00	FILL / Silty CLAY: orange-brown, pale grey, brown and red-brown; medium to high plasticity; with fine to medium ironstone gravel; trace fine to medium sand and rootlets.		FILL				ES		0.20	PID	5ppm
		0.40	FILL / Silty Sandy CLAY: dark brown and red-brown; low to medium plasticity; fine to medium sand; with fine to medium igneous gravel; trace glass, timber, rubber, plastic, slag, fabric and fine to medium sandstone gravel.		FILL		w=PL		ES		0.50	PID	3ppm
		1							ES		0.80	PID	5ppm
											1.00		
	53	1.20	FILL / Silty Sandy CLAY: dark brown and red-brown; low to medium plasticity; fine to medium sand.		FILL		w<PL		ES		1.30	PID	3ppm
											1.50		
		1.70	FILL / Silty CLAY: pale grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets; strong decomposition odour.		FILL	ND	w=PL		ES		1.80	PID	4ppm
	52	2									2.00		
									ES		2.40	PID	4ppm
											2.60		
		2.70	Silty CLAY (CI-CH): pale brown mottled pale orange-brown; medium to high plasticity; trace rootlets and roots.		ALV		w<PL		ES		2.80		
		3									3.00		
	51								ES		3.20		
											3.40		
			Test Pit discontinued at 3.40m depth. Target depth reached.										

NOTES: (##) Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.8 AHD
COORDINATE: E:297446.5, N:6256096.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP217
PROJECT No: 207476.06
DATE: 11/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
11/07/24 No free groundwater observed	53 / 0	FILL / Silty CLAY: brown, orange-brown, red-brown and pale grey; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets (0-0.2m) and concrete fragments.		FILL		w>PL		ES		0.20	PID	4ppm
	0.30	FILL / Silty CLAY: orange-brown, red-brown and pale grey; low to medium plasticity; with fine to medium ironstone gravel.						ES		0.40	PID	8ppm
										0.60		
		From 0.90m: with fine to medium sand and shale gravel						ES		0.90	PID	8ppm
	1			FILL		w<PL				1.10		
		From 1.60m: no sand			ND			ES		1.70	PID	7ppm
	52 / 2									1.90		
	2.10	FILL / Silty CLAY: pale grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets, charcoal and fine to medium igneous gravel.		FILL		w=PL		ES		2.15	PID	9ppm
	2.35	CLAY (CI-CH): orange-brown mottled grey; medium to high plasticity; with rootlets; trace roots.		ALV		w<PL		ES		2.40	PID	<1ppm
	51									2.60		
								ES		2.80	PID	<1ppm
	3	Test Pit discontinued at 3.00m depth. Target depth reached .								3.00		
	50											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Generated with CORE-GS by Geroc - Soil Log

Refer to explanatory notes for symbol and abbreviation definitions

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.1 AHD
COORDINATE: E:297371.5, N:6256024.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP218
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^]/ DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	55	0	FILL / Silty CLAY: red-brown, pale grey and brown; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets (0-0.2m).		FILL	ND	ND		ES		0.20	PID	4ppm
									ES		0.50	PID	2ppm
											0.70		
	54	1							ES		1.00	PID	3ppm
		1.20	CLAY (CI-CH): red-brown; medium to high plasticity; trace rootlets and fine to medium ironstone gravel.		ALV		w=PL		ES		1.20	PID	<1ppm
											1.30		
									ES		1.50	PID	<1ppm
											1.60		
									* ES		1.80		
	53	2	Test Pit discontinued at 1.80m depth. Target depth reached.										
	52	3											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD6/20240712 taken from 1.6-1.8m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.4 AHD
COORDINATE: E:297413.6, N:6256046.7
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP219
PROJECT No: 207476.06
DATE: 11/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
11/07/24 No free groundwater observed	54	FILL / Silty CLAY: red-brown, brown and pale grey; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets (0-0.2m).		FILL		w>PL		ES		0.20	PID	5ppm
								ES		0.50	PID	3ppm
	0.80									0.70		
	1	FILL / Silty CLAY: red-brown; medium to high plasticity; trace fine to medium ironstone gravel.		FILL	ND			ES		0.90	PID	5ppm
										1		
	1.40									1.10		
	53	FILL / Silty CLAY: pale grey with orange-brown; medium to high plasticity; with fine to medium ironstone gravel.		FILL		w<PL		ES		1.60	PID	8ppm
										1.80		
	2.00									2		
		CLAY (CH): brown mottled red-brown; high plasticity; trace rootlets and fine to medium ironstone gravel.		ALV		w=PL		ES		2.10	PID	<1ppm
	52									2.30		
								ES		2.40	PID	<1ppm
										2.60		
		Test Pit discontinued at 2.60m depth. Target depth reached.										
	3											
	51											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

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Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.1 AHD
COORDINATE: E:297450.8, N:6256058.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP220
PROJECT No: 207476.06
DATE: 11/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^] / DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
11/07/24 No free groundwater observed	54 / 0	FILL / Silty CLAY: orange-brown and pale grey; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets (0-0.2m).		FILL				ES		0.20	PID	2ppm
	0.35	CLAY (CI-CH): pale orange-brown mottled pale brown; medium to high plasticity; trace decomposed wood and fine to medium ironstone gravel.		ALV	ND	w=PL		ES		0.40	PID	<1ppm
	53 / 1							* ES		0.60		
										0.90		
										1	PID	<1ppm
										1.10		
		Test Pit discontinued at 1.10m depth. Target depth reached.										
	52 / 2											
	51 / 3											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD5/20240711 taken from 0.9-1.1m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Douglas PARTNERS

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.1 AHD
COORDINATE: E:297387.4, N:6256003.7
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP221
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	55 / 0	FILL / Silty CLAY: red-brown; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets. From 0.20m: with fine to medium sand		FILL				ES		0.20	PID	5ppm
	0.40	FILL / Silty CLAY: red-brown and grey; medium to high plasticity; with fine to medium ironstone gravel. 0.60m: trace decomposed wood		FILL				ES		0.30 0.70	PID	2ppm
	54 / 1				ND	w=PL				1		
	1.20	FILL / Silty CLAY: dark brown; low to medium plasticity; with fine to medium igneous gravel; trace rootlets and decomposed wood.		FILL				ES		1.25 1.35	PID	2ppm
	1.35	Silty CLAY (CI-CH): red-brown and yellow-brown; medium to high plasticity; with fine to medium ironstone gravel. From 1.60m: red-brown mottled grey						ES		1.40 1.60	PID	<1ppm
	53 / 2	Test Pit discontinued at 2.00m depth. Target depth reached.						ES		1.80 2.00	PID	<1ppm
	52 / 3											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service
LOGGED: NW

Refer to explanatory notes for symbol and abbreviation definitions

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Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5 AHD
COORDINATE: E:297431.2, N:6256015.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP222
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	54	FILL / Sandy CLAY: pale brown and pale grey; low to medium plasticity; fine to medium sand; trace roots, rootlets and fine to medium ironstone gravel.		FILL				ES		0.20	PID	2ppm
		0.20 FILL / Silty CLAY: pale grey, brown and red-brown; medium to high plasticity; trace rootlets and fine to medium ironstone gravel.		FILL		w<PL		ES		0.30 0.50	PID	2ppm
		From 0.70m: yellow-brown to brown										
		0.80 FILL / Clayey SAND: brown and dark brown; fine to medium; low to medium plasticity clay; trace rootlets and fine to medium sandstone and ironstone gravel.		FILL				ES		0.80 1.00	PID	3ppm
	53	1.30 FILL / Silty Sandy CLAY: pale grey; low to medium plasticity; fine to medium sand; trace fine to medium ironstone gravel.		FILL	ND	w=PL		ES		1.80 1.90	PID	2ppm
	52	2.25 Silty CLAY (CI-CH): yellow-brown; medium to high plasticity; trace fine to medium ironstone gravel.		ALV				ES		2.30 2.50	PID	<1ppm
								ES		2.60 2.80	PID	<1ppm
	51	Test Pit discontinued at 2.80m depth. Target depth reached.										

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

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Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.2 AHD
COORDINATE: E:297477.5, N:6256025.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP223
PROJECT No: 207476.06
DATE: 11/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^] / DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
11/07/24 No free groundwater observed	54 / 0	FILL / Silty CLAY: red-brown, pale brown and pale grey; medium to high plasticity; with fine to medium sand; trace rootlets (0-0.2m) and fine to medium ironstone gravel.		FILL		w>PL		ES		0.20	PID	4ppm
	0.20	FILL / Sandy CLAY: dark brown and red-brown; low to medium plasticity; fine to medium sand; trace fine to medium ironstone gravel.		FILL		w=PL		ES		0.30 0.50	PID	3ppm
	0.70	FILL / Silty CLAY: red-brown and pale grey; medium to high plasticity; with fine to medium ironstone gravel.						ES		0.80 1.00	PID	3ppm
	1 / 53	From 1.20m: orange-brown and pale grey										
		From 1.60m: red-brown and dark brown; with fine to medium sand		FILL	ND	w<PL		ES		1.80 2.00	PID	4ppm
	2 / 52							ES		2.80 3.00	PID	5ppm
	3.00 / 51	FILL / Silty Sandy CLAY: pale grey-brown and red-brown; low to medium plasticity; fine to medium sand; with fine to medium ironstone gravel; trace rootlets and fine to medium igneous gravel.		FILL		M		ES		3.10 3.30	PID	3ppm
	3.30	CLAY (CI-CH): pale brown mottled grey; medium to high plasticity; trace rootlets.		ALV		w=PL	*	ES		3.40 3.50	PID	<1ppm
		Test Pit discontinued at 3.60m depth. Limit of excavator.										

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD1/20240711 taken from 3.4-3.6m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.2 AHD
COORDINATE: E:297397.1, N:6255965.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP224
PROJECT No: 207476.06
DATE: 12/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/07/24 No free groundwater observed	55 / 0	FILL / Silty CLAY: red-brown; medium to high plasticity; with rootlets; trace fine to medium ironstone gravel.		FILL		w=PL		ES		0.20	PID	2ppm
	0.45	FILL / Silty Sandy CLAY: pale brown; low to medium plasticity; fine to medium sand; with fine to medium igneous and ironstone gravel.		FILL		D		ES		0.50	PID	<1ppm
	0.70	Silty CLAY (CI-CH): red-brown and orange-brown; medium to high plasticity; with fine to medium ironstone gravel.			ND			ES		0.80	PID	<1ppm
	54 / 1	From 1.10m: red-brown mottled grey				w<PL				1.00		
								ES		1.20	PID	<1ppm
										1.40		
		Test Pit discontinued at 1.40m depth. Target depth reached .										
	53 / 2											
	52 / 3											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: NW

Refer to explanatory notes for symbol and abbreviation definitions

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Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.6 AHD
COORDINATE: E:297437.1, N:6255993.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP225
PROJECT No: 207476.06
DATE: 11/07/04
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
11/07/24 No free groundwater observed	54	FILL / Silty CLAY: pale brown, red-brown and pale grey; medium to high plasticity; trace rootlets (0-0.2m) and fine to medium ironstone gravel .		FILL		w>PL		ES		0.20	PID	3ppm
		0.50m: trace flagged warning rope				w<PL		ES		0.50	PID	3ppm
	0.70	FILL / CLAY: pale brown and dark brown; medium to high plasticity.		FILL		w=PL		ES		0.70	PID	3ppm
	0.90	FILL / Silty CLAY: pale grey, red-brown and pale brown; low to medium plasticity; with fine to medium ironstone gravel.		FILL	ND	w<PL		ES		1.00	PID	4ppm
	1	From 1.50m: pale grey and red-brown								1.20		
	53									1.90		
	1.80	FILL / Silty Sandy CLAY: brown with red-brown and pale grey; low to medium plasticity; fine to medium sand; trace fine to medium ironstone gravel.		FILL		w=PL		ES		2	PID	3ppm
	2									2.10		
	2.20	FILL / Silty Sandy CLAY: pale brown; low to medium plasticity; fine to medium sand; trace rootlets.		FILL		M		ES		2.20	PID	4ppm
	2.40	Silty CLAY (CI-CH): pale brown mottled red-brown; medium to high plasticity.		ALV		w=PL		ES		2.40		
	52									2.50	PID	<1ppm
										2.70		
	3									3.00		
								ES		3.20	PID	<1ppm
	51	Test Pit discontinued at 3.20m depth. Target depth reached .										

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD2/20240711 taken from 3.0-3.2m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.6 AHD
COORDINATE: E:297437.8, N:6255970.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP226
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	54 / 0	FILL / Silty CLAY: dark brown with some red-brown; low to medium plasticity; with fine to medium sand; trace rootlets, timber fragments and fine to medium ironstone gravel.						ES		0.20		
		From 0.50m: with cobbles; trace plastic		FILL	ND	w=PL		ES		0.50 0.70		
	1	From 1.10m: with sandstone boulders						ES		1.00		
		Test Pit discontinued at 1.20m depth. Large boulders possibly associated with stormwater service.								1.20		
	53 / 1											
	2											
	52 / 2											
	3											
	51 / 3											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.7 AHD
COORDINATE: E:297500.1, N:6255986.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP227
PROJECT No: 207476.06
DATE: 11/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
11/07/24 No free groundwater observed	53 / 0	FILL / Silty Sandy CLAY: dark brown, red-brown and pale grey; low to medium plasticity; fine to medium sand; with fine to medium igneous and sandstone gravel; trace rootlets (0-0.2m)						ES		0.20	PID	3ppm
								ES		0.50	PID	3ppm
		From 0.80m: with fine to medium sand		FILL						0.70		
	1	From 1.00m: trace ash						ES		1.00	PID	2ppm
	52				ND	w=PL				1.20		
	1.80	FILL / Silty Sandy CLAY: pale grey-brown; low to medium plasticity; trace rootlets and fine to medium igneous gravel.		FILL				ES		1.80	PID	3ppm
	2.00	CLAY (CI-CH): pale brown; medium to high plasticity; trace rootlets.		ALV				ES		2.00		
								ES		2.10	PID	<1ppm
										2.30		
								ES		2.40	PID	<1ppm
	51	Test Pit discontinued at 2.60m depth. Target depth reached.								2.60		
	3											
	50											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD4/20240711 taken from 2.4-2.6m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5 AHD
COORDINATE: E:297535.2, N:6255989.9
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP228
PROJECT No: 207476.06
DATE: 11/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^] / DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
11/07/24 No free groundwater observed	53 / 0	FILL / Silty CLAY: pale grey and red-brown; medium to high plasticity; with fine to medium ironstone gravel.		FILL		w>PL		ES		0.20	PID	3ppm
	0.40 / 53	FILL / Silty CLAY: dark brown with red-brown and pale grey; low to medium plasticity; with fine to medium sand; trace glass and fine to medium ironstone gravel.		FILL	ND			ES		0.50	PID	4ppm
	1							ES		0.70		
								ES		1.00	PID	5ppm
						w=PL				1.20		
	1.40 / 52	CLAY (CI-CH): pale brown; medium to high plasticity; trace rootlets.		ALV				ES		1.50	PID	<1ppm
										1.70		
								* ES		1.80	PID	<1ppm
	2 / 51	Test Pit discontinued at 2.00m depth. Target depth reached.								2.00		
	3 / 50											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD3/20240711 taken from 1.8-2.0m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.4 AHD
COORDINATE: E:297442.7, N:6256257.3
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP229
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	55 / 0	FILL / Silty Sandy CLAY: dark brown to brown; low to medium plasticity; fine to medium sand; trace rootlets, timber fragments and fine to medium ironstone gravel.		FILL	ND	w=PL		ES		0.20	PID	3ppm
								ES		0.50	PID	5ppm
										0.70		
	1 / 54	From 1.00m: dark brown						ES		1.00	PID	4ppm
										1.20		
						w>PL				1.90		
	2 / 53							ES		2	PID	5ppm
	2.20	FILL / Silty Sandy CLAY: dark brown, red-brown some pale grey; low to medium plasticity; fine to medium sand; trace timber fragments and fine to medium ironstone gravel.		FILL						2.10		
										2.30		
								ES			PID	3ppm
										2.50		
		Test Pit discontinued at 2.80m depth. Limit of excavator.										
	3 / 52											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.0 AHD
COORDINATE: E:297466.9, N:6256287.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP230
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
			FILL / Silty Sandy CLAY: dark brown to brown; medium to high plasticity; fine to medium sand; with roots and rootlets; trace timber fragments and fine to medium ironstone gravel.						ES		0.20	PID	4ppm
									ES		0.50	PID	2ppm
									ES		0.70		
	53	1	From 1.00m: grey-brown and dark yellow-brown.		FILL		w<PL		ES		1.00	PID	4ppm
									ES		1.20		
▼ Perched groundwater at 1.7m 16/07/24						ND			ES		1.60	PID	4ppm
	52	2					w>PL		ES		1.80		
									ES		2.00	PID	3ppm
		2.50	FILL / Silty CLAY: pale grey and red-brown; medium to high plasticity.						ES		2.20		
					FILL		w<PL		ES		2.60	PID	2ppm
	51	3	Test Pit discontinued at 3.00m depth. Limit of excavator.								2.80		

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5 AHD
COORDINATE: E:297497.3, N:6256310.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP231
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	53 / 0	FILL / Silty CLAY: brown to dark brown; medium to high plasticity; with wood chips; trace rootlets, timber fragments and fine to medium ironstone gravel.		FILL				ES		0.20	PID	3ppm
	0.20	FILL / Silty Sandy CLAY: dark brown and red-brown; low to medium plasticity; fine to medium sand; with wood chips and timber fragments; trace plastic and fine to medium ironstone gravel.						ES		0.30	PID	3ppm
				FILL		w<PL				0.50		
	1							ES		0.80	PID	3ppm
	1.10	FILL / Silty Sandy CLAY: dark brown and grey-brown; low to medium plasticity; fine to medium sand; with rootlets and wood chips; trace timber fragments.								1.00		
	52				ND			ES		1.20	PID	3ppm
										1.40		
	2			FILL		w=PL				2		
								ES		2.20	PID	<1ppm
	51									2.40		
	2.90	Silty CLAY (CI-CH): yellow-brown; medium to high plasticity.		ALV				ES		3.00	PID	<1ppm
	3									3.20		
	50	Test Pit discontinued at 3.20m depth. Limit of excavator.										

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD4/20240716 taken from 3.0-3.2m

OPERATOR: A&A Hire Service
LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 51.6 AHD
COORDINATE: E:297503.8, N:6256343.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP232
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^] / DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	51 / 0.20	FILL / Silty CLAY: dark brown to brown; low to medium plasticity; trace rootlets, roots, timber fragments and fine to medium ironstone gravel.		FILL		w=PL		ES		0.20	PID	2ppm
		FILL / Silty CLAY: brown and yellow-brown; low to medium plasticity; trace fine to medium sandstone gravel.						ES		0.30	PID	4ppm
										0.50		
				FILL								
		From 0.90m: grey-brown and brown.			ND							
	1 / 1.20					w<PL				1.00	PID	2ppm
		CLAY (CI-CH): yellow-brown and dark brown; medium to high plasticity.						ES		1.20		
										1.30	PID	<1ppm
				ALV				ES		1.50		
										1.60	PID	<1ppm
								* ES		1.80		
	50	Test Pit discontinued at 1.80m depth. Target depth reached.										
	2											
	49											
	3											
	48											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD3/20240716 taken from 1.6-1.8m

OPERATOR: A&A Hire Service
LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.7 AHD
COORDINATE: E:297507.7, N:6256279.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP233
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(##)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	52 / 0	FILL / Silty CLAY: dark brown; low to medium plasticity; with fine to medium sand; trace rootlets, charcoal, plastic, fine to medium igneous and sandstone gravel.		FILL		w=PL		ES		0.20	PID	3ppm
								ES		0.50	PID	4ppm
	1									0.70		
								ES		1.00	PID	3ppm
	1.30									1.20		
		FILL / Silty Sandy CLAY: dark grey; low to medium plasticity; fine to medium sand; trace rootlets, roots and fine to medium ironstone gravel.		FILL	ND			ES		1.40	PID	3ppm
	51									1.60		
	2									2		
	2.10					w=PL						
		CLAY (CI-CH): pale red-brown; medium to high plasticity; trace fine to medium ironstone gravel.		ALV				ES		2.20	PID	<1ppm
										2.40		
	50									2.70		
								* ES		2.90	PID	<1ppm
	3	Test Pit discontinued at 2.90m depth. Target depth reached.										
	49											

NOTES: (##) Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD2/20240716 taken from 2.7-2.9m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE: E:297472.6, N:6256233.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP234
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	53 / 0.20	FILL / Silty CLAY: brown and yellow-brown; medium to high plasticity; trace roots, rootlets and fine to medium ironstone gravel.		FILL		w=PL		ES		0.20	PID	3ppm
		FILL / Sandy CLAY: brown, red-brown and pale grey; medium to high plasticity; trace fine to medium ironstone gravel.						ES		0.30	PID	<1ppm
										0.50		
								ES		0.80	PID	5ppm
	1			FILL						1.00		
	52	From 1.10m: pale grey			ND	w<PL						
								ES		1.20	PID	4ppm
										1.40		
	1.70	FILL / Clayey SAND: dark brown to brown; fine to medium; low to medium plasticity clay; trace rootlets and fine to medium ironstone gravel.		FILL						1.80		
								ES			PID	4ppm
	2.00	CLAY (CI-CH): yellow-brown; medium to high plasticity; trace roots.		ALV						2.00		
	51							ES		2.10	PID	<1ppm
										2.30		
								* ES			PID	<1ppm
		Test Pit discontinued at 2.50m depth. Target depth reached.										
	3											
	50											

NOTES: (#) Soil origin is "probable" unless otherwise stated. (*) Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD620240715 taken from 2.3-2.5m

OPERATOR: A&A Hire Service
LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.8 AHD
COORDINATE: E:297515.9, N:6256232.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP235
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	52 / 0	FILL / Silty CLAY: brown to pale brown; low to medium plasticity; trace rootlets and fine to medium ironstone gravel.		FILL				ES		0.20	PID	2ppm
	0.20	FILL / Silty Sandy CLAY: brown, red-brown and pale grey; low to medium plasticity; fine to medium sand; trace fine to medium ironstone gravel. From 0.50m: pale grey.		FILL				ES		0.30	PID	3ppm
										0.50		
								ES		0.80	PID	3ppm
	1				ND	w<PL				1.00		
	1.50	FILL / Clayey SAND: dark brown to brown; fine to medium; low to medium plasticity clay; trace fine to medium sandstone and ironstone gravel.		FILL				ES		1.70	PID	2ppm
	51 / 2									1.90		
	2.10	CLAY (CI-CH): brown and yellow-brown; medium to high plasticity; trace rootlets.		ALV				ES		2.20	PID	<1ppm
										2.40		
								ES			PID	<1ppm
	50 / 3	Test Pit discontinued at 2.60m depth. Target depth reached.								2.60		
	49											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE: E:297473.8, N:6256199.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP236
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	53 / 0.20	FILL / Silty CLAY: pale brown to brown; low to medium plasticity; trace rootlets and fine to medium ironstone gravel.		FILL		w=PL		ES		0.20	PID	3ppm
		FILL / Silty CLAY: pale grey and red-brown; medium to high plasticity; trace fine to medium ironstone gravel.		FILL				ES		0.30 0.50	PID	2ppm
	1	From 0.90m: dark brown						ES		0.80 1.00	PID	4ppm
	1.10 / 52	FILL / Clayey SAND: brown to dark brown; fine to medium; low to medium plasticity clay; trace timber fragments and fine to medium ironstone gravel.		FILL	ND	w<PL		ES		1.20 1.40	PID	1ppm
	2 / 51									2		
	2.30	CLAY (CI-CH): brown and yellow-brown; medium to high plasticity; trace roots.		ALV		w=PL		ES		2.40 2.60	PID	<1ppm
								ES		2.70 2.90	PID	<1ppm
	3 / 50	Test Pit discontinued at 2.90m depth. Target depth reached.										

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE: E:297442.6, N:6256179.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP237
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^]/ DENSITY.[^]	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	SAMPLE DEPTH (m)	TESTING AND REMARKS: TEST TYPE	TESTING AND REMARKS: RESULTS AND REMARKS
16/07/24 No free groundwater observed	53	0.20	FILL / Silty CLAY: brown; low to medium plasticity; trace rootlets and fine to medium ironstone gravel.		FILL				ES		0.20	PID	3ppm
			FILL / Silty CLAY: pale grey and red-brown; low to medium plasticity; trace fine to medium ironstone gravel.						ES		0.30		
											0.50	PID	5ppm
			From 0.70m: dark grey to brown; with sandstone boulders.						ES		0.80		
		1									1.00	PID	2ppm
	52		From 1.30m: dark brown; trace slag, no sandstone boulders.		FILL	ND	w<PL						
									ES		1.80		
		2									2.00	PID	<1ppm
	51	2.60	Silty CLAY (CI-CH): pale brown and yellow-brown; medium to high plasticity.		ALV		w=PL		ES		2.70		
											2.90	PID	<1ppm
		3									3.00		
									* ES		3.20	PID	<1ppm
	50		Test Pit discontinued at 3.20m depth. Target depth reached.										

NOTES: [#]Soil origin is "probable" unless otherwise stated. [^]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD1/20240716 taken from 3.0-3.2m

OPERATOR: A&A Hire Service
LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.8 AHD
COORDINATE: E:297517.9, N:6256193.9
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP238
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	52	FILL / Silty CLAY: brown to pale brown; medium to high plasticity; trace rootlets and fine to medium ironstone gravel.		FILL		w=PL		ES		0.20	PID	3ppm
	0.20	FILL / Sandy CLAY: pale grey, brown and red-brown; medium to high plasticity; fine to medium sand; trace rootlets and fine to medium ironstone gravel.						ES		0.30	PID	3ppm
		From 0.50m: dark brown								0.50		
	1			FILL	ND	w<PL		ES		0.80	PID	2ppm
										1.00		
	1.50	FILL / Clayey Silty SAND: grey to pale grey; fine to medium; low to medium plasticity clay; low to medium plasticity silt; with fine to medium ironstone gravel; trace timber.		FILL				ES		1.60	PID	2ppm
	51 1.90	CLAY (CI-CH): yellow-brown; medium to high plasticity.		ALV				ES		1.80	PID	<1ppm
	2									2.00		
										2.20		
								ES		2.30	PID	<1ppm
										2.50		
	50	Test Pit discontinued at 2.50m depth. Target depth reached.										
	3											
	49											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.0 AHD
COORDINATE: E:297499.5, N:6256169.7
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP239
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(^)/ DENSITY.(^)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	52	1	FILL / Silty CLAY: red-brown, pale brown and brown; medium to high plasticity; trace fine to medium ironstone gravel. From 0.20m: with fine to medium sand		FILL	ND	w<PL		ES		0.20	PID	<1ppm
									ES		0.50	PID	<1ppm
											0.70		
									ES		1.00	PID	2ppm
											1.20		
		1.80									1.80		
	51		FILL / Silty CLAY: grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets and fine to medium ironstone gravel.		FILL		w=PL		ES			PID	<1ppm
		2.00	CLAY (CI-CH): pale orange-brown; medium to high plasticity; trace rootlets.		ALV		w<PL				2.00		
									ES		2.10	PID	<1ppm
											2.30		
											2.40		
	50	3							* ES			PID	<1ppm
			Test Pit discontinued at 2.60m depth. Target depth reached.										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (^)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD5/20240715 taken from 2.4-2.6m

OPERATOR: A&A Hire Service
LOGGED: PJ

Generated with CORE-GS by Geroc - Soil Log

Refer to explanatory notes for symbol and abbreviation definitions

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1 AHD
COORDINATE: E:297495.2, N:6256143.7
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP240
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	53 / 0.20	FILL / Silty CLAY: pale grey-brown; low to medium plasticity; trace rootlets.		FILL				ES		0.20	PID	2ppm
		FILL / Silty Sandy CLAY: pale grey, brown and red-brown; low to medium plasticity; fine to medium sand; trace rootlets and fine to medium ironstone gravel.						ES		0.30 0.50	PID	5ppm
		From 0.80m: dark brown.						ES		0.80 1.00	PID	4ppm
	1 / 52			FILL	ND	w<PL						
								ES		1.80	PID	3ppm
	2.00 / 51	FILL / Silty CLAY: brown and grey-brown; low to medium plasticity; with fine to medium sand; trace fine to medium ironstone gravel.		FILL				ES		2.00	PID	2ppm
	2.20	CLAY (CI-CH): pale brown and yellow-brown; medium to high plasticity.		ALV		w=PL		ES		2.20 2.30	PID	<1ppm
								ES		2.50 2.70	PID	<1ppm
	3 / 50	Test Pit discontinued at 2.90m depth. Target depth reached.								2.90		

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5 AHD
COORDINATE: E:297447.6, N:6256134.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP241
PROJECT No: 207476.06
DATE: 11/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
11/07/24 No free groundwater observed	53 / 0	FILL / Silty CLAY: red-brown, orange-brown, brown and pale grey; medium to high plasticity; with fine to medium sand and fine to medium ironstone gravel; trace rootlets (0-0.2m)						ES		0.20	PID	4ppm
		From 0.40m: dark brown and red-brown; trace charcoal.						ES		0.50	PID	5ppm
		.								0.70		
	52 / 1							ES		1.00	PID	4ppm
				FILL		w=PL				1.20		
					ND			ES		1.50	PID	5ppm
										1.70		
	51 / 2							ES		2.00	PID	4ppm
										2.20		
	2.50	CLAY (CI-CH): pale brown mottled grey; medium to high plasticity; trace rootlets.		ALV		w<PL		ES		2.60	PID	<1ppm
										2.80		
										2.90		
	3							ES		3	PID	<1ppm
										3.10		
	50	Test Pit discontinued at 3.10m depth. Target depth reached.										

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
COORDINATE: E:297510.5, N:6256116.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP242
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^] / DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	53 / 0.20	FILL / Silty CLAY: pale grey and brown; medium to high plasticity.		FILL		w=PL		ES		0.20	PID	2ppm
		FILL / Silty CLAY: brown, red-brown and pale grey; low to medium plasticity; with fine to medium sand; trace timber fragments and fine to medium ironstone gravel.						ES		0.30	PID	<1ppm
										0.50		
										0.80		
								ES			PID	1ppm
	1 / 52			FILL	ND	w<PL				1.00		
		From 1.50m: red-brown and pale grey.								1.60		
								ES			PID	4ppm
										1.80		
	2.00 / 51	CLAY (CI-CH): yellow-brown; medium to high plasticity; trace rootlets and fine to medium ironstone gravel.		ALV						2		
								ES		2.10	PID	<1ppm
										2.30		
								* ES			PID	<1ppm
										2.50		
		Test Pit discontinued at 2.60m depth. Target depth reached.										
	3 / 50											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD4/20240715 taken from 2.3-2.5m

OPERATOR: A&A Hire Service
LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.0 AHD
COORDINATE: E:297558.4, N:6256124.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP243
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	53 / 0	FILL / Silty CLAY: pale grey, red-brown and brown; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets (0-0.2m) and fine to medium sand.		FILL		w=PL		ES		0.20	PID	2ppm
	0.30	FILL / Silty Sandy CLAY: pale grey, brown and red-brown; low to medium plasticity; fine to medium sand; with fine to medium ironstone gravel.		FILL		w<PL		ES		0.40	PID	3ppm
	0.60	FILL / Silty CLAY: red-brown and pale grey with brown; medium to high plasticity; with fine to medium ironstone gravel; trace timber fragments and fine to medium sand.		FILL	ND	w=PL		ES		0.60 0.70	PID	3ppm
	52 / 1									0.90 1		
	1.60	FILL / Silty CLAY: grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets.		FILL				ES		1.60	PID	2ppm
	1.70	CLAY (CI-CH): pale red-brown; medium to high plasticity; trace rootlets.		ALV		w<PL		ES		1.70 1.80	PID	<1ppm
	51 / 2									2.00		
								* ES		2.20	PID	<1ppm
										2.40		
	50 / 3	Test Pit discontinued at 2.40m depth. Target depth reached.										

NOTES: (#) Soil origin is "probable" unless otherwise stated. (*) Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD3/20240715 taken from 2.2-2.4m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1 AHD
COORDINATE: E:297588.5, N:6256128.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP244
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^]/ DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	53		FILL / Silty Sandy CLAY: pale grey, dark brown and red-brown; low to medium plasticity; fine to medium sand; trace rootlets (0-0.2m), ceramic fragments (0-0.2m) and fine to medium ironstone gravel.		FILL	ND	w=PL		ES		0.20	PID	2ppm
									ES		0.50	PID	2ppm
									ES		0.70		
	52	1							ES		1.00	PID	4ppm
											1.20		
	51	2							ES		2.00	PID	4ppm
		2.20	FILL / Silty CLAY: pale grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets and fine to medium ironstone gravel.		FILL				ES		2.20	PID	1ppm
		2.30	CLAY (CI-CH): red-brown; medium to high plasticity; trace rootlets.		ALV				ES		2.30		
									ES		2.40	PID	<1ppm
											2.60		
									* ES		2.70	PID	<1ppm
	50	3	Test Pit discontinued at 2.90m depth. Target depth reached.								2.90		

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD2/20240715 taken from 2.7-2.9m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
COORDINATE: E:297555.7, N:6256083.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP245
PROJECT No: 207476.06
DATE: 15/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(##)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
15/07/24 No free groundwater observed	53 / 0	FILL / Silty CLAY: pale grey and red-brown; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets (0-0.2m) and timber fragments .						ES		0.20	PID	4ppm
		From 0.50m: with fine to medium sand.						ES		0.50 0.70	PID	3ppm
	52 / 1			FILL		w<PL		ES		1.00 1.20	PID	3ppm
					ND							
	1.80	FILL / Silty CLAY: grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets and fine to medium ironstone gravel.		FILL		w=PL		ES		1.80	PID	<1ppm
	2.00	CLAY (CI-CH): pale orange-brown; medium to high plasticity; with rootlets.		ALV		w<PL		ES		2.10 2.30	PID	<1ppm
	51							* ES		2.40 2.60	PID	<1ppm
		Test Pit discontinued at 2.60m depth. Target depth reached.										
	50 / 3											

NOTES: (##)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD1/20240715 taken from 2.4-2.6m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.6 AHD
COORDINATE: E:297507.8, N:6256069.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP246
PROJECT No: 207476.06
DATE: 10/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
10/07/24 No free groundwater observed	53	FILL / Silty CLAY: red-brown and pale grey; medium to high plasticity; trace plastic, fabric and fine to medium ironstone gravel.		FILL		w=PL		ES		0.20	PID	5ppm
	0.30	FILL / Silty CLAY: pale grey with red-brown; low to medium plasticity; with fine to medium ironstone gravel.						ES		0.40	PID	6ppm
										0.60		
	1	From 1.20m: red-brown and pale brown		FILL	ND	w<PL		ES		0.90	PID	9ppm
	52									1		
										1.10		
								ES		1.70		
	2.00	CLAY (CI-CH): red-brown; medium to high plasticity; with fine to medium ironstone; trace rootlets.		ALV				ES		1.90		
	51									2		
								ES		2.10		
										2.30		
								ES		2.40		
		Test Pit discontinued at 2.60m depth. Target depth reached.								2.60		
	3											
	50											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE: E:297605.2, N:6256088.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP247
PROJECT No: 207476.06
DATE: 10/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(^) DENSITY.(^)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
10/07/24 No free groundwater observed	53 / 0	FILL / Silty Sandy CLAY: pale grey, dark brown and pale red-brown; low to medium plasticity; fine to medium sand; trace rootlets (0-0.2m), timber and fine to medium ironstone gravel.		FILL				ES		0.20	PID	4ppm
	0.40	FILL / Silty CLAY: pale grey and red-brown; medium to high plasticity; with fine to medium ironstone gravel.		FILL		w=PL		ES		0.50	PID	8ppm
										0.70		
	1							ES		0.90	PID	12ppm
										1		
	52 / 1.20	FILL / Silty Sandy CLAY: brown, red-brown and pale grey; low to medium plasticity; fine to medium sand; trace timber fragments, polyethylene pipe fragments and fine to medium ironstone gravel.		FILL	ND	w<PL		ES		1.10		
										1.30	PID	11ppm
	2									1.50		
	2.10	FILL / Silty CLAY: grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets.		FILL				ES		2		
	51 / 2.30	CLAY (CI-CH): pale orange-brown; medium to high plasticity.		ALV		w=PL		ES		2.10	PID	7ppm
										2.30	PID	<1ppm
								* ES		2.50		
										2.60	PID	<1ppm
		Test Pit discontinued at 2.80m depth. Target depth reached.								2.80		
	3											
	50											

NOTES: (#) Soil origin is "probable" unless otherwise stated. (^) Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD2/20240710 taken from 2.6-2.8m

OPERATOR: A&A Hire Service
LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
COORDINATE: E:297585.0, N:6256066.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP248
PROJECT No: 207476.06
DATE: 10/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
10/07/24 No free groundwater observed	53 / 0	FILL / Silty Sandy CLAY: pale brown, red-brown and dark brown; low to medium plasticity; fine to medium sand; trace rootlets (0-0.2m), timber and fine to medium ironstone gravel.		FILL	ND	w=PL		ES		0.20	PID	7ppm
								ES		0.50	PID	6ppm
										0.70		
	52 / 1							ES		1.00	PID	10ppm
										1.20		
	1.60	FILL / Silty CLAY: grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets.		FILL		M		ES		1.60	PID	8ppm
	1.80	CLAY (CI-CH): pale orange-brown; medium to high plasticity; trace rootlets.		ALV		w=PL		ES		1.90		
	51 / 2									2	PID	<1ppm
								ES		2.10		
										2.20		
								ES		2.40	PID	<1ppm
		Test Pit discontinued at 2.40m depth. Target depth reached.										
	50 / 3											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD3/20240710 taken from 2.2-2.4m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Douglas PARTNERS

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.9 AHD
COORDINATE: E:297503.8, N:6256035.7
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP249
PROJECT No: 207476.06
DATE: 10/07/24
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	TESTING AND REMARKS: RESULTS AND REMARKS
10/07/24 No free groundwater observed		0.00	FILL / Silty CLAY: brown to dark brown; low to medium plasticity; trace fine to medium igneous, sandstone and ironstone gravel.		FILL		w=PL		ES		0.20	PID	5ppm
	53	0.30	FILL / Silty CLAY: pale grey, orange-brown and pale brown; low to medium plasticity; with fine to medium sand and fine to medium ironstone gravel.		FILL		w<PL		ES		0.50	PID	7ppm
											0.70		
		1							ES		1.00	PID	9ppm
		1.30	FILL / Silty CLAY: red-brown with brown and pale grey; medium to high plasticity; with fine to medium sand.		FILL	ND	w=PL		ES		1.20		
	52										1.40	PID	5ppm
		2							ES		1.60		
		2.20	FILL / Silty CLAY: grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets and fine to medium igneous gravel.		FILL						2		
		2.35	CLAY (CI-CH): pale orange-brown; medium to high plasticity.		ALV		w<PL		ES		2.25	PID	3ppm
											2.35		
									ES		2.40	PID	<1ppm
	51										2.60		
		3							ES		2.80	PID	<1ppm
		3.00	Test Pit discontinued at 3.00m depth. Target depth reached.								3.00		
	50												

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: JC

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.8 AHD
COORDINATE: E:297527.1, N:6256020.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP250
PROJECT No: 207476.06
DATE: 10/07/24
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
10/07/24 No free groundwater observed		0.00	FILL / Silty CLAY: red-brown, brown and pale brown; medium to high plasticity; trace rootlets, plastic and ironstone gravel.		FILL				ES		0.20	PID	6ppm
		0.20	FILL / Silty CLAY: pale grey with red-brown; medium to high plasticity; trace fine to medium ironstone gravel.		FILL				ES		0.30	PID	7ppm
											0.50		
	53	0.80	FILL / Sandy CLAY: pale brown; low to medium plasticity; fine to medium sand; trace fine to medium ironstone gravel.		FILL				ES		0.90	PID	7ppm
		1.00	FILL / Silty CLAY: pale grey with red-brown; medium to high plasticity; trace fine to medium ironstone gravel.		FILL				ES		1.00		
									ES		1.10	PID	8ppm
		1.40	FILL / Silty CLAY: pale grey, pale brown and red-brown; low to medium plasticity; trace fine to medium sand and fine to medium ironstone gravel.		FILL	ND	w=PL		ES		1.30		
	52										1.50	PID	4ppm
											1.70		
		2									2		
		2.20	FILL / Silty CLAY: grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets and fine to medium igneous gravel.		FILL				ES		2.20	PID	4ppm
		2.30	CLAY (CI-CH): pale red-brown; medium to high plasticity.		ALV				ES		2.30		
									ES		2.40		
	51										2.60		
									ES		2.70		
		3	Test Pit discontinued at 2.90m depth. Target depth reached.								2.90		
	50												

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.6 AHD
COORDINATE: E:297563.1, N:6256025.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP251
PROJECT No: 207476.06
DATE: 10/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[^] / DENSITY.[^]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
10/07/24 No free groundwater observed	53	FILL / Silty CLAY: pale grey, pale brown, brown and red-brown; medium to high plasticity; trace fine to medium ironstone gravel.		FILL	ND	w=PL		ES		0.20	PID	7ppm
								ES		0.50	PID	4ppm
										0.70		
	1							ES		1.00	PID	7ppm
										1.20		
	52											
	1.70	FILL / Silty CLAY: pale grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets.		FILL				ES		1.70	PID	3ppm
	1.80	CLAY (CI-CH): pale red-brown; medium to high plasticity; trace rootlets.		ALV						1.80		
										1.90		
	2							ES		2	PID	<1ppm
										2.10		
								* ES		2.30	PID	<1ppm
		Test Pit discontinued at 2.30m depth. Target depth reached.										
	51											
	3											
	50											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [^] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD4/20240710 taken from 2.1-2.3m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
COORDINATE: E:297618.0, N:6256030.9
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP252
PROJECT No: 207476.06
DATE: 10/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(##)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
10/07/24 No free groundwater observed	53 / 0.30	FILL / Silty CLAY: red-brown, brown and pale grey; medium to high plasticity; with fine to medium ironstone gravel; trace rootlets.		FILL		w>PL		ES		0.20	PID	6ppm
		FILL / Silty CLAY: pale grey with red-brown and orange-brown; medium to high plasticity; with fine to medium ironstone gravel.		FILL				ES		0.40 0.60	PID	3ppm
	1							ES		0.90 1 1.10	PID	5ppm
	52 / 1.30	FILL / Silty Sandy CLAY: pale brown and red-brown; low to medium plasticity; fine to medium sand; trace fabric and fine to medium ironstone gravel.		FILL	ND	w=PL		ES		1.40 1.60	PID	9ppm
	2 / 2.10	FILL / Silty CLAY: pale brown and grey-brown; low to medium plasticity; with fine to medium sand; trace rootlets.		FILL				ES		2 2.20 2.30	PID	3ppm
	51 / 2.30	CLAY (CI-CH): pale orange-brown; medium to high plasticity; trace rootlets.		ALV				ES ES		2.40 2.60	PID PID	<1ppm <1ppm
		Test Pit discontinued at 2.80m depth. Target depth reached.								2.80		
	3 / 50											

NOTES: (##)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS: *Field replicate BD1/20240710 taken from 2.4-2.6m

OPERATOR: A&A Hire Service
LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4 AHD
COORDINATE: E:297600.5, N:6256005.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP253
PROJECT No: 207476.06
DATE: 10/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(##)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
10/07/24 No free groundwater observed	53	FILL / Silty CLAY: red-brown with pale grey; medium to high plasticity; trace rootlets (0-0.2m) and fine to medium ironstone gravel.		FILL	ND	w=PL		ES		0.20	PID	<1ppm
		From 0.50m: red-brown, dark brown and pale grey; with fine to medium sand.						ES		0.50 0.70	PID	3ppm
	1	From 1.70m: red-brown and brown.						ES		1.00 1.20	PID	2ppm
	52	1.90 CLAY (CI-CH): pale brown; medium to high plasticity; trace rootlets.		ALV		w<PL		ES		2.00 2.20	PID	<1ppm
	51							ES		2.30 2.50	PID	<1ppm
	2	Test Pit discontinued at 2.50m depth. Target depth reached.										
	3											
	50											

NOTES: (##) Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.8 AHD
COORDINATE: E:297422.3, N:6256226.9
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: TP254
PROJECT No: 207476.06
DATE: 16/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/07/24 No free groundwater observed	54 / 0	FILL / Clayey Silty SAND: red-brown and brown; fine to medium; low to medium plasticity clay; low to medium plasticity silt; trace rootlets, timber fragments, fine to medium igneous and ironstone gravel.		FILL	ND	M		ES		0.20	PID	2ppm
								ES		0.50	PID	<1ppm
										0.70		
	1							ES		1.00	PID	2ppm
										1.20		
	1.50 / 53	FILL / Silty Sandy CLAY: dark grey; low to medium plasticity; fine to medium sand; trace rootlets and fine to medium igneous gravel.		FILL		w>PL		ES		1.60	PID	2ppm
	2									1.80		
										2		
										2.60		
								ES			PID	3ppm
	52 / 3	Test Pit discontinued at 2.80m depth. Limit of excavator.								2.80		
	51											

NOTES: [#] Soil origin is "probable" unless otherwise stated. [*] Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne excavator
METHOD: TB (400)
REMARKS:

OPERATOR: A&A Hire Service

LOGGED: PJ

Refer to explanatory notes for symbol and abbreviation definitions

Generated with CORE-GS by Geroc - Soil Log

Douglas PARTNERS

CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

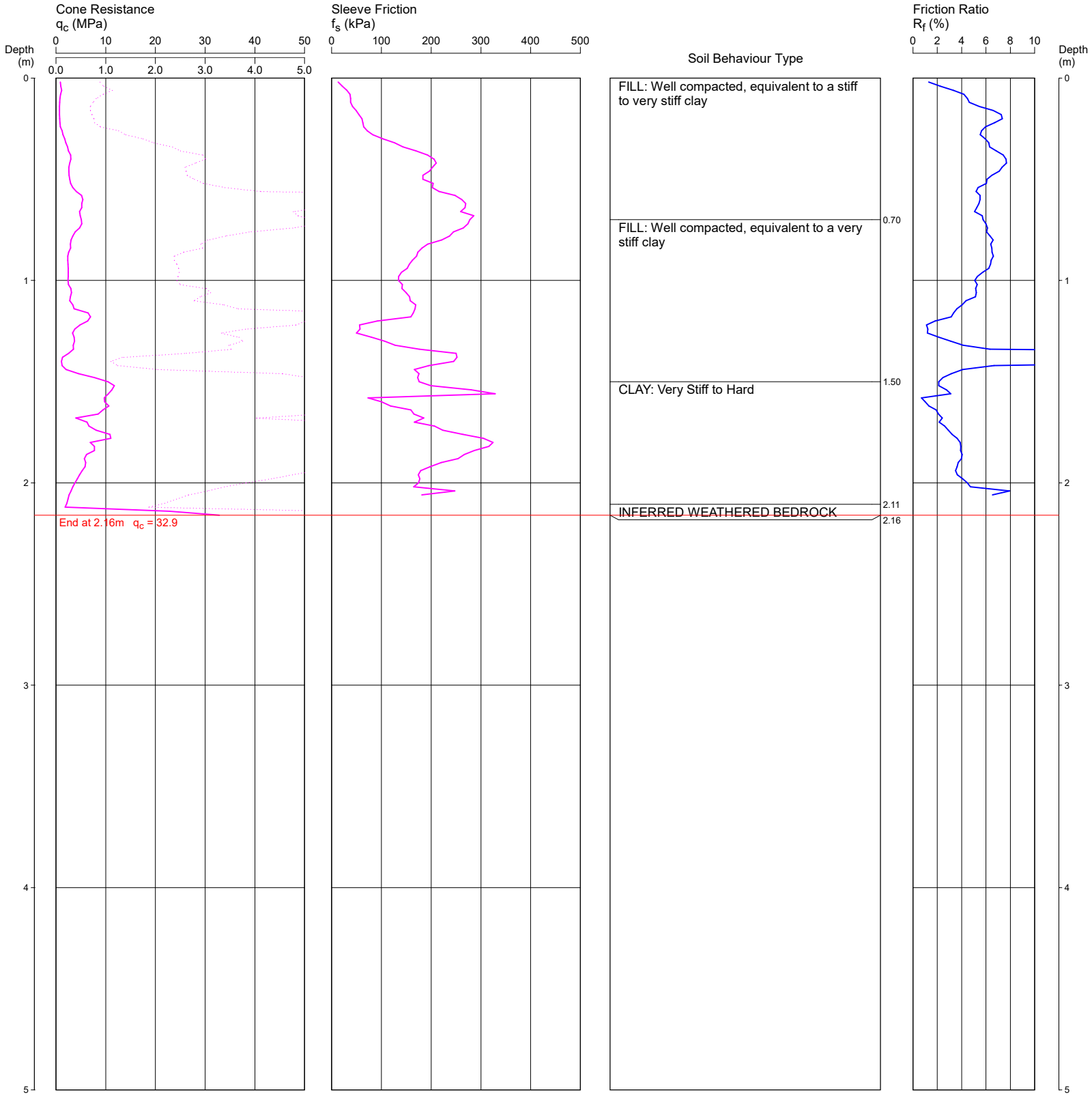
REDUCED LEVEL: 54.5

COORDINATES: 297352.0E 6256120.0N MGA2020

CPT301

DATE 16/07/2024

PROJECT No: 207476.07



REMARKS: TEST DISCONTINUED DUE TO BENDING ON (or NEAR) INFERRED WEATHERED ROCK
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT301.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

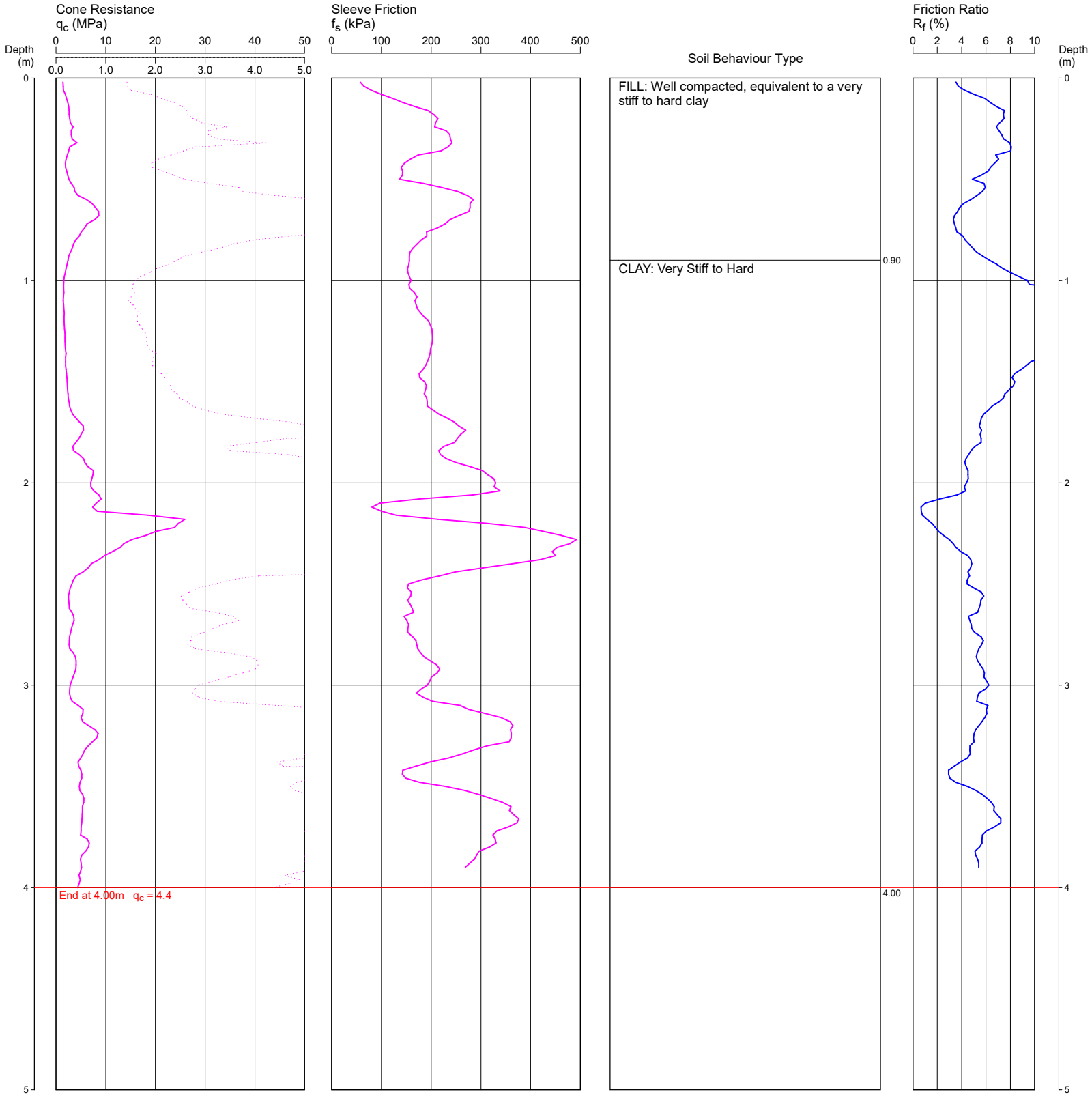
REDUCED LEVEL: 54.9

COORDINATES: 297355.4E 6256068.1N MGA2020

CPT302

DATE 16/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT302.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

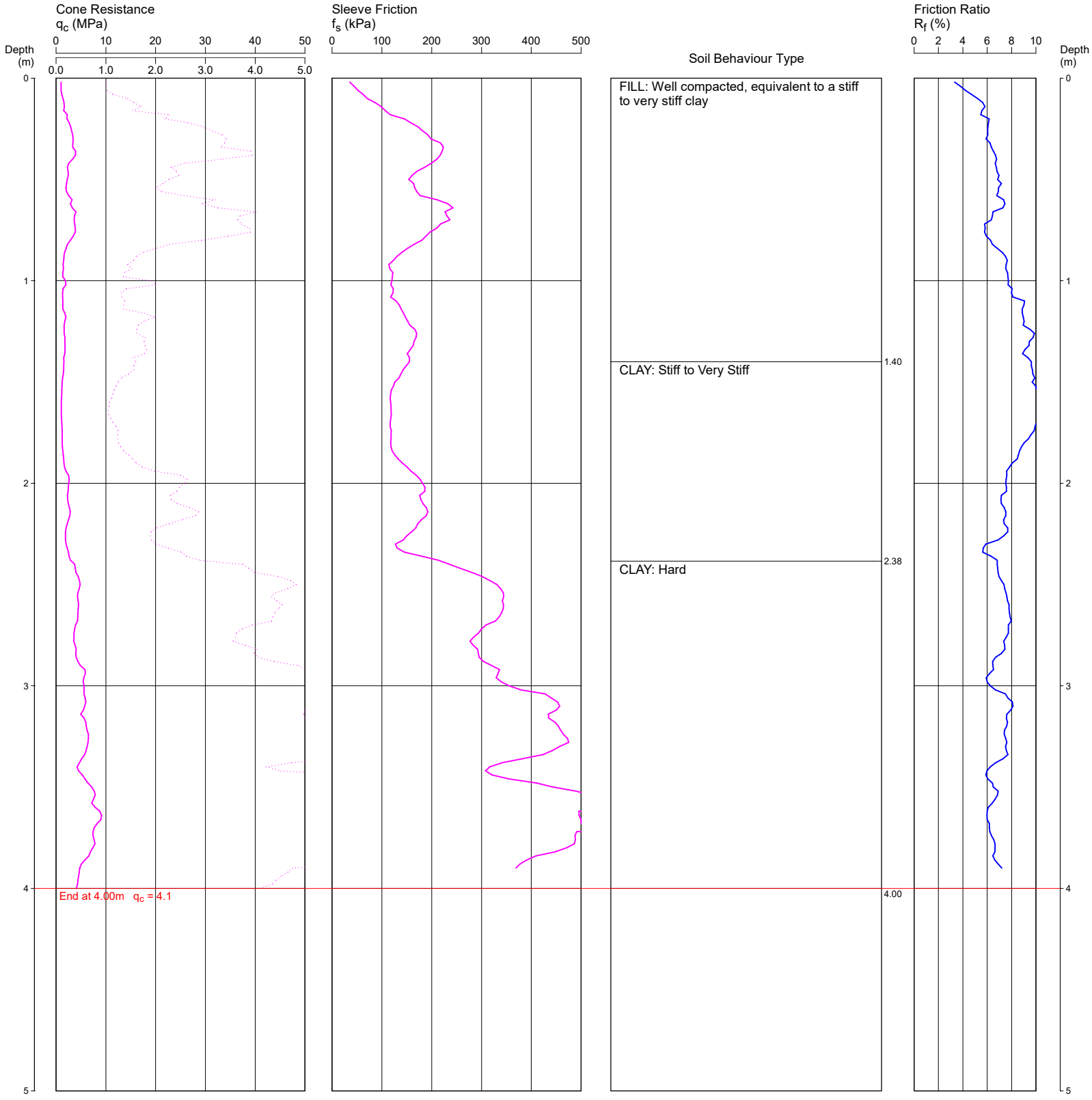
REDUCED LEVEL: 55.4

COORDINATES: 297360.0E 6256017.2N MGA2020

CPT303

DATE 16/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT303.CP5
Cone ID: 190722 **Type:** I-CFXY-10

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

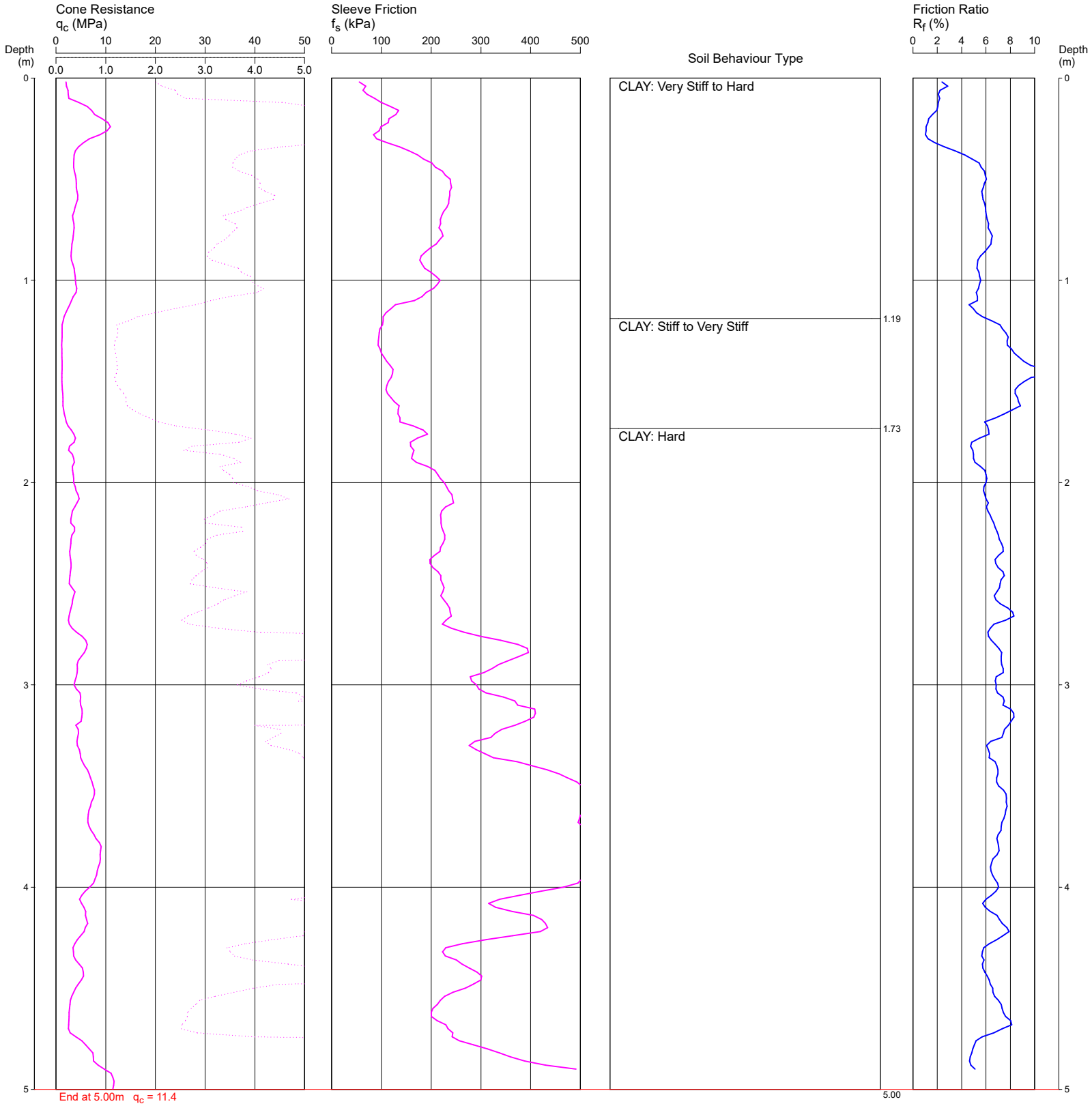
REDUCED LEVEL: 55.4

COORDINATES: 297375.0E 6255953.4N MGA2020

CPT304

DATE 16/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT304.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

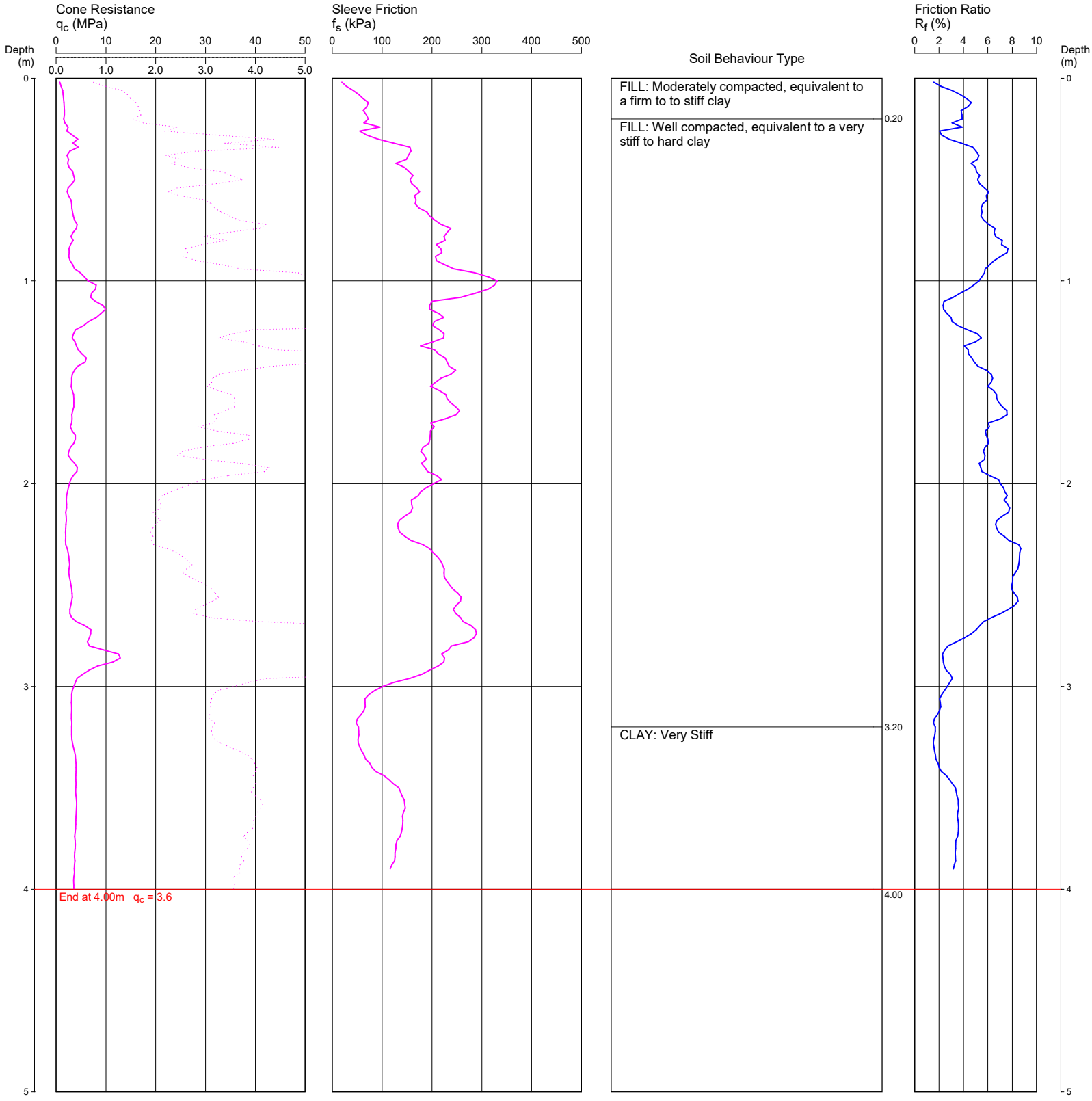
REDUCED LEVEL: 53.5

COORDINATES: 297406.6E 6256174.8N MGA2020

CPT305

DATE 16/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT305.CP5
Cone ID: 190722 **Type:** I-CFXY-10

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

REDUCED LEVEL: 53.9

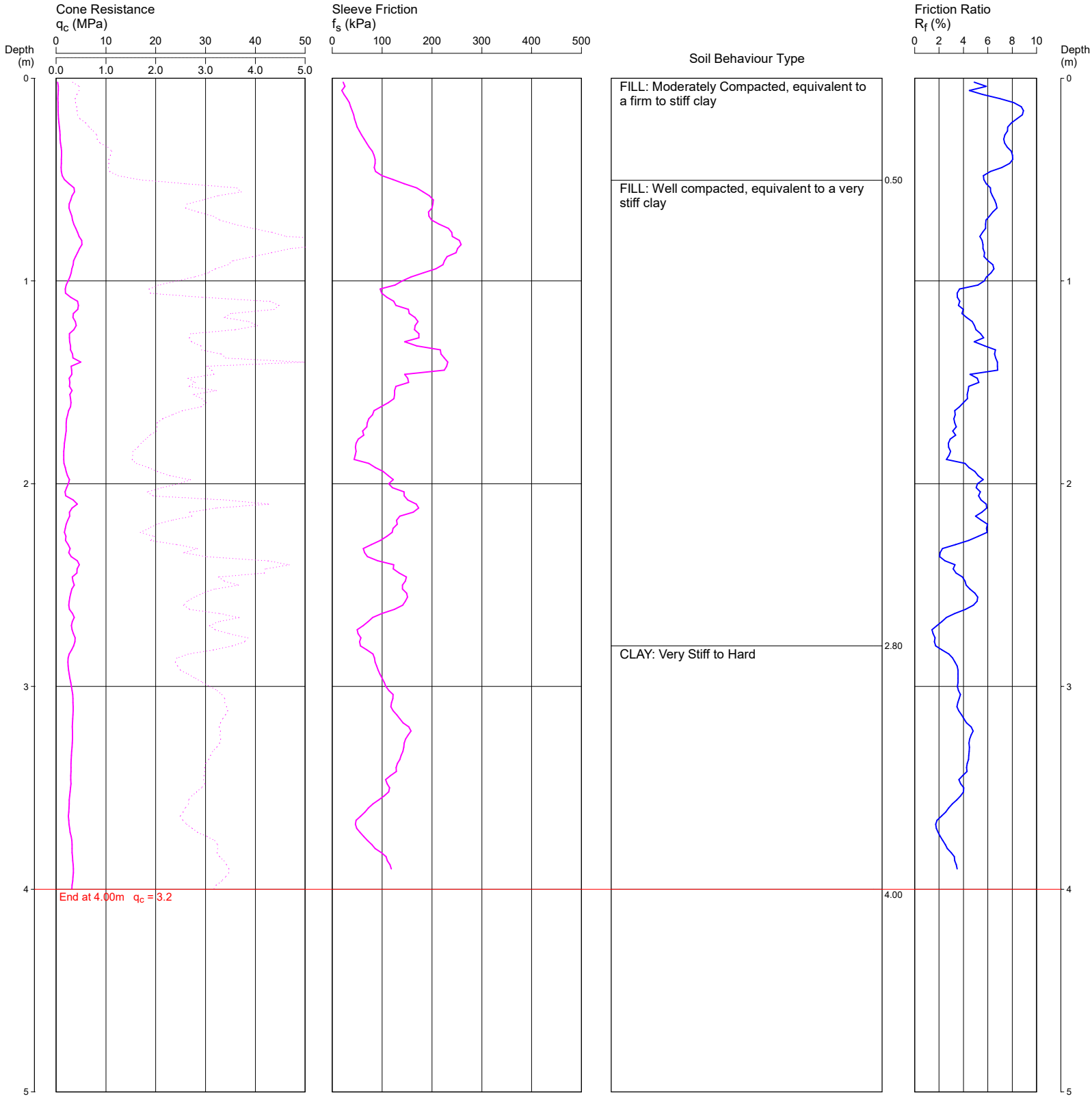
COORDINATES: 297409.5E 6256129.4N MGA2020

CPT306

Page 1 of 1

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT306.CP5
Cone ID: 190722 **Type:** I-CFXY-10

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

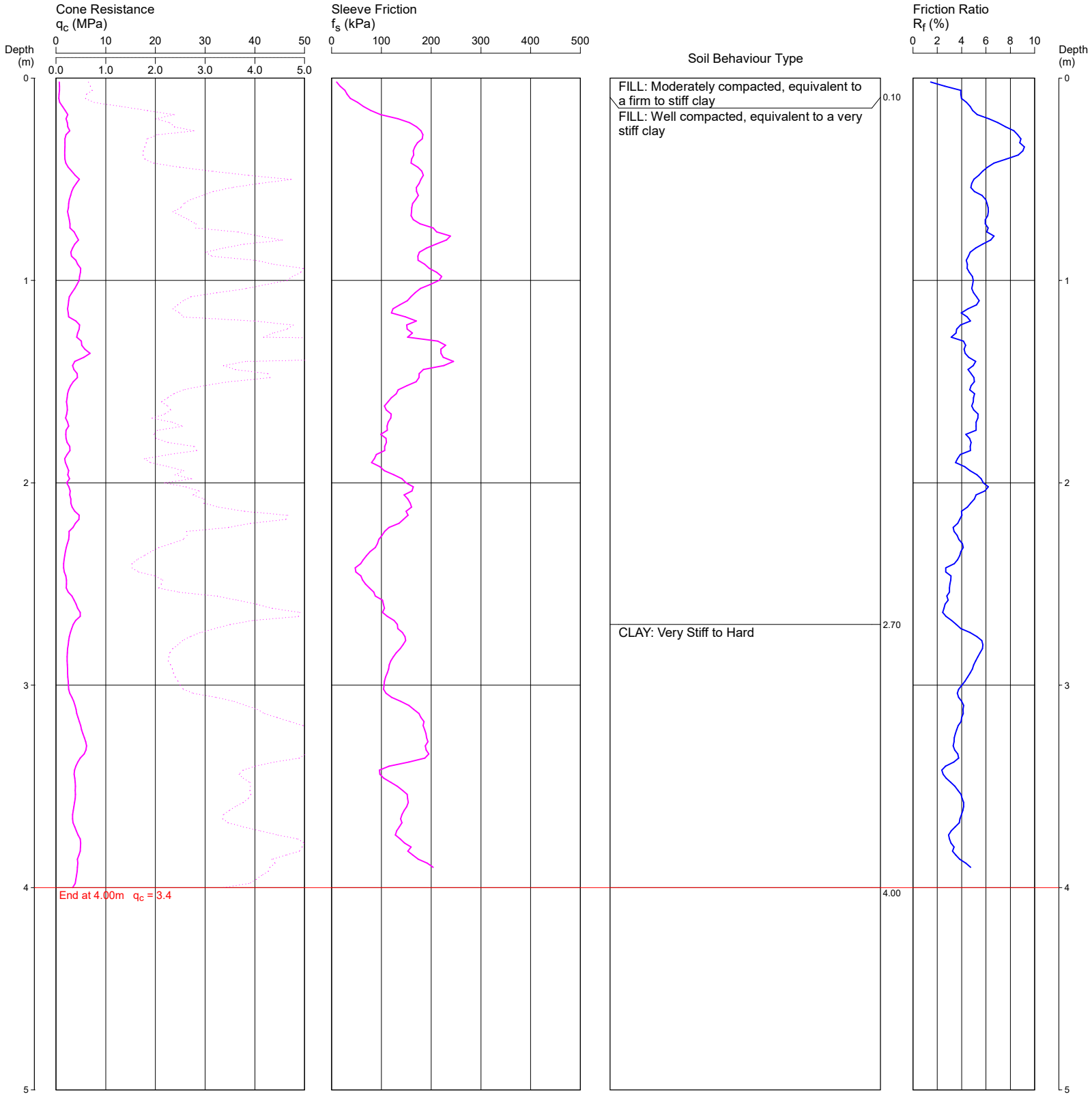
REDUCED LEVEL: 54.2

COORDINATES: 297404.9E 6256088.0N MGA2020

CPT307

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT307.CP5
Cone ID: 190722 **Type:** I-CFXY-10

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

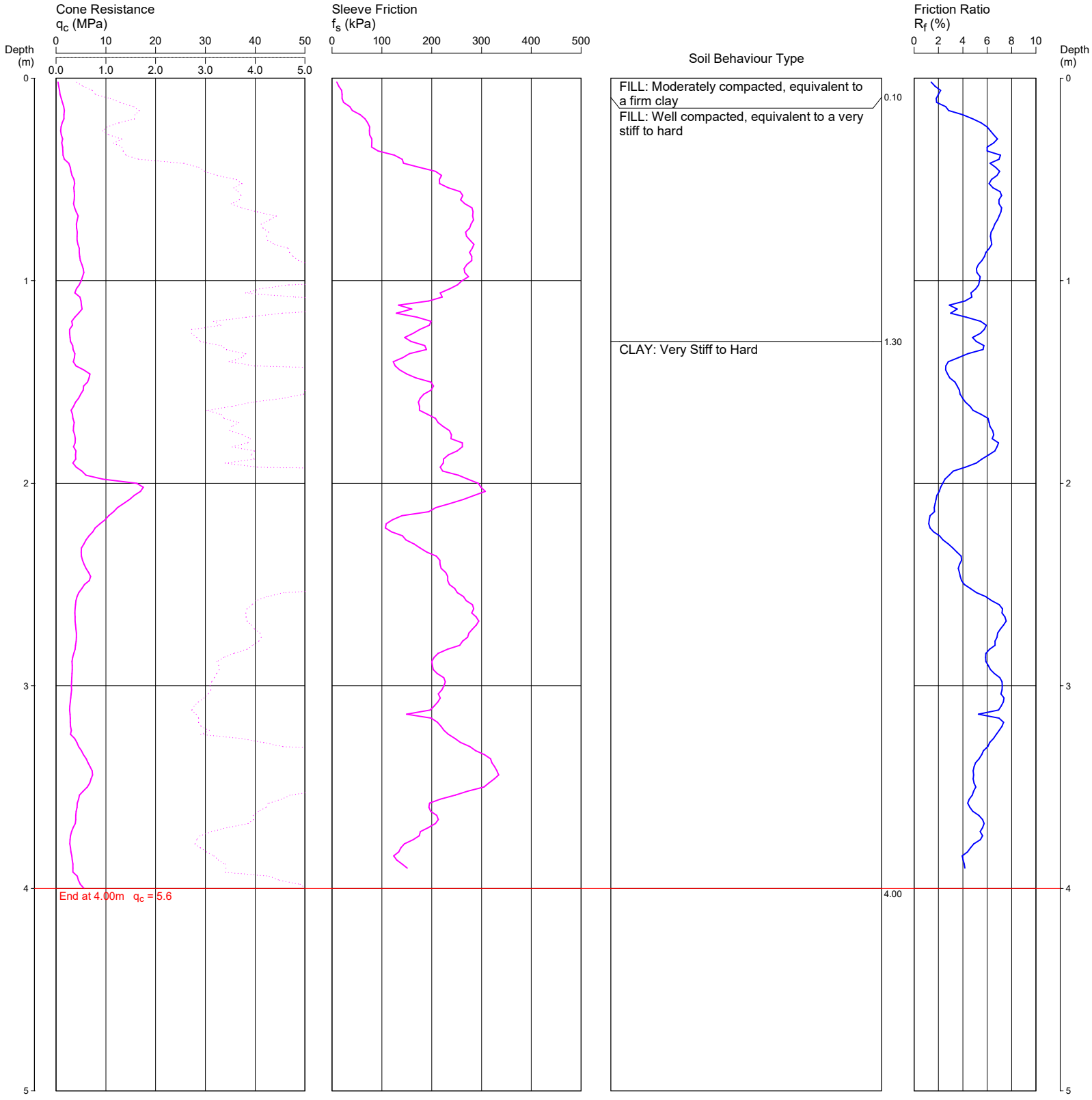
REDUCED LEVEL: 54.5

COORDINATES: 297418.3E 6256030.2N MGA2020

CPT308

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT308.CP5
Cone ID: 190722 **Type:** I-CFXY-10

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

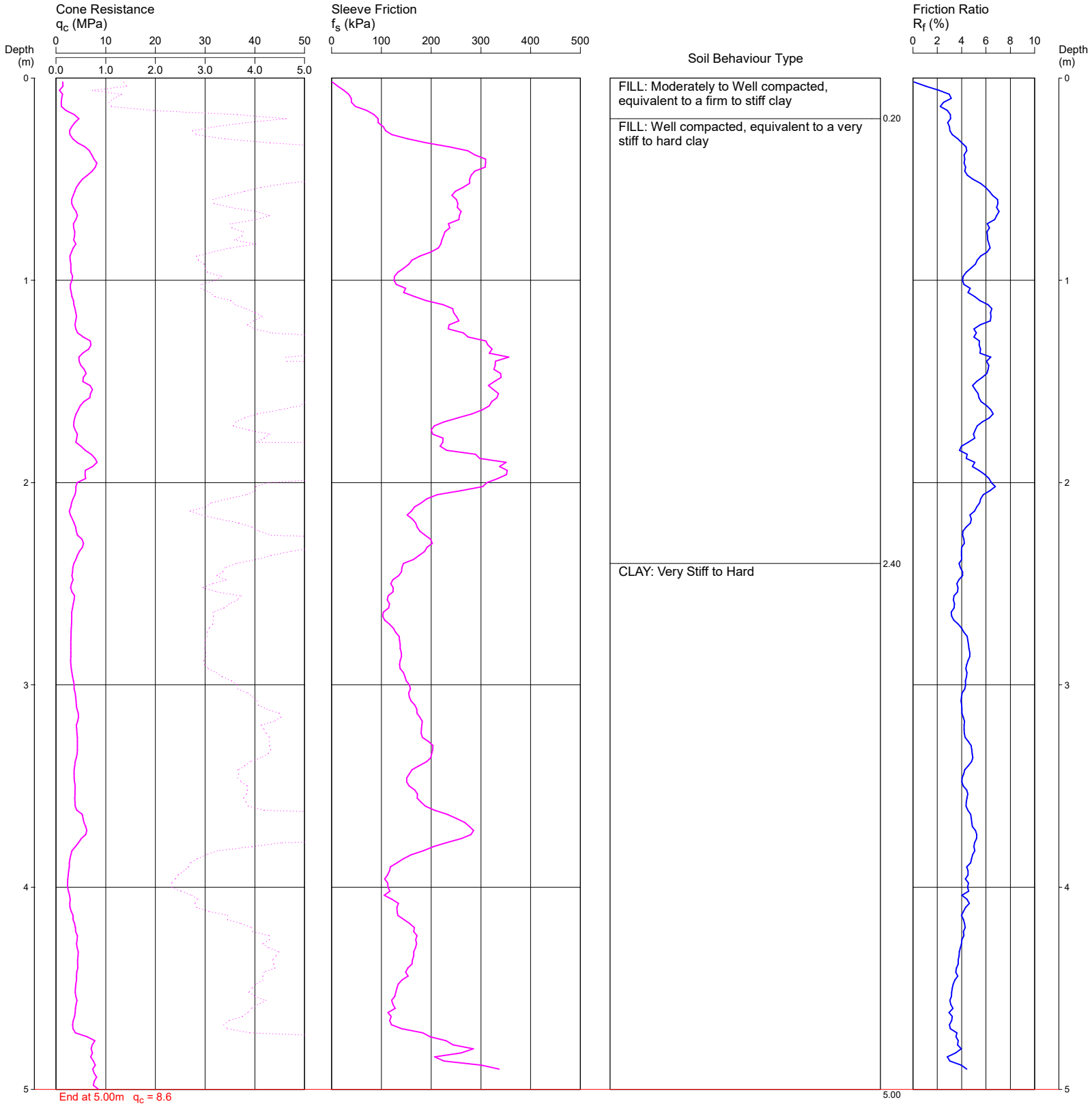
REDUCED LEVEL: 54.7

COORDINATES: 297428.8E 6255980.0N MGA2020

CPT309

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT309A.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

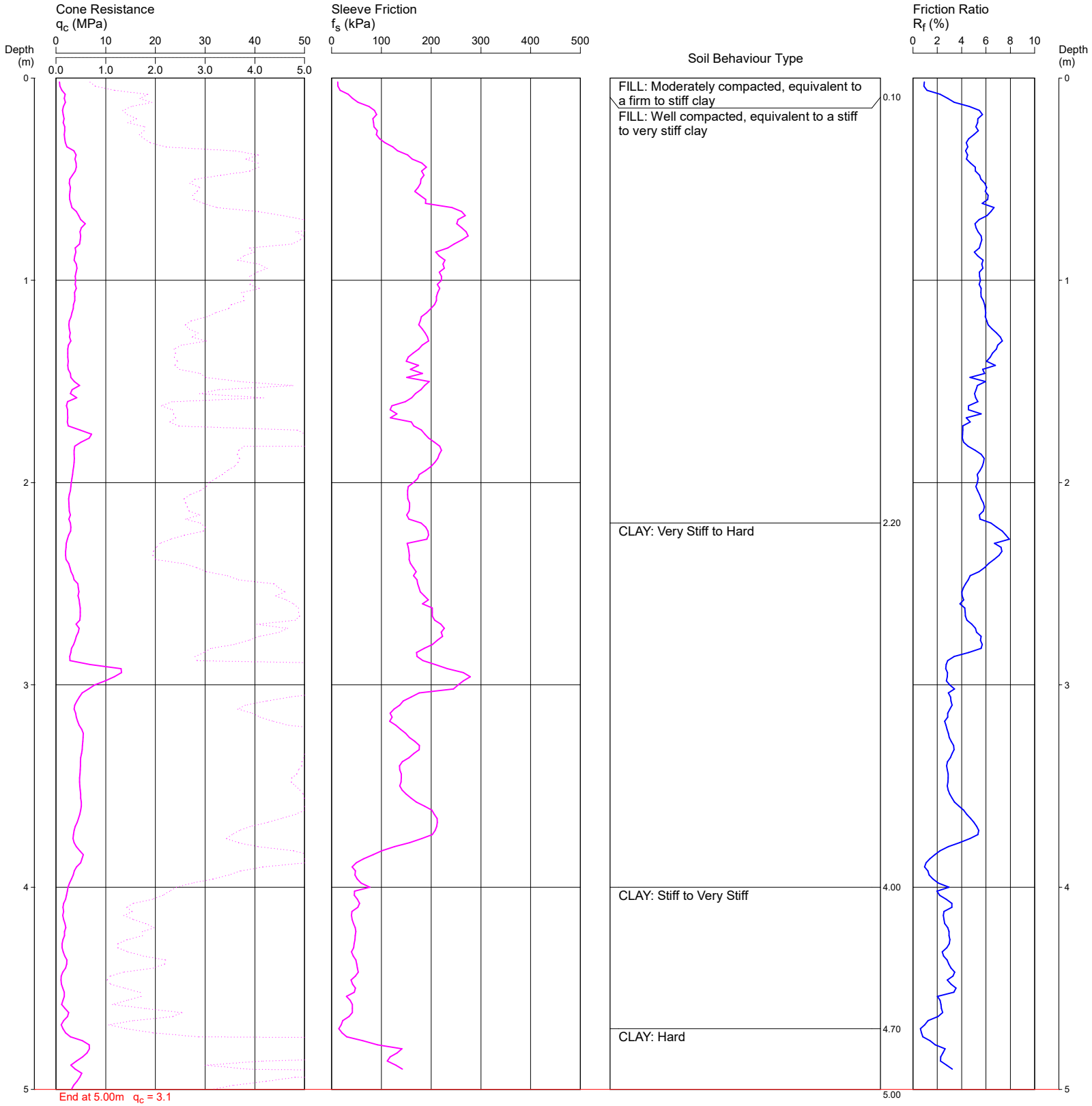
REDUCED LEVEL: 54.3

COORDINATES: 297490.4E 6255990.1N MGA2020

CPT310

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT310.CP5
Cone ID: 190722 **Type:** I-CFXY-10

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

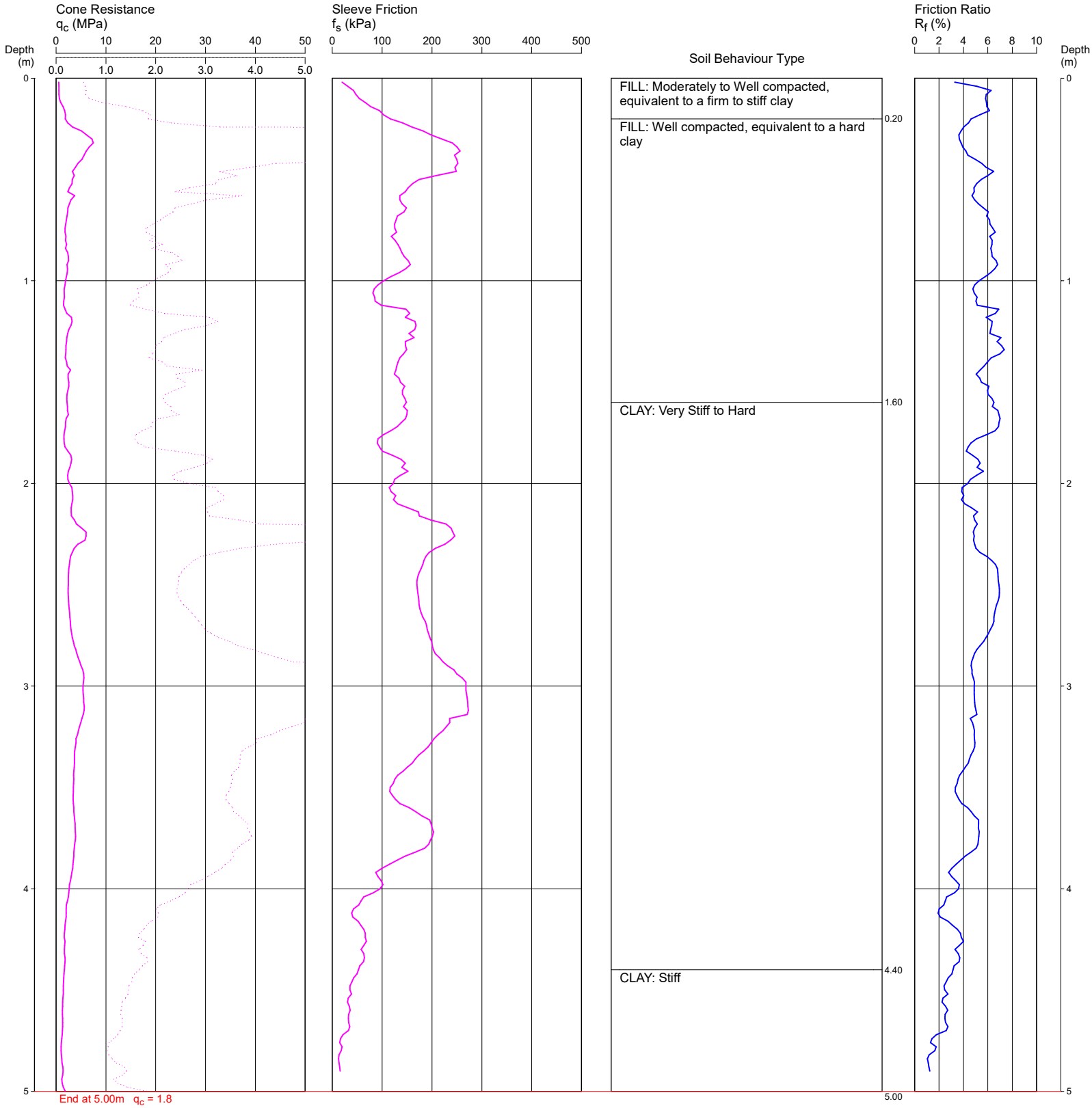
REDUCED LEVEL: 53.8

COORDINATES: 297552.5E 6255999.1N MGA2020

CPT311

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT311.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

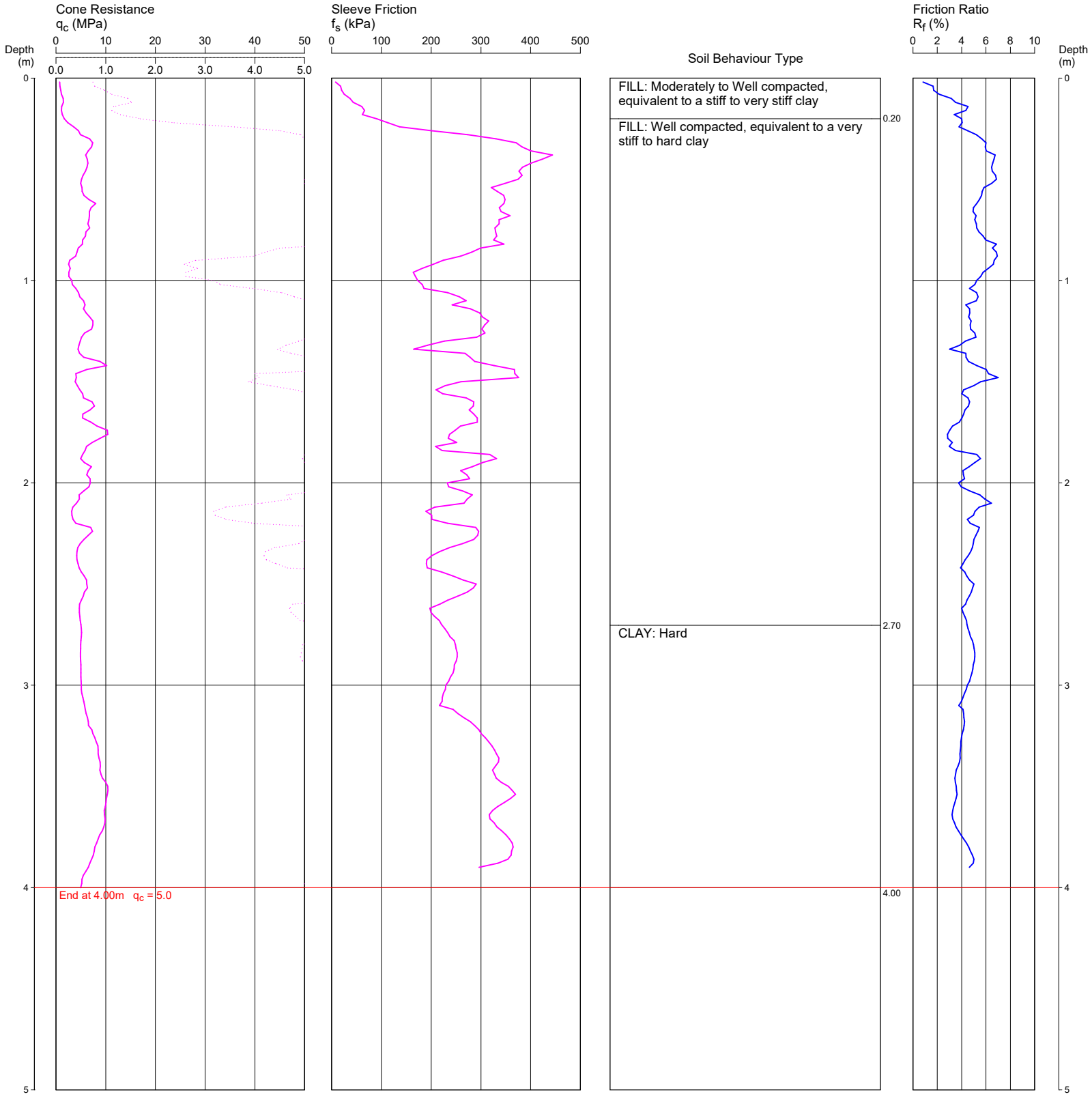
REDUCED LEVEL: 53.6

COORDINATES: 297468.2E 6256095.7N MGA2020

CPT312

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT312.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

REDUCED LEVEL: 53.9

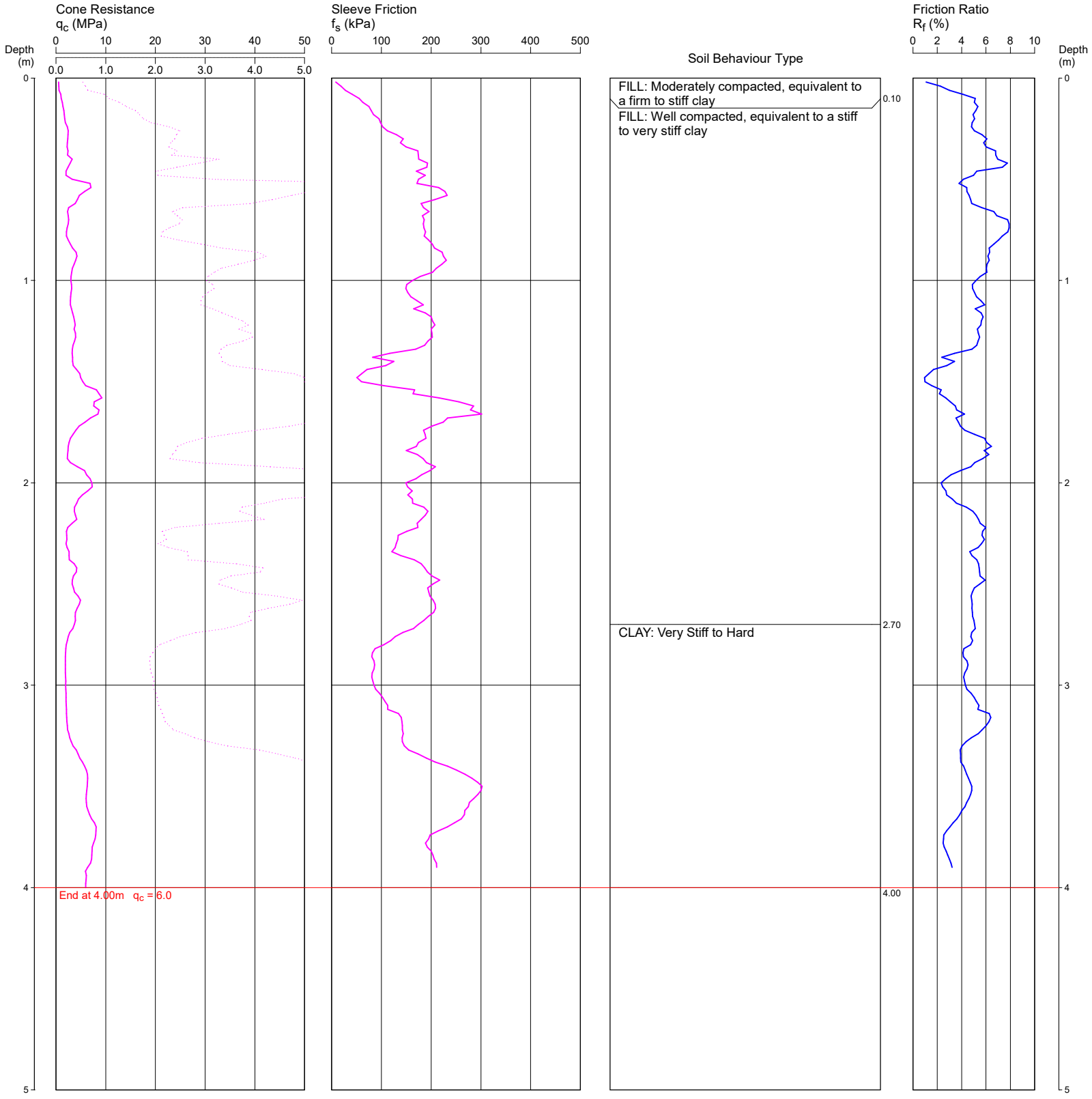
COORDINATES: 297485.3E 6256048.8N MGA2020

CPT313

Page 1 of 1

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT313.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

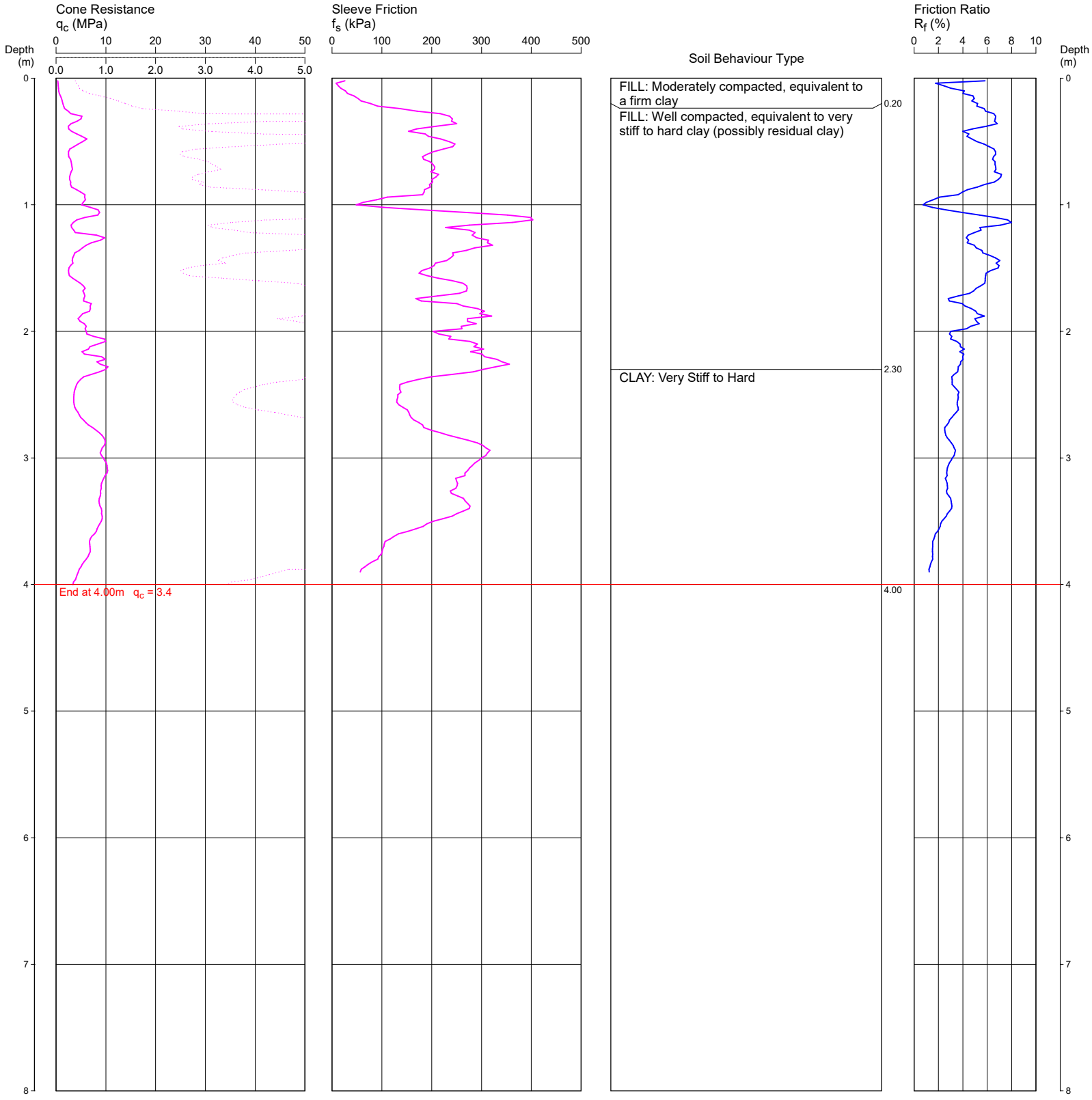
REDUCED LEVEL: 53.3

COORDINATES: 297463.7E 6256144.1N MGA2020

CPT314

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT314.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

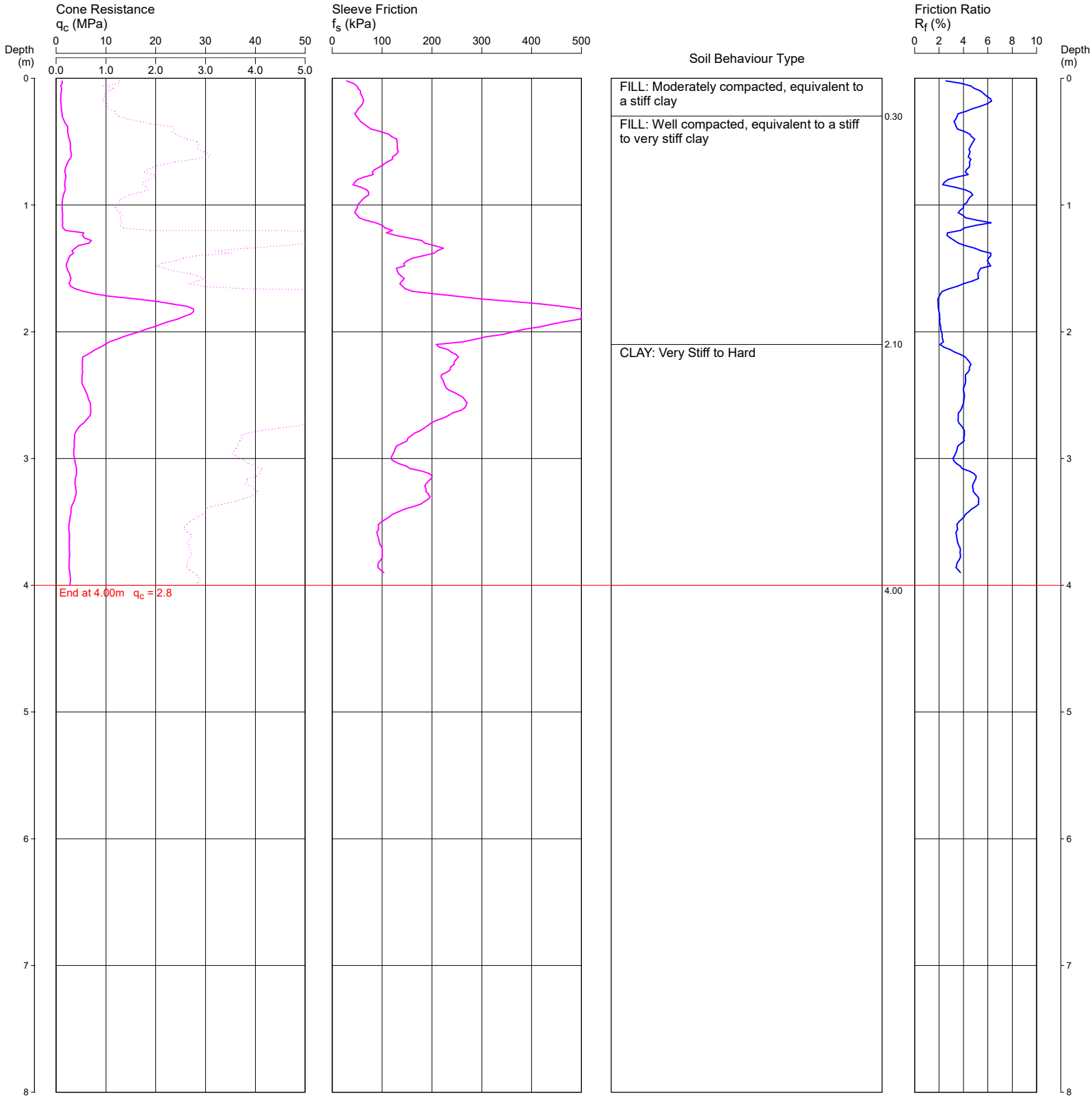
REDUCED LEVEL: 53.2

COORDINATES: 297460.0E 6256238.5N GDA2020

CPT315

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT315.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

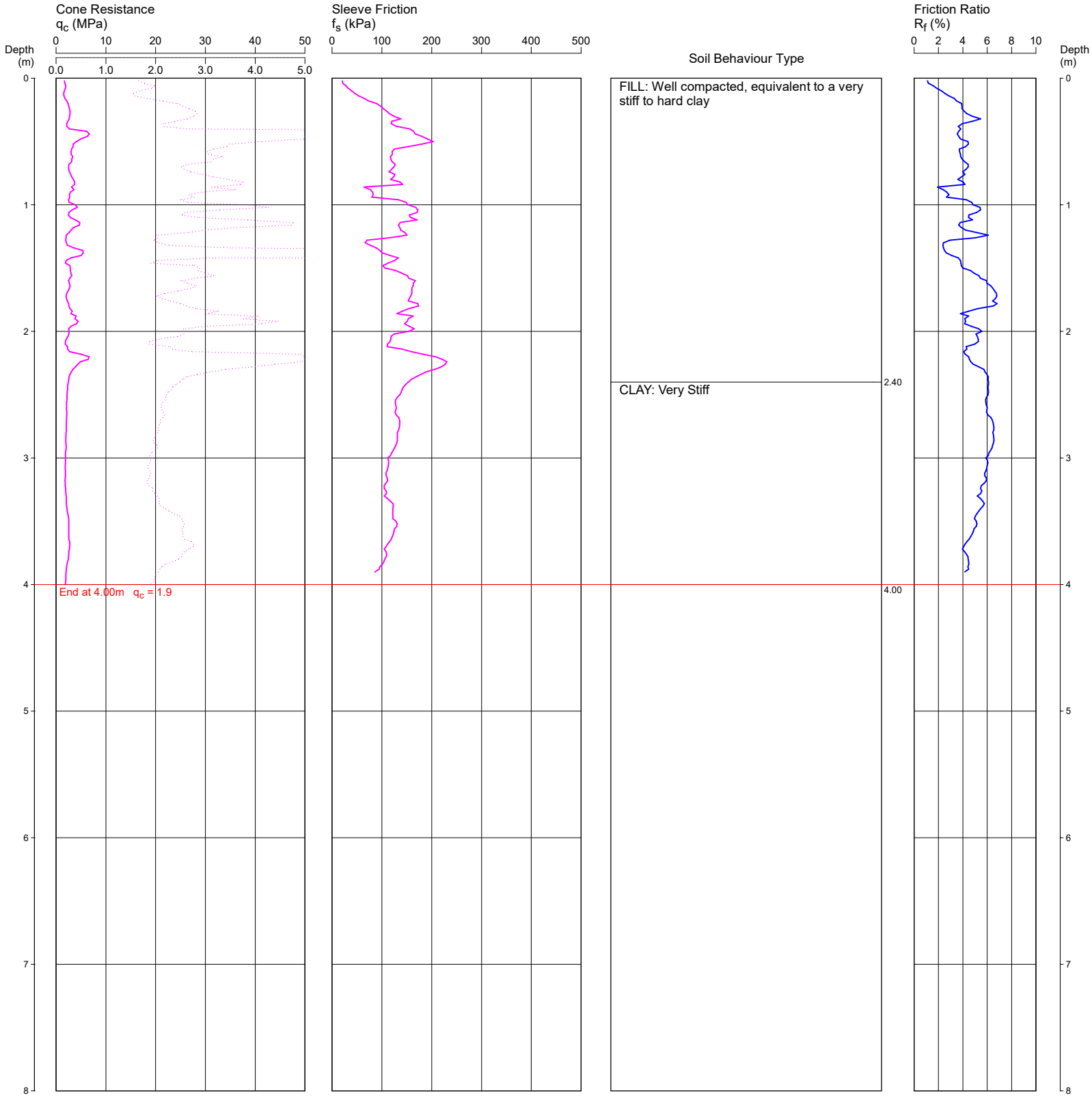
REDUCED LEVEL: 53.2

COORDINATES: 297462.4E 6256200.1N MGA2020

CPT316

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT316.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

REDUCED LEVEL: 53.2

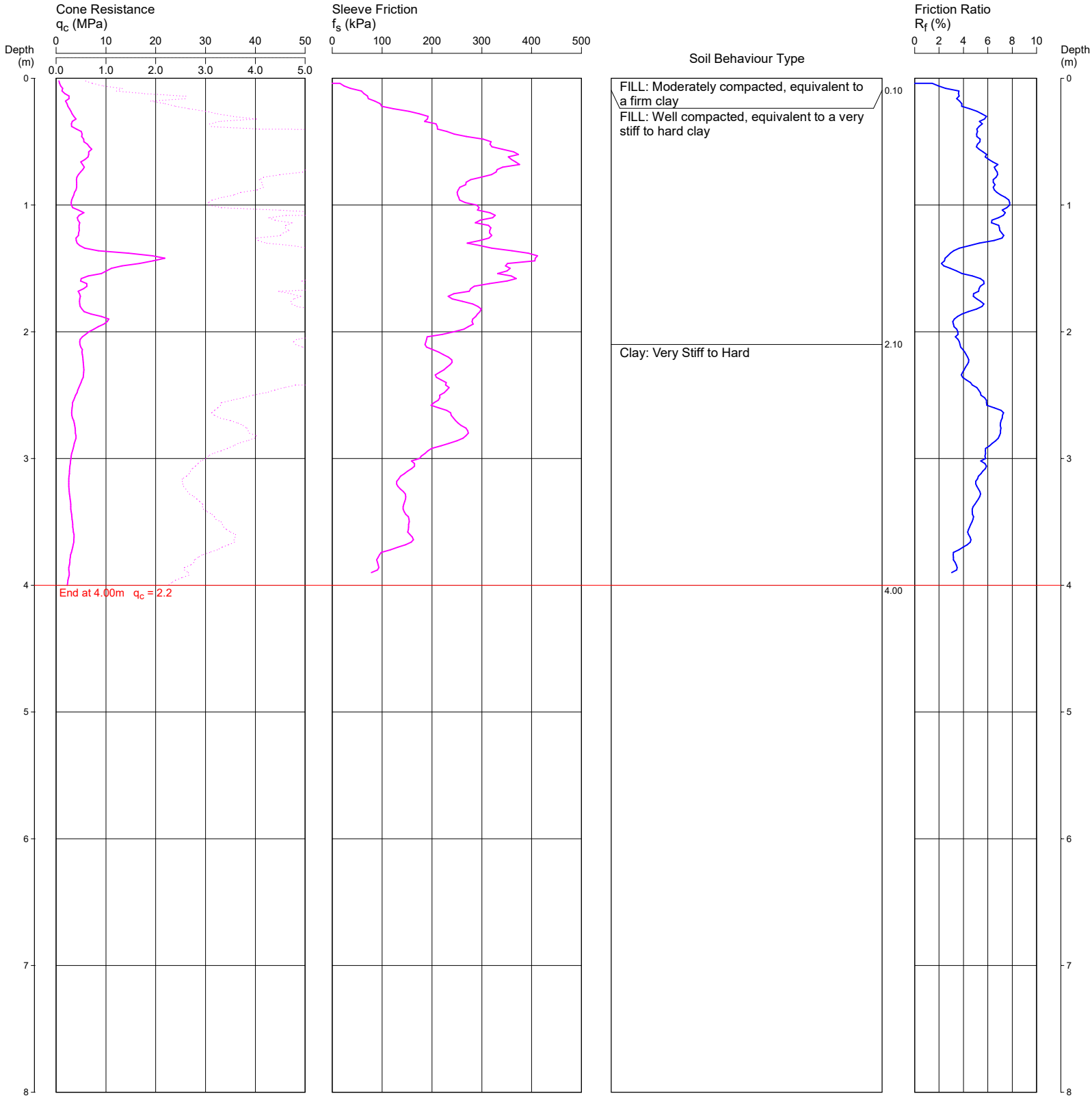
COORDINATES: 297523.4E 6256110.1N MGA2020

CPT317

Page 1 of 1

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT317.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

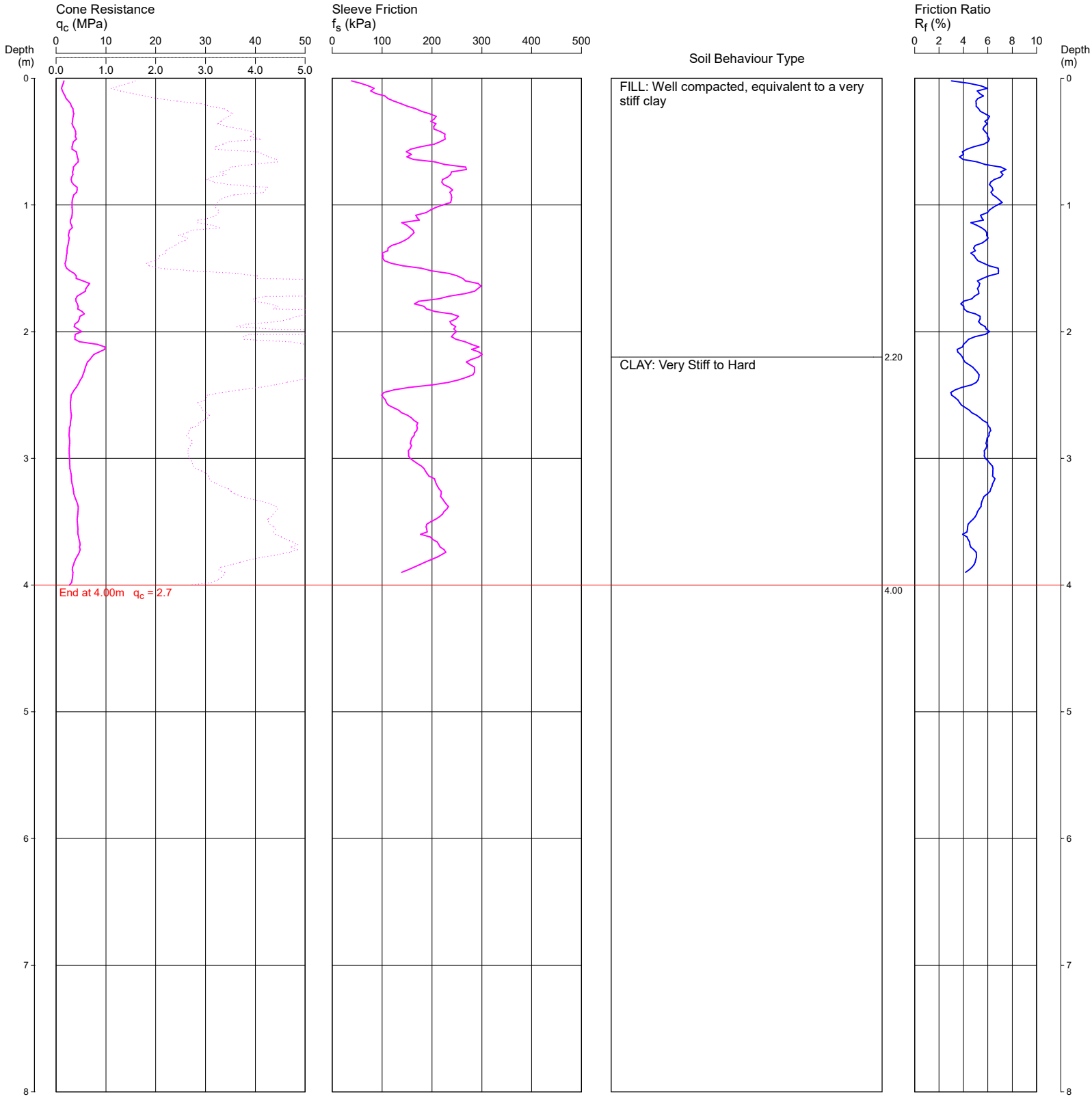
REDUCED LEVEL: 53.5

COORDINATES: 297545.9E 6256060.2N MGA2020

CPT318

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT318.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2

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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

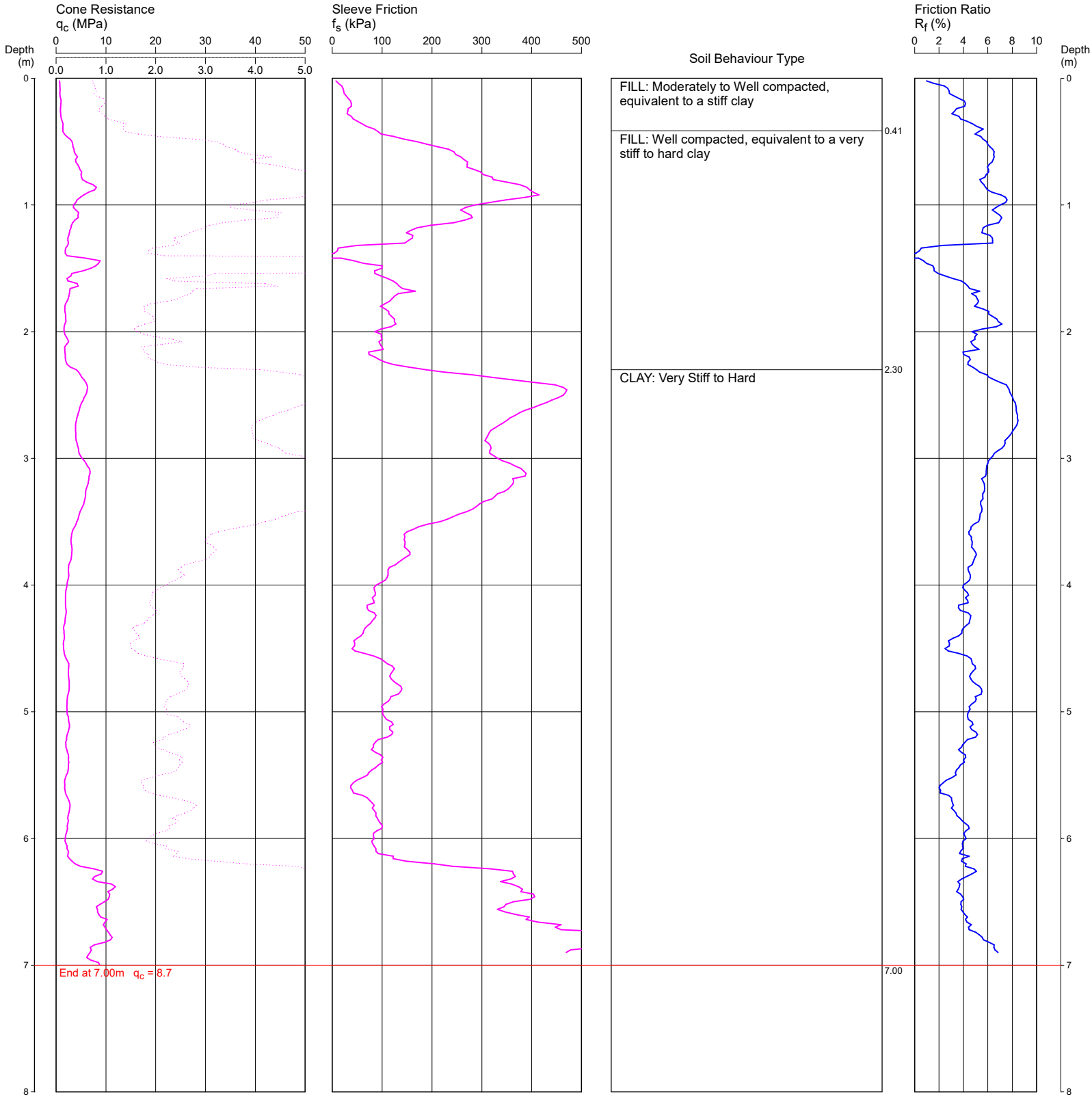
REDUCED LEVEL: 53.4

COORDINATES: 297616.7E 6256010.2N MGA2020

CPT319

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
NO GROUNDWATER OBSERVED AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT319.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

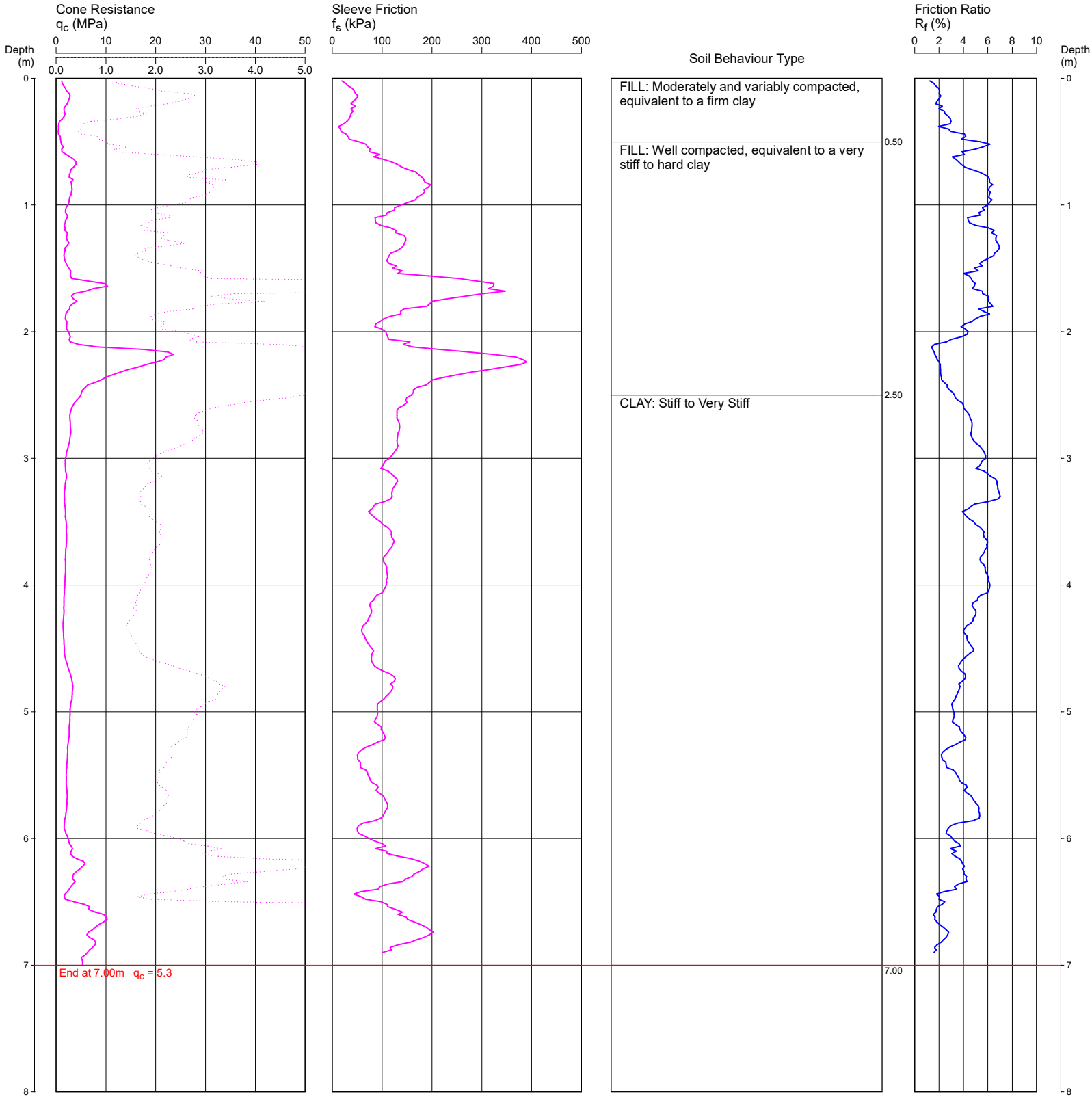
REDUCED LEVEL: 53.2

COORDINATES: 297492.3E 6256288.5N MGA2020

CPT320

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
GROUNDWATER OBSERVED AT 4.85M AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT320.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

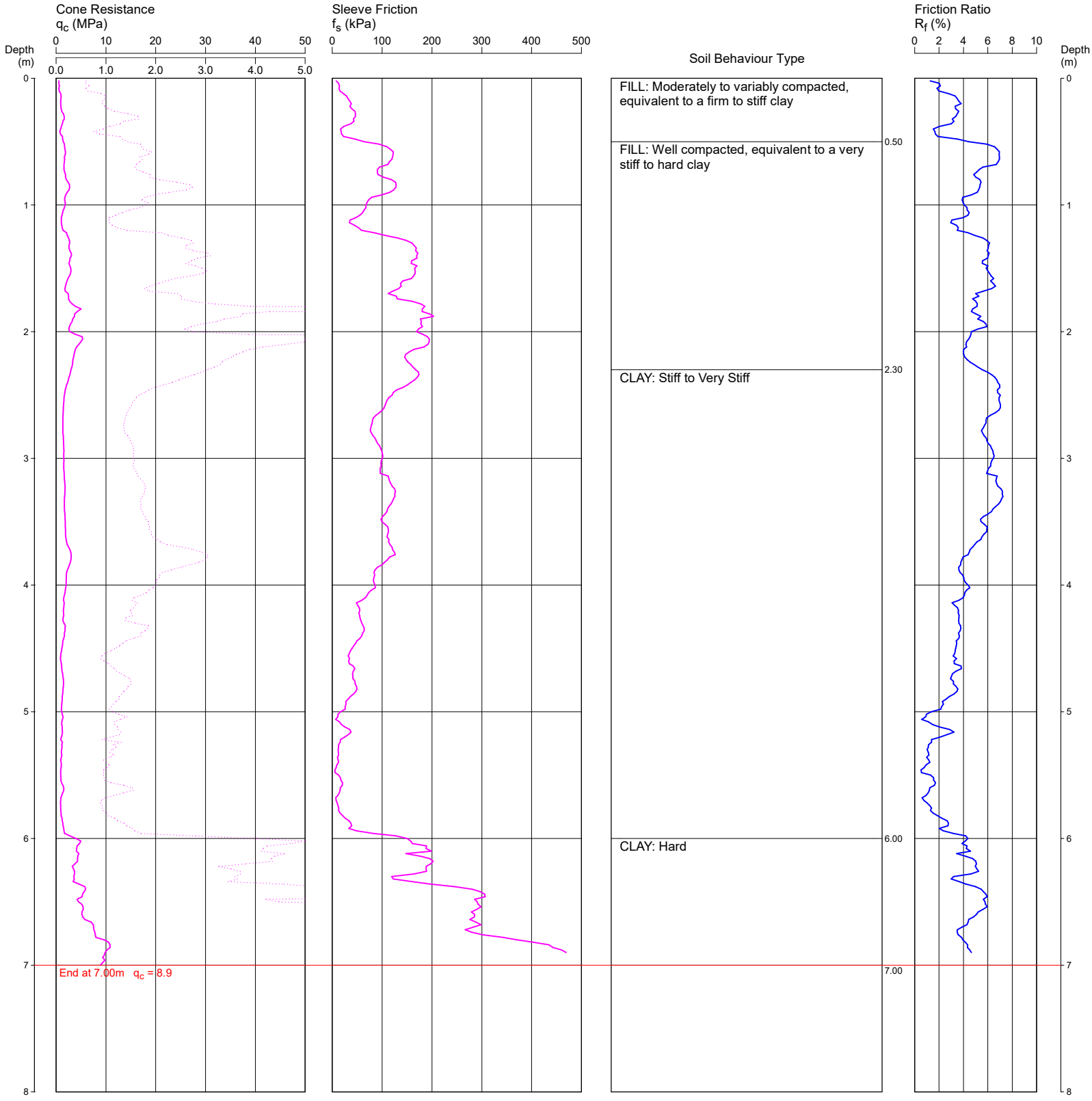
REDUCED LEVEL: 52.9

COORDINATES: 297510.1E 6256251.2N MGA2020

CPT321

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
GROUNDWATER OBSERVED AT 3.7M AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT321.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

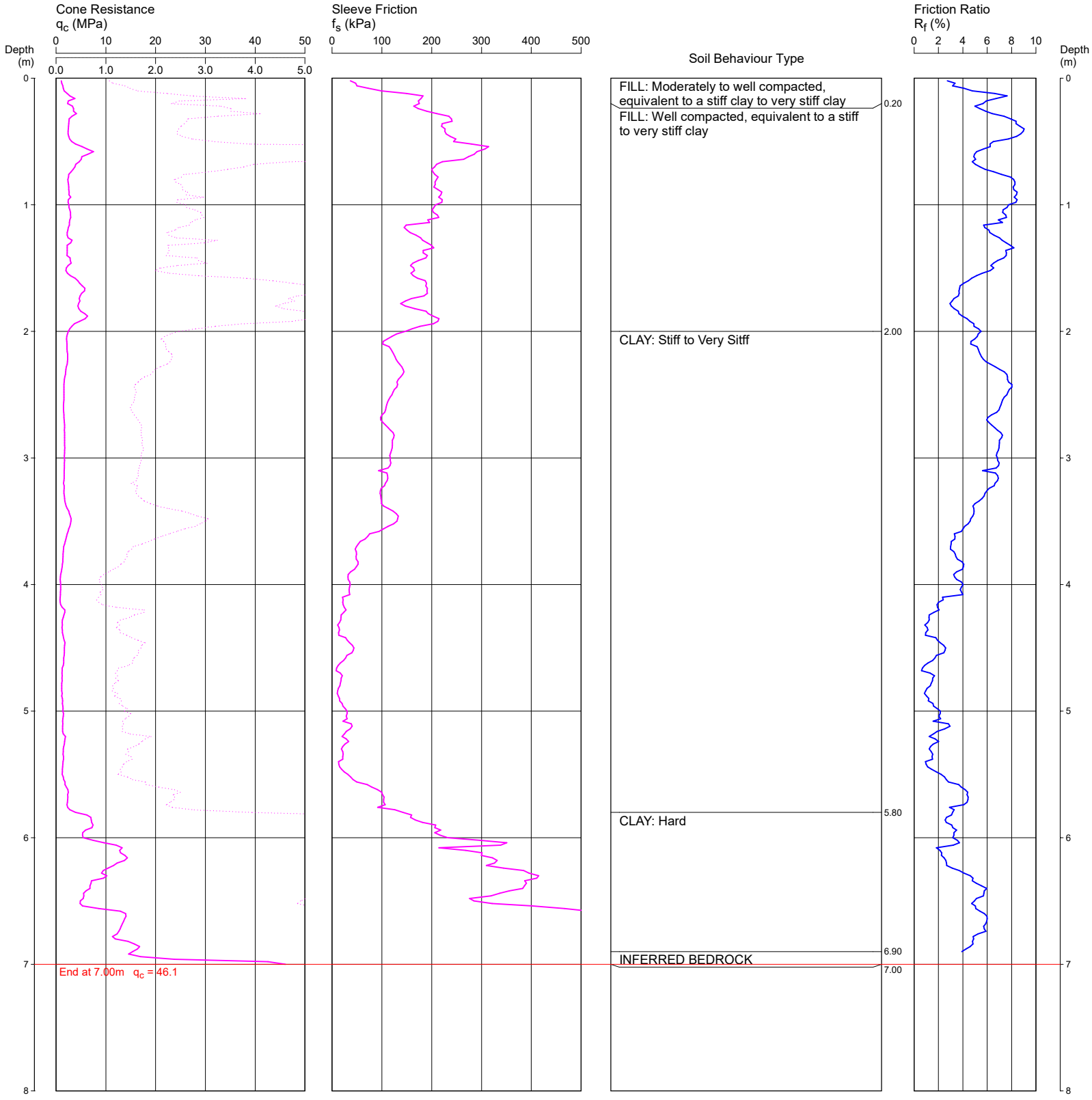
REDUCED LEVEL: 57.8

COORDINATES: 297518.6E 6256208.9N MGA2020

CPT322

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
GROUNDWATER OBSERVED AT 4.0M AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT322.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

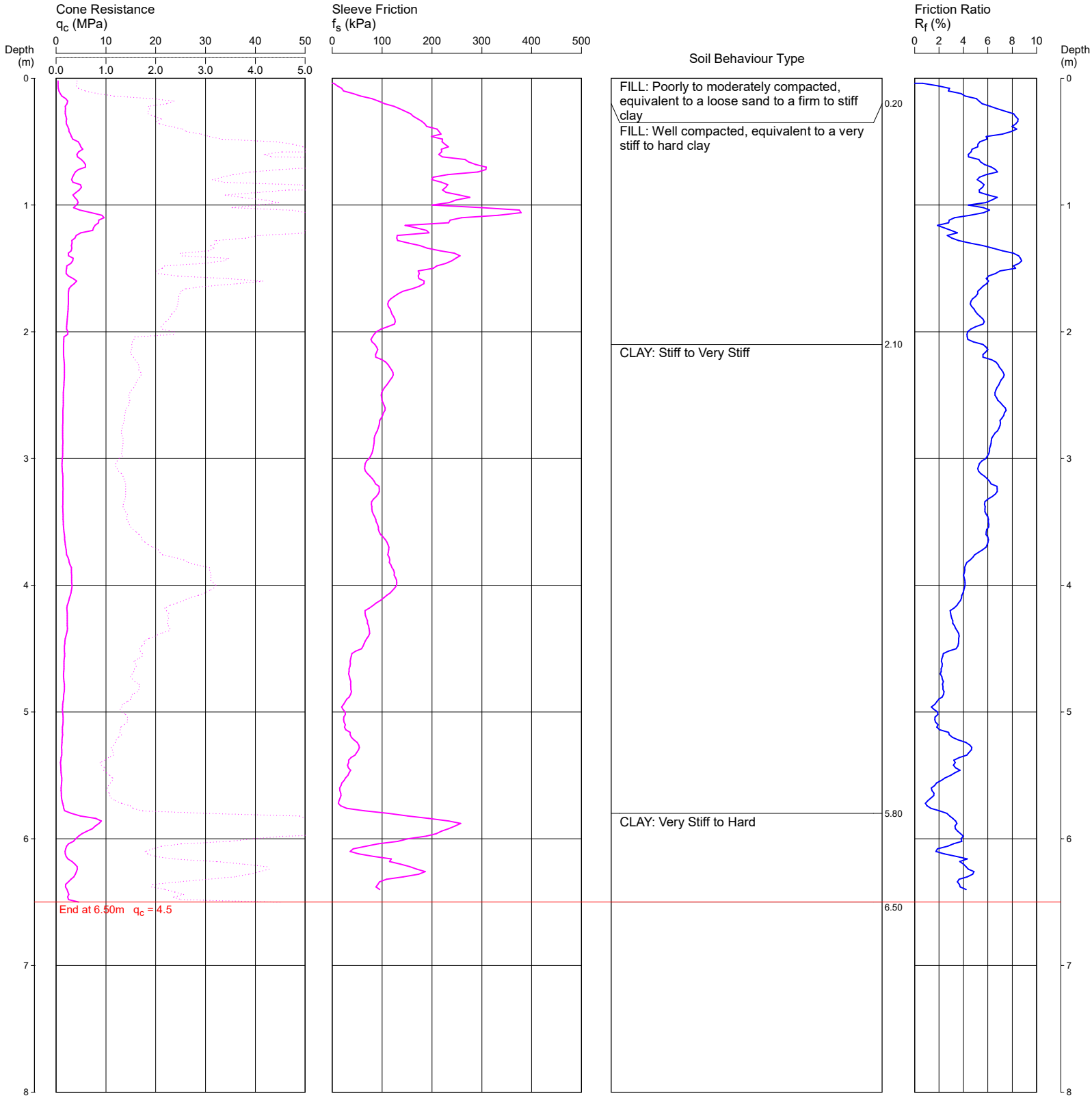
REDUCED LEVEL: 52.8

COORDINATES: 297527.3E 6256165.2N MGA2020

CPT323

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
GROUNDWATER OBSERVED AT 2.7M AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT323.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

REDUCED LEVEL: 53.0

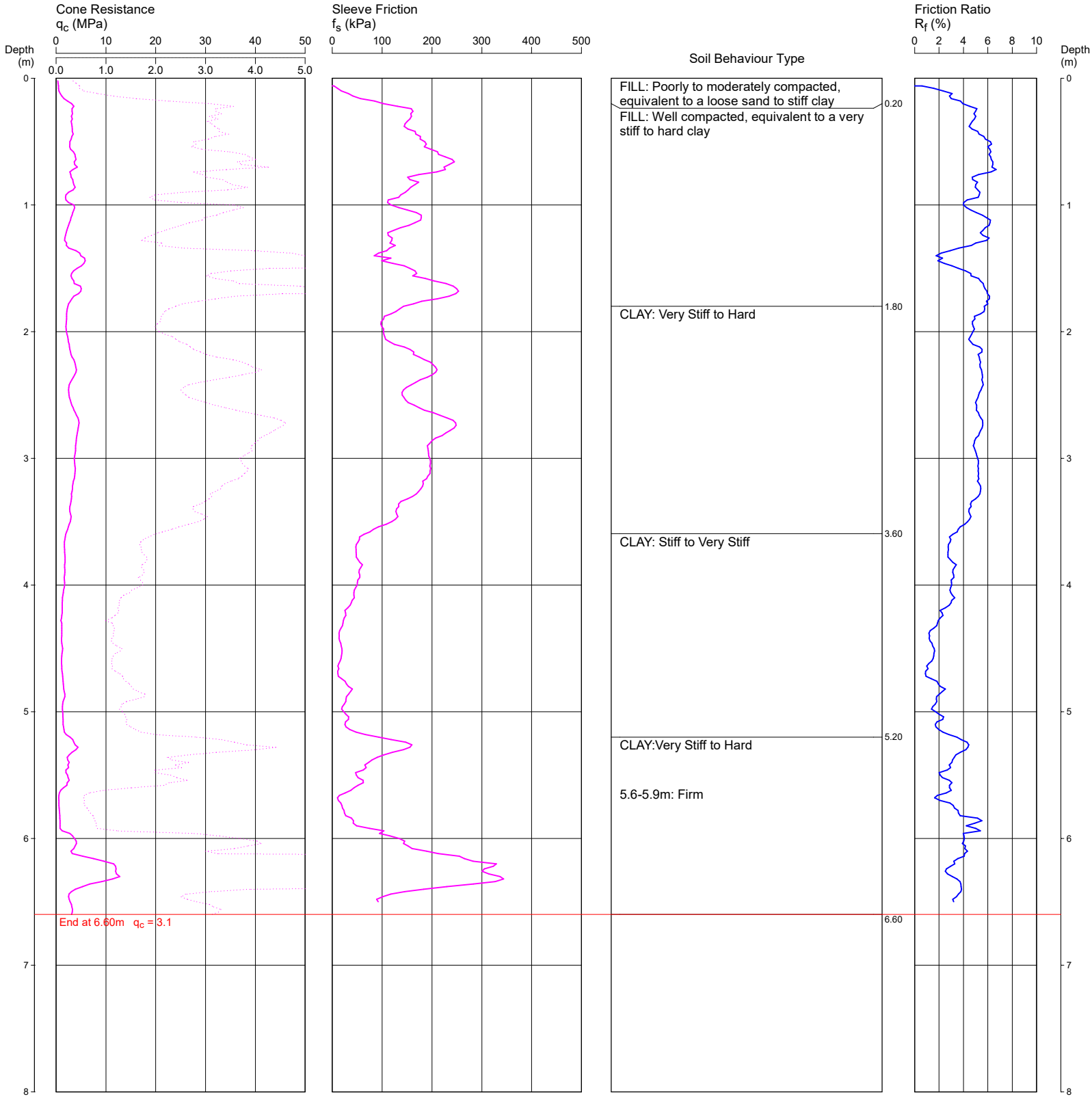
COORDINATES: 297569.0E 6256120.2N MGA2020

CPT324

Page 1 of 1

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
GROUNDWATER OBSERVED AT 3.2M AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT324.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2
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CONE PENETRATION TEST

CLIENT:

PROJECT:

LOCATION: 78 LOCKWOOD ROAD, ERSKINE PARK

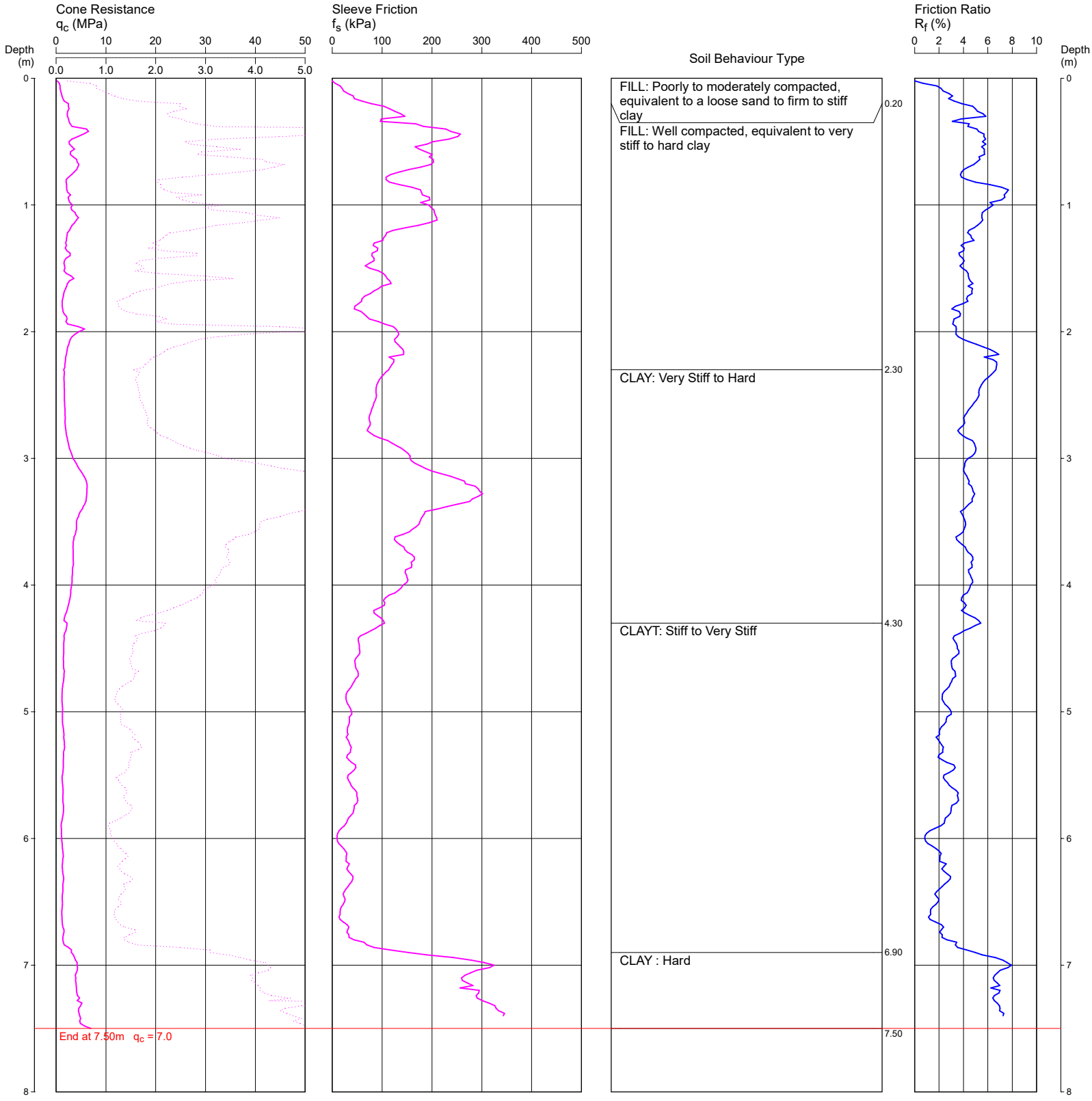
REDUCED LEVEL: 53.3

COORDINATES: 297594.0E 6256064.2N MGA2020

CPT325

DATE 17/07/2024

PROJECT No: 207476.07



REMARKS: TEST TERMINATED AT TARGET DEPTH
HOLE COLLAPSED AT 5.2M AFTER WITHDRAWAL OF RODS

File: P:\207476.07 - ERSKINE PARK, 78 Lockwood Rd, GEO DA\4.0 Field Work\4.2 Testing\CPTs\CP5\CPT325.CP5
Cone ID: 190722 **Type:** I-CFXY-10

ConePlot Version 5.9.2

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Appendix D

Laboratory Test Results

Material Test Report

Report Number: **207476.07-1**
Issue Number: 1
Date Issued: 06/08/2024
Client:

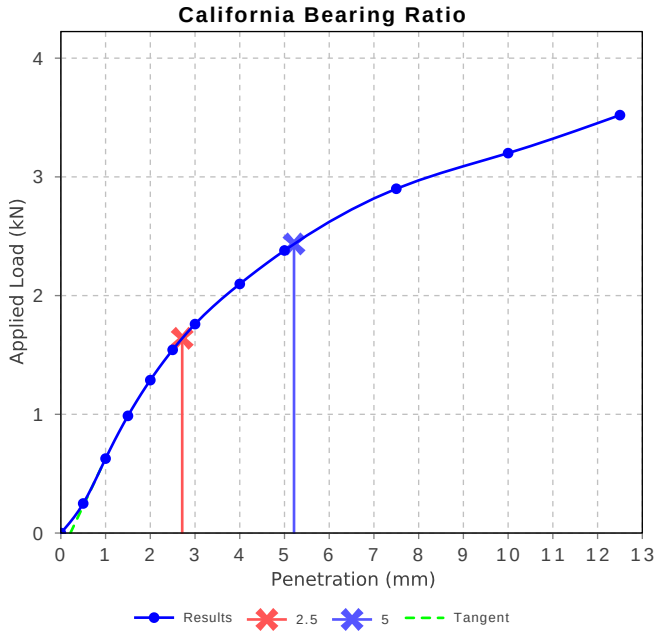
Contact:
Project Number: 207476.07
Project Name:
Project Location: 78 Lockwood Road, Erskine Park NSW
Work Request: 11589
Sample Number: SY-11589A
Date Sampled: 10/07/2024
Dates Tested: 17/07/2024 - 02/08/2024
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **TP206 (0.5-0.7m)**
Material: FILL/ Silty Clayey SAND: brown, red brown

Douglas Partners Pty Ltd
Sydney Laboratory
96 Hermitage Road West Ryde NSW 2114
Phone: (02) 9809 0666
Email: andrew.hutchings@douglaspartners.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Andrew Hutchings
Associate / Laboratory Manager
Laboratory Accreditation Number: 828

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**12**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS1289,5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.78		
Optimum Moisture Content (%)	16.0		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	99.0		
Dry Density after Soaking (t/m^3)	1.78		
Field Moisture Content (%)	12.7		
Moisture Content at Placement (%)	16.0		
Moisture Content Top 30mm (%)	17.5		
Moisture Content Rest of Sample (%)	17.7		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours (h)	138.4		
Swell (%)	0.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	2.1		



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Results relate only to the items tested/sampled.

Material Test Report

Report Number: **207476.07-1**
Issue Number: 1
Date Issued: 06/08/2024
Client:

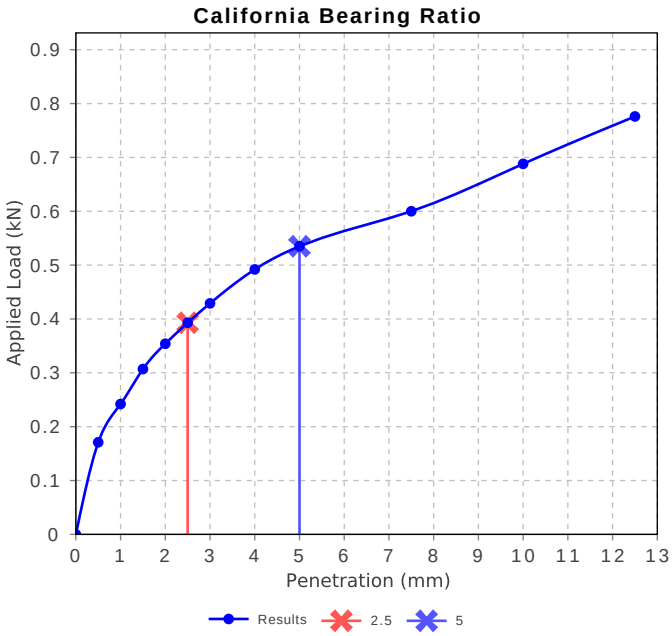
Contact:
Project Number: 207476.07
Project Name:
Project Location: 78 Lockwood Road, Erskine Park NSW
Work Request: 11589
Sample Number: SY-11589B
Date Sampled: 10/07/2024
Dates Tested: 17/07/2024 - 30/07/2024
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **TP212 (0.5-0.7m)**
Material: FILL/ Silty CLAY: red brown, orange brown and pale brown, trace rootlets

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96 Hermitage Road West Ryde NSW 2114
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Approved Signatory: Andrew Hutchings
Associate / Laboratory Manager
Laboratory Accreditation Number: 828

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**3.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS1289.5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.76		
Optimum Moisture Content (%)	18.0		
Laboratory Density Ratio (%)	102.0		
Laboratory Moisture Ratio (%)	95.0		
Dry Density after Soaking (t/m^3)	1.74		
Field Moisture Content (%)	17.8		
Moisture Content at Placement (%)	17.1		
Moisture Content Top 30mm (%)	22.0		
Moisture Content Rest of Sample (%)	20.1		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours (h)	71.2		
Swell (%)	3.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	1.2		
Sample moulded 0.9% dry of OMC			



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Results relate only to the items tested/sampled.

Material Test Report

Report Number: **207476.07-1**
Issue Number: 1
Date Issued: 06/08/2024
Client:

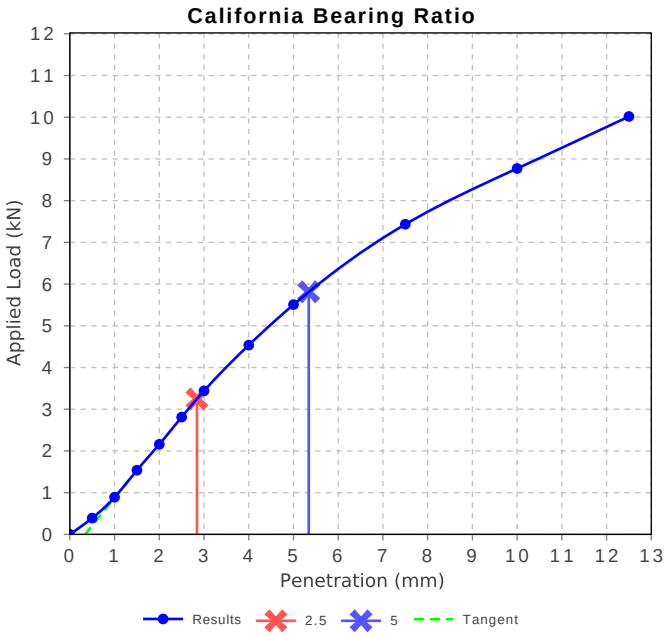
Contact:
Project Number: 207476.07
Project Name:
Project Location: 78 Lockwood Road, Erskine Park NSW
Work Request: 11589
Sample Number: SY-11589C
Date Sampled: 10/07/2024
Dates Tested: 17/07/2024 - 02/08/2024
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **TP224 (0.5-0.74m)**
Material: FILL/ SIlty SAND: pale brown with igneous gravel and ironstone gravel

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Approved Signatory: Andrew Hutchings
Associate / Laboratory Manager
Laboratory Accreditation Number: 828

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	**30**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	2.17		
Optimum Moisture Content (%)	11.0		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m^3)	2.16		
Field Moisture Content (%)	7.1		
Moisture Content at Placement (%)	10.8		
Moisture Content Top 30mm (%)	12.3		
Moisture Content Rest of Sample (%)	11.2		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours (h)	120.5		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	1.4		



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Material Test Report

Report Number: **207476.07-1**
Issue Number: 1
Date Issued: 06/08/2024
Client:

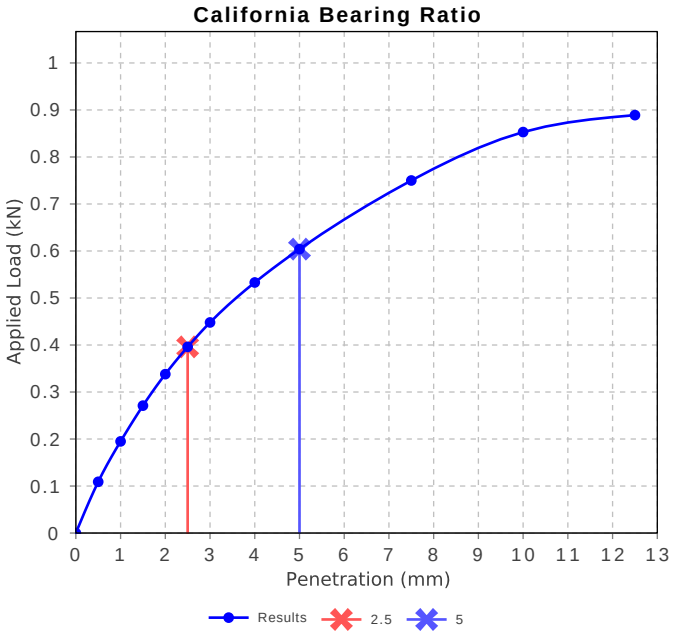
Contact:
Project Number: 207476.07
Project Name:
Project Location: 78 Lockwood Road, Erskine Park NSW
Work Request: 11589
Sample Number: SY-11589D
Date Sampled: 10/07/2024
Dates Tested: 17/07/2024 - 02/08/2024
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **TP235 (0.5-0.7m)**
Material: FILL/ Silty Sandy CLAY: pale grey, with trace gravel

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96 Hermitage Road West Ryde NSW 2114
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Email: andrew.hutchings@douglaspartners.com.au

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Approved Signatory: Andrew Hutchings
Associate / Laboratory Manager
Laboratory Accreditation Number: 828

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	**3.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.68		
Optimum Moisture Content (%)	21.0		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	100.5		
Dry Density after Soaking (t/m^3)	1.64		
Field Moisture Content (%)	18.2		
Moisture Content at Placement (%)	21.0		
Moisture Content Top 30mm (%)	23.9		
Moisture Content Rest of Sample (%)	21.5		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours (h)	266.5		
Swell (%)	2.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	8.3		



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Material Test Report

Report Number: **207476.07-1**
Issue Number: 1
Date Issued: 06/08/2024
Client:

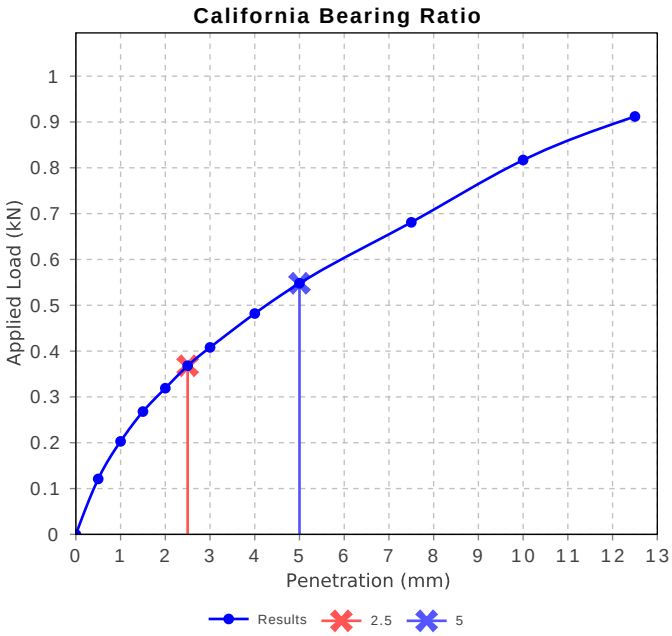
Contact:
Project Number: 207476.07
Project Name:
Project Location: 78 Lockwood Road, Erskine Park NSW
Work Request: 11589
Sample Number: SY-11589E
Date Sampled: 10/07/2024
Dates Tested: 17/07/2024 - 02/08/2024
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **TP248 (0.5-0.7m)**
Material: FILL/ Sandy Silty CLAY: pale brown, red brown, dark brown, trace rootlets

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Sydney Laboratory
96 Hermitage Road West Ryde NSW 2114
Phone: (02) 9809 0666
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Approved Signatory: Andrew Hutchings
Associate / Laboratory Manager
Laboratory Accreditation Number: 828

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**3.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.74		
Optimum Moisture Content (%)	18.0		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	102.0		
Dry Density after Soaking (t/m^3)	1.70		
Field Moisture Content (%)	23.7		
Moisture Content at Placement (%)	18.3		
Moisture Content Top 30mm (%)	22.3		
Moisture Content Rest of Sample (%)	18.9		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours (h)	144.8		
Swell (%)	2.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	3.0		



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Results relate only to the items tested/sampled.

Material Test Report

Report Number: **207476.07-1**
Issue Number: 1
Date Issued: 06/08/2024
Client:

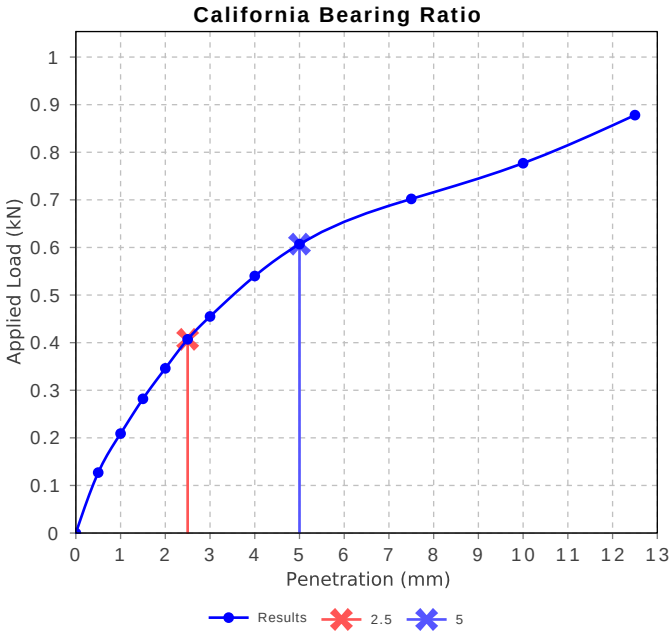
Contact:
Project Number: 207476.07
Project Name:
Project Location: 78 Lockwood Road, Erskine Park NSW
Work Request: 11589
Sample Number: SY-11589F
Date Sampled: 10/07/2024
Dates Tested: 17/07/2024 - 05/08/2024
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **TP249 (0.5-0.7m)**
Material: FILL/ Silty CLAY: pale grey, orange brown and pale brown

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Approved Signatory: Andrew Hutchings
Associate / Laboratory Manager
Laboratory Accreditation Number: 828

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**3.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.79		
Optimum Moisture Content (%)	16.0		
Laboratory Density Ratio (%)	99.5		
Laboratory Moisture Ratio (%)	103.0		
Dry Density after Soaking (t/m^3)	1.74		
Field Moisture Content (%)	14.9		
Moisture Content at Placement (%)	16.6		
Moisture Content Top 30mm (%)	21.2		
Moisture Content Rest of Sample (%)	17.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours (h)	341.0		
Swell (%)	2.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	14.0		



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CERTIFICATE OF ANALYSIS 356818

Client Details

Client	Douglas Partners Pty Ltd
Attention	David Holden, Patrick Johansson
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**207476.06, Erskine Park**
Number of Samples	181 Soil, 1 Water
Date samples received	17/07/2024
Date completed instructions received	17/07/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	26/07/2024
Date of Issue	26/07/2024

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Asbestos Approved By
Analysed by Asbestos Approved Analyst: Nyovan Moonean, Sneha Shakya
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Diego Bigolin, Inorganics Supervisor
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Chemist (FAS)
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

Misc Inorg - Soil						
Our Reference		356818-1	356818-3	356818-12	356818-14	356818-17
Your Reference	UNITS	TP229	TP229	TP231	TP231	TP231
Depth		0-0.2	1-1.2	0-0.2	0.8-1	3-3.2
Date Sampled		16/07/2024	16/07/24	16/07/24	16/07/24	16/07/24
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
Date analysed	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
pH 1:5 soil:water	pH Units	6.1	5.8	6.3	6.7	4.9
Electrical Conductivity 1:5 soil:water	µS/cm	63	120	290	290	320

Misc Inorg - Soil						
Our Reference		356818-18	356818-20	356818-22	356818-23	356818-25
Your Reference	UNITS	TP232	TP232	TP232	TP233	TP233
Depth		0-0.2	1-1.2	1.6-1.8	0-0.2	1-1.2
Date Sampled		16/07/24	16/07/24	16/07/24	16/07/24	16/07/24
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
Date analysed	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
pH 1:5 soil:water	pH Units	6.4	6.8	5.5	7.8	5.5
Electrical Conductivity 1:5 soil:water	µS/cm	190	410	660	400	210

Misc Inorg - Soil						
Our Reference		356818-40	356818-42	356818-44	356818-48	356818-50
Your Reference	UNITS	TP235	TP236	TP236	TP237	TP237
Depth		2.2-2.4	0-0.2	0.8-1	0-0.2	0.8-1
Date Sampled		15/07/24	15/07/24	15/07/24	16/07/24	16/07/24
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
Date analysed	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
pH 1:5 soil:water	pH Units	7.2	7.5	5.3	6.1	6.4
Electrical Conductivity 1:5 soil:water	µS/cm	330	200	290	760	620

Misc Inorg - Soil						
Our Reference		356818-53	356818-54	356818-56	356818-58	356818-66
Your Reference	UNITS	TP237	TP238	TP238	TP238	TP240
Depth		3-3.2	0-0.2	0.8-1	2-2.2	0-0.2
Date Sampled		16/07/24	15/07/24	15/07/24	15/07/24	15/07/24
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
Date analysed	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
pH 1:5 soil:water	pH Units	5.3	4.9	5.0	6.4	5.8
Electrical Conductivity 1:5 soil:water	µS/cm	260	340	350	280	160

Misc Inorg - Soil						
Our Reference		356818-68	356818-72	356818-73	356818-74	356818-78
Your Reference	UNITS	TP240	TP240	TP241	TP241	TP242
Depth		0.8-1	2.7-2.9	0-0.2	0.5-0.7	0-0.2
Date Sampled		15/07/24	15/07/24	11/07/24	11/07/24	15/07/24
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
Date analysed	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
pH 1:5 soil:water	pH Units	5.7	6.4	5.9	4.8	5.3
Electrical Conductivity 1:5 soil:water	µS/cm	270	90	210	440	180

Misc Inorg - Soil						
Our Reference		356818-80	356818-84	356818-89	356818-96	356818-99
Your Reference	UNITS	TP242	TP243	TP243	TP245	TP245
Depth		0.8-1	0-0.2	2.2-2.4	0-0.2	1.8-2
Date Sampled		15/07/24	15/07/24	15/07/24	15/07/24	15/07/24
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
Date analysed	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
pH 1:5 soil:water	pH Units	5.5	5.5	7.3	5.0	5.9
Electrical Conductivity 1:5 soil:water	µS/cm	350	260	670	560	330

Misc Inorg - Soil						
Our Reference		356818-101	356818-102	356818-106	356818-108	356818-110
Your Reference	UNITS	TP245	TP246	TP246	TP247	TP247
Depth		2.4-2.6	0-0.2	2.1-2.3	0-0.2	0.9-1.1
Date Sampled		15/07/24	10/07/24	10/07/24	10/07/24	10/07/24
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
Date analysed	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
pH 1:5 soil:water	pH Units	5.4	5.8	6.9	5.7	4.7
Electrical Conductivity 1:5 soil:water	µS/cm	310	540	220	350	560

Misc Inorg - Soil						
Our Reference		356818-121	356818-122	356818-149	356818-152	356818-160
Your Reference	UNITS	TP249	TP249	TP253	TP253	SS4
Depth		0-0.2	0.5-0.7	0-0.2	2-2.2	0-0.2
Date Sampled		10/07/24	10/07/24	10/07/24	10/07/24	16/07/24
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
Date analysed	-	23/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
pH 1:5 soil:water	pH Units	7.7	4.9	7.2	5.8	5.2
Electrical Conductivity 1:5 soil:water	µS/cm	710	220	250	500	110

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 356818-1 for Cr & Zn. Therefore a triplicate result has been issued as laboratory sample number 356818-183.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-001 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.
Note: Sample 356818-73 was sub-sampled from a jar provided by the client.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

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CERTIFICATE OF ANALYSIS 356782

Client Details

Client	Douglas Partners Pty Ltd
Attention	David Holden
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**207476.06 Erskine Park**
Number of Samples	149 Soil, 1 Water
Date samples received	17/07/2024
Date completed instructions received	17/07/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	24/07/2024
Date of Issue	24/07/2024

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Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
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Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Jack Wallis, Chemist (FAS)
Liam Timmins, Organics Supervisor
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Chemist (FAS)

Authorised By
Nancy Zhang, Laboratory Manager

Misc Inorg - Soil						
Our Reference		356782-1	356782-3	356782-4	356782-7	356782-9
Your Reference	UNITS	TP201	TP201	TP202	TP203	TP203
Depth		0-0.2	0.8-1	0-0.2	0-0.2	0.9-1.1
Date Sampled		12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/07/2024	17/07/2024	17/07/2024	17/07/2024	17/07/2024
Date analysed	-	24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
pH 1:5 soil:water	pH Units	6.1	5.1	5.5	5.7	4.7
Electrical Conductivity 1:5 soil:water	µS/cm	61	370	310	420	1,300

Misc Inorg - Soil						
Our Reference		356782-13	356782-15	356782-20	356782-22	356782-23
Your Reference	UNITS	TP205	TP205	TP207	TP207	TP207
Depth		0-0.2	0.8-1	0-0.2	1-1.2	2-2.2
Date Sampled		12/07/2024	12/07/2024	16/07/2024	16/07/2024	16/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/07/2024	17/07/2024	17/07/2024	17/07/2024	17/07/2024
Date analysed	-	24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
pH 1:5 soil:water	pH Units	6.9	5.6	6.1	6.8	6.5
Electrical Conductivity 1:5 soil:water	µS/cm	450	530	95	230	86

Misc Inorg - Soil						
Our Reference		356782-32	356782-33	356782-35	356782-37	356782-39
Your Reference	UNITS	TP209	TP210	TP210	TP210	TP211
Depth		2.5-2.7	0-0.2	1-1.2	2.7-2.9	0-0.2
Date Sampled		16/07/2024	16/07/2024	16/07/2024	16/07/2024	12/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/07/2024	17/07/2024	17/07/2024	17/07/2024	17/07/2024
Date analysed	-	24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
pH 1:5 soil:water	pH Units	6.6	6.1	6.2	5.8	7.1
Electrical Conductivity 1:5 soil:water	µS/cm	580	120	120	160	190

Misc Inorg - Soil						
Our Reference		356782-44	356782-45	356782-48	356782-49	356782-51
Your Reference	UNITS	TP211	TP212	TP212	TP212	TP213
Depth		1.8-2	0-0.2	2-2.2	2.4-2.6	0-0.2
Date Sampled		12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/07/2024	17/07/2024	17/07/2024	17/07/2024	17/07/2024
Date analysed	-	24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
pH 1:5 soil:water	pH Units	5.6	7.4	5.6	6.1	6.3
Electrical Conductivity 1:5 soil:water	µS/cm	84	390	460	150	600

Misc Inorg - Soil						
Our Reference		356782-53	356782-57	356782-67	356782-70	356782-72
Your Reference	UNITS	TP213	TP214	TP216	TP216	TP216
Depth		0.6-0.8	0-0.2	0-0.2	1.3-1.5	2.4-2.6
Date Sampled		12/07/2024	12/07/2024	11/07/2024	11/07/2024	11/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/07/2024	17/07/2024	17/07/2024	17/07/2024	17/07/2024
Date analysed	-	24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
pH 1:5 soil:water	pH Units	5.5	5.9	7.2	6.2	6.2
Electrical Conductivity 1:5 soil:water	µS/cm	410	160	390	380	75

Misc Inorg - Soil						
Our Reference		356782-82	356782-86	356782-93	356782-94	356782-96
Your Reference	UNITS	TP218	TP218	TP220	TP220	TP221
Depth		0-0.2	1.6-1.8	0-0.2	0.4-0.6	0-0.2
Date Sampled		12/07/2024	12/07/2024	11/07/2024	11/07/2024	12/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/07/2024	17/07/2024	17/07/2024	17/07/2024	17/07/2024
Date analysed	-	24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
pH 1:5 soil:water	pH Units	6.1	5.2	6.1	6.7	5.6
Electrical Conductivity 1:5 soil:water	µS/cm	470	730	650	480	290

Misc Inorg - Soil						
Our Reference		356782-101	356782-104	356782-105	356782-107	356782-109
Your Reference	UNITS	TP222	TP222	TP222	TP223	TP223
Depth		0-0.2	1.8-1.9	2.3-2.5	0-0.2	0.8-1
Date Sampled		16/07/2024	16/07/2024	16/07/2024	11/07/2024	11/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/07/2024	17/07/2024	17/07/2024	17/07/2024	17/07/2024
Date analysed	-	24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
pH 1:5 soil:water	pH Units	5.8	5.0	6.1	7.1	4.8
Electrical Conductivity 1:5 soil:water	µS/cm	180	470	130	660	500

Misc Inorg - Soil					
Our Reference		356782-125	356782-128	356782-130	356782-133
Your Reference	UNITS	TP226	TP227	TP227	TP227
Depth		0-0.2	0-0.2	1-1.2	2.4-2.6
Date Sampled		16/07/2024	11/07/2024	11/07/2024	11/07/2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	17/07/2024	17/07/2024	17/07/2024	17/07/2024
Date analysed	-	24/07/2024	24/07/2024	24/07/2024	24/07/2024
pH 1:5 soil:water	pH Units	8.0	5.6	7.3	6.4
Electrical Conductivity 1:5 soil:water	µS/cm	750	360	630	160

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 356782-1 for Cr. Therefore a triplicate result has been issued as laboratory sample number 356782-151.
- The laboratory RPD acceptance criteria has been exceeded for 356782-67 for Cr. Therefore a triplicate result has been issued as laboratory sample number 356782-152.
- The laboratory RPD acceptance criteria has been exceeded for 356782-125 for Cu & Zn. Therefore a triplicate result has been issued as laboratory sample number 356782-153.
- The PQL has been raised for Cd due to the high moisture content in sample 356782-109, resulting in a high dilution factor.

CEC - # Low spike recovery was obtained for this sample. The sample was re-digested and re-spiked and the low recovery was confirmed. This is due to matrix interferences. However, an acceptable recovery was obtained for the LCS.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Appendix E

Relevant Results from Previous Investigations

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.9
COORDINATE **E:**297352.2 **N:** 6255970.3
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 1
PROJECT No: 207476.00
DATE: 13/10/21
SHEET: 1 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	ROCK FRACTURE SPACING (m)	ROCK DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING TEST TYPE	TESTING RESULTS AND REMARKS
No free groundwater observed	55	0.0	FILL/ (CI) Silty CLAY; orange brown; medium plasticity; with siltstone gravel, w<PL		FILL	WC	>PL to <PL									D	0.0-0.2	0.0		
																D	0.5-0.8	0.5		
		1														D	0.9-1.0	0.9		
																SPT	1.0-1.45	1.0	S	6,6,8 N=14
		1.5	(CI) Silty CLAY; pale grey, pale brown; medium plasticity; with trace sand, w<PL, very stiff															1.45		
	54	2																2		
																SPT	2.5-2.95	2.5	S	4,9,9 N=18
	53	3			ALV	VST	<PL											2.95		
																		3		
	52	4	4.0m: becoming pale grey													SPT	4.0-4.45	4.0	S	3,7,12 N=19
	51																	4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
METHOD: 110mm Spiral Flight Auger to 6.3 m then NMLC Coring
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD/AM

EXPORTED 19/01/22 06:33. TEMPLATE ID: DP_103.02.00_COMBINED

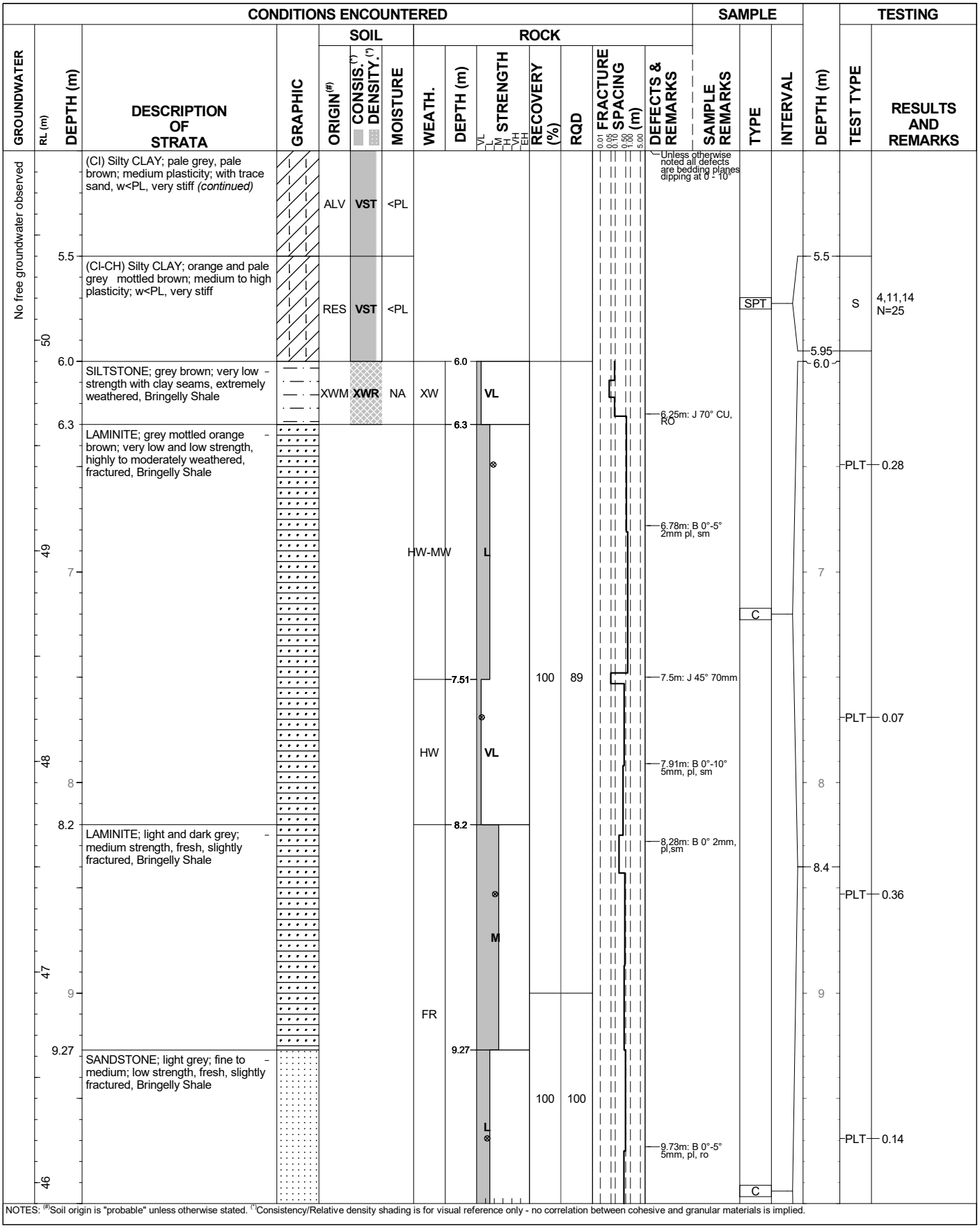
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.9
COORDINATE E:297352.2 **N:** 6255970.3
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 1
PROJECT No: 207476.00
DATE: 13/10/21
SHEET: 2 of 3



NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

EXPORTED 19/01/22 06:33. TEMPLATE ID: DP_103.02.00_COMBINED

PLANT: Hanjin D&B 8D
METHOD: 110mm Spiral Flight Auger to 6.3 m then NMLC Coring
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD/AM

Douglas Partners
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.9
COORDINATE **E:**297352.2 **N:** 6255970.3
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 1
PROJECT No: 207476.00
DATE: 13/10/21
SHEET: 3 of 3

CONDITIONS ENCOUNTERED																			SAMPLE				TESTING	
				SOIL				ROCK																
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	WEATH.	DEPTH (m)	STRENGTH VL L M H VH EH	RECOVERY (%)	RQD	FRACTURE SPACING (m) 0.01 0.05 0.10 0.50 1.00 5.00	DEFECTS & REMARKS	SAMPLE REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	45	11	SANDSTONE; light grey; fine to medium; low strength, fresh, slightly fractured, Bringelly Shale *(continued)*					FR		L	100	100		10.12m: B 0°-10° 10mm, pl,ro 10.64m: B 0°-5° 5mm, pl, ro				11	PLT	0.28
	44	12																12		
	43	13																13		
	42	14																14		
		11.49	Borehole discontinued at 11.49m depth Limit of investigation						11.49									11.48	PLT	0.22
	41																			

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
METHOD: 110mm Spiral Flight Auger to 6.3 m then NMLC Coring
REMARKS:

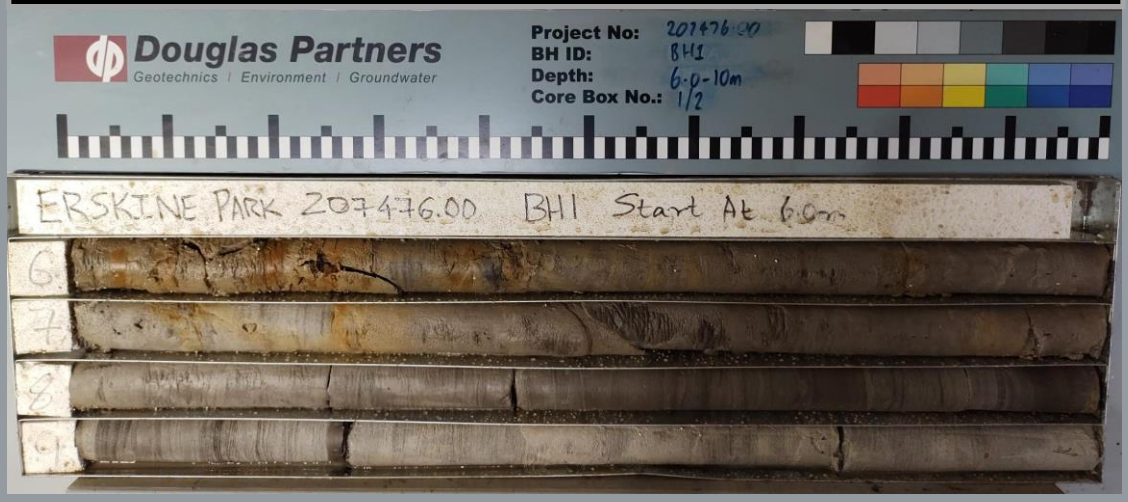
OPERATOR: Rockwell
CASING: Not used

LOGGED: RD/AM

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BORE: BH1 PROJECT: 207476.00 October 2021



6.0m – 10.0m

BORE: BH1 PROJECT: 207476.00 October 2021



10.0m – 11.49m

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.1
COORDINATE **E:**297405.4 **N:** 6255981.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 2
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	55	0.0	FILL/ (CI) Silty CLAY; orange and brown mottled grey; medium plasticity; with ironstone gravel		FILL	WC	>PL to <PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
									D		0.9		
	54	1.0	(CI-CH) Silty CLAY; orange and brown mottled grey; medium to high plasticity; with ironstone gravel		RES	VST	<PL		SPT		1.0	S	7,6,8 N=14
											1.45		
	53	2									2		
									SPT		2.5	S	5,8,12 N=20
											2.95		
	52	3									3		
	51	4									4.0		
		4.2	(CI-CH) Silty CLAY; orange and pale grey; medium to high plasticity; with ironstone gravel (possibly extremely weathered silttsone)		RES	H	<PL		SPT		4.35	S	10,16,8/50

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.1
COORDINATE **E:**297405.4 **N:** 6255981.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 2
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	50	(CI-CH) Silty CLAY; orange and pale grey; medium to high plasticity; with ironstone gravel (possibly extremely weathered silttsone) *(continued)*		RES	H	<PL						
	5.3	Borehole discontinued at 5.30m depth Limit of investigation. Practical Refusal on at least very low strength rock.										
	49									6		
	48									7		
	47									8		
	46									9		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.6
COORDINATE **E:**297446.3 **N:** 6255990
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 3
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54	0.0	FILL/ (CI) Silty CLAY; orange and brown mottled grey; medium plasticity; with ironstone and siltstone gravel (ripped shale)		FILL	PC	>PL probably <PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
	53	1							D		0.9		
											1.0		
									SPT			SPT	5,9,7 N=16
											1.45		
		1.8	(CI-CH) Silty CLAY; pale brown mottled grey; medium to high plasticity; with ironstone gravel		RES	ST TO VST	<PL						
	52	2									2		
											2.5		
									SPT			SPT	5,6,8 N=14
											2.95		
		3									3		
	51	4									4.0		
									SPT			SPT	5,9,15 N=24
											4.45		
	50												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:02. TEMPLATE ID: DP_101.02.00_SOILLOG

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.6
COORDINATE **E:**297446.3 **N:** 6255990
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 3
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	49		(CI-CH) Silty CLAY; pale brown mottled grey; medium to high plasticity; with ironstone gravel *(continued)*		RES	ST TO VST	<PL		SPT		5.5	SPT	10,17,15 N=32
		5.8									5.95		
	48	6	SILTSTONE; dark grey; very low strength, highly weathered, with extremely weathered bands and ironstone bands, Bringelly Shale		XWM	XWR	NA				6		
		7							SPT		7.0	SPT	14,22/150
		7.3	Borehole discontinued at 7.30m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.3		
	47	8									8		
	46	9									9		
	45												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:02. TEMPLATE ID: DP_101.02.00_SOILLOG

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.3
COORDINATE **E:**297484.8 **N:** 6255998.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 4
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54	0.0	FILL/ (CI) Silty CLAY; orange and brown with mottled grey; medium plasticity; with ironstone and siltstone gravel						D		0.1		
											0.2		
									D		0.4		
											0.5		
									D		0.9		
		1									1.0		
	53				FILL	WC	>PL to >PL		SPT			S	3,6,10 N=16
			1.4m: possibly natural								1.45		
		2									2		
	52	2.5	(CI-CH) Silty CLAY; orange and pale brown mottled red; medium to high plasticity; with ironstone gravel								2.5		
									SPT			S	7,13,15 N=28
		3									2.95		
	51				ALV	VST	<PL				3		
		3.9											
		4	(CI-CH) Silty CLAY; orange and pale brown mottled red; medium to high plasticity; with ironstone gravel								4.0		
	50								SPT			S	10,14,16 N=30
					ALV	ST	<PL				4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:02. TEMPLATE ID: DP_101.02.00_SOILLOG

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.3
COORDINATE **E:**297484.8 **N:** 6255998.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 4
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	49 / 6	(CI-CH) Silty CLAY; orange and pale brown mottled red; medium to high plasticity; with ironstone gravel *(continued)*		ALV	ST	<PL		SPT		5.5 / 5.95	S	5,6,7 N=13
	48 / 6.5	SILTSTONE; dark grey; very low strength, highly weathered, with extremely weathered bands, Bringelly Shale		XWM	XWR	NA		SPT		7.0	S	16,13/80
	47 / 7.23	Borehole discontinued at 7.23m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.23		
	46 / 8									8		
	45 / 9									9		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:02. TEMPLATE ID: DP_101.02.00_SOILLOG

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.8
COORDINATE **E:**297534.4 **N:** 6256007.6
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 5
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.6m.	53 / 0.0	FILL/ (CI) Silty CLAY; brown and pale orange; medium plasticity; with ironstone gravel		FILL	VC	>PL to <PL		D		0.1		
										0.2		
								D		0.4		
										0.5		
								D		0.9		
	1.0	(CI-CH) Silty CLAY; pale brown with mottled grey; medium to high plasticity								1.0		
								SPT			S	6,7,8 N=15
										1.45		
	52 / 2									2		
										2.5		
								SPT			S	8,13,16 N=29
										2.95		
	51 / 3			ALV	ST TO VST	<PL				3		
	50 / 4									4.0		
								SPT			S	7,10,8 N=18
										4.45		
	49											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:02. TEMPLATE ID: DP_101.02.00_SOILLOG

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.8
COORDINATE **E:**297534.4 **N:** 6256007.6
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 5
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.6m.	48	(CI-CH) Silty CLAY; pale brown with mottled grey; medium to high plasticity *(continued)*		ALV	ST TO VST	<PL		SPT		5.5	S	5,10,11 N=21
	6.0									5.95		
	47	(CI-CH) Silty CLAY; pale orange and pale brown; medium to high plasticity		RES	VST	<PL		SPT		7.0	S	8,9,11 N=20
	7									7.45		
	46											
	8									8		
	8.1	SILTSTONE; dark grey; very low strength, highly weathered, with extremely weathered bands, Bringelly Shale		XWM	XWR	NA						
	8.7	Borehole discontinued at 8.70m depth Limit of investigation. Practical Refusal on at least very low strength rock.										
	45											
	9									9		
	44											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5
COORDINATE E:297595.1 **N:** 6256019.7
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 6
PROJECT No: 207476.00
DATE: 18/10/21
SHEET: 1 of 3

CONDITIONS ENCOUNTERED																				SAMPLE				TESTING	
				SOIL				ROCK																	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	WEATH.	DEPTH (m)	STRENGTH VL L M H VH EH	RECOVERY (%)	RQD	FRACTURE SPACING (m) 0.01 0.05 0.10 0.50 1.00 5.00	DEFECTS & REMARKS	SAMPLE REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	53	0.0	FILL/ (CI) Silty CLAY; orange brown mottled white; medium plasticity; trace siltstone gravel		FILL	WC	>PL to <PL									D	0.1–0.2	0.1		
																D	0.4–0.5	0.4		
																D	0.9–1.0	0.5		
	52	1.0	(CI-CH) Silty CLAY; orange brown; medium plasticity; stiff, trace ironstone gravel		ALV	ST	<PL									SPT	1.0–1.45	0.9	SPT	4,5,6 N=11
																		1.0		
																		1.45		
	51	2.0	(CI-CH) Silty CLAY; pale brown and orange; medium to high plasticity		ALV	VST	<PL									SPT	2.5–2.95	2	SPT	5,15,10 N=25
																		2.5		
																		2.95		
	50	3																3		
	49	4														SPT	4.0–4.45	4.0	SPT	7,10,13 N=23
																		4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: Hanjin D&B 8D
OPERATOR: Rockwell
LOGGED: RD
METHOD: 110mm Sprial Flight Auger to 8.6, NMLC coring
CASING: HW to 2.5m, HQ to 8.6m
REMARKS: At 5.5-6.0m possible water table

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5
COORDINATE **E:**297595.1 **N:** 6256019.7
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 6
PROJECT No: 207476.00
DATE: 18/10/21
SHEET: 2 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	FRACTURE SPACING (m)	DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	48	5.5	(CI-CH) Silty CLAY; pale brown and orange; medium to high plasticity *(continued)*		ALV	VST	<PL											5.5	SPT	6,9,14 N=23
			5.5m: becoming grey and orange																	
			(CI-CH) Silty CLAY; grey and orange; medium to high plasticity		RES	VST	<PL									SPT		5.95		
	47	6.5	SILTSTONE; dark brown and mottled orange; very low strength with clay seams, Bringelly Shale		XWM	XWR	NA											7.0	SPT	10,17,26 N=43
																SPT		7.45		
	46	8.6	SILTSTONE; grey brown; very low strength, Bringelly Shale					SW	8.6	VL				Unless otherwise noted all defects are bedding planes dipping at 0 - 10°		SPT		8.5	SPT	23/100
		8.9	LAMINITE; pale grey; fine to medium; 50 - 70% sandstone and 30 - 50% siltstone, low strength, slightly weathered to fresh, Bringelly Shale						8.9					8.93m: B 0°-5° PL, SM, 2mm				8.6		
	45							FR		L	100	92		9.13m: B 0°-5° PL, SM, 2mm						
														0°-5° 2mm						
	44													30° 2mm						
														0°-5° 2mm						
														0°-5° 2mm						
														0°-5° 2mm						
								FS	9.95							C				

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

EXPORTED 19/01/22 06:33. TEMPLATE ID: DP_103.02.00_COMBINED

PLANT: Hanjin D&B 8D
METHOD: 110mm Sprial Flight Auger to 8.6, NMLC coring
REMARKS: At 5.5-6.0m possible water table

OPERATOR: Rockwell
CASING: HW to 2.5m, HQ to 8.6m

LOGGED: RD

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5
COORDINATE **E:**297595.1 **N:** 6256019.7
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 6
PROJECT No: 207476.00
DATE: 18/10/21
SHEET: 3 of 3

CONDITIONS ENCOUNTERED																SAMPLE				TESTING	
				SOIL			ROCK														
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	WEATH.	DEPTH (m)	STRENGTH VL L M H VH EH	RECOVERY (%)	RQD	FRACTURE SPACING (m) 0.01 0.05 0.10 0.50 1.00 5.00	DEFECTS & REMARKS	SAMPLE REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	43	10.4	LAMINITE; pale grey; fine to medium; 50 - 70% sandstone and 30 - 50% siltstone, low strength, slightly weathered to fresh, Bringelly Shale *(continued)*											0°-5° 2mm						
			LAMINITE; dark grey; medium; 40 - 60% sandstone and 40 - 60% siltstone. low and low to medium strength, slightly weathered to fresh, Bringelly Shale					FS		L	100	92		0°-5° 5mm 0°-5° 2mm					PLT	0.29
	42	11	11.55-11.85m: very low strength band						11.43 11.55 11.85	VL				30° 5mm				11.32	PLT	0.08
	41	12						FS	13.15	L L-M	100	100		13.48m: J 45° 5mm		C		12	PLT	0.11
	40	13																13	PLT	0.32
	39	14	Borehole discontinued at 14.21m depth Limit of investigation						14.21									14.2		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

EXPORTED 19/01/22 06:33. TEMPLATE ID: DP_103.02.00_COMBINED

PLANT: Hanjin D&B 8D
METHOD: 110mm Sprial Flight Auger to 8.6, NMLC coring
REMARKS: At 5.5-6.0m possible water table

OPERATOR: Rockwell
CASING: HW to 2.5m, HQ to 8.6m

LOGGED: RD

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BORE: BH6 PROJECT: 207476.00 October 2021



8.6m – 13.0m

BORE: BH6 PROJECT: 207476.00 October 2021



13.0m – 14.2m

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.4
COORDINATE **E:**297360.8 **N:** 6256018
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 7
PROJECT No: 207476.00
DATE: 04/11/21
SHEET: 1 of 1

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	55	0.0	FILL/ (CI) Silty CLAY; pale orange brown; medium plasticity; trace ironstone and siltstone gravels		FILL	WC	<PL to >PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
		1							D		0.9		
											1.0		
									SPT			SPT	3,4,5 N=9
	54	1.4	(CI-CH) Silty CLAY; pale grey; medium to high plasticity		RES	VST TO H	<PL				1.45		
		2									2		
	53										2.5		
									SPT			SPT	10,14,16 N=30
		3									2.95		
											3		
	52	3.3	SILTSTONE; dark grey; very low strength, highly weathered with extremely weathered bands, Bringelly Shale		XWM	XWR	NA						
		4									4.0		
									SPT			SPT	7,25/150
	51	4.3	Borehole discontinued at 4.30m depth Limit of investigation. Practical Refusal on at least very low strength rock.								4.3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5
COORDINATE E:297428 **N:** 6256031
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 8
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 1 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	ROCK FRACTURE SPACING (m)	ROCK DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING TEST TYPE	TESTING RESULTS AND REMARKS
	54	0.0	FILL/ (CL) Silty CLAY; pale grey mottled pale brown; low plasticity; with fine sand, trace angular to subangular gravel, w<PL													D	0.0	0.0		
																	0.2			
			0.5m: becoming orange brown		FILL	WC	<PL to >PL									D	0.4	0.4		
																	0.5			
																D	0.9	0.9		
	53	1.0	(CL) Silty CLAY; pale brown; low plasticity; with sand, w<PL, stiff														1.0	1.0		
																SPT	1.45	SPT	8,6,5 N=11	
		2	2.0m: becoming pale brown mottled orange brown														2	2		
	52				ALV	ST	<PL										2.5	2.5		
																SPT	2.95	SPT	5,5,7 N=12	
		3	3.0m: becoming dark grey														3	3		
	51																			
		4.0	(CL) Silty CLAY; pale grey mottled orange brown; low plasticity; with sand, w<PL, very stiff														4.0	4.0		
	50				RES	VST TO H	<PL									SPT	4.45	SPT	4,7,9 N=16	

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: Hanjin D&B 8D
OPERATOR: Rockwell
LOGGED: AM

METHOD: 110mm Spiral Flight Auger
CASING: Not used

REMARKS: Well construction details: 0.5m Gatic cover, 8.5-9.0m Bentonite, 9.0-12.95 Sand

Douglas Partners
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5
COORDINATE E:297428 **N:** 6256031
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 8
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 2 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	FRACTURE SPACING (m)	DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING TEST TYPE	TESTING RESULTS AND REMARKS
	49		(CL) Silty CLAY; pale grey mottled orange brown; low plasticity; with sand, w<PL, very stiff *(continued)*															5.5		
																SPT			SPT	10,15,18 N=33
		6			RES	VST TO H	<PL											5.95		
	48		6.5m: becoming pale brown mottled pale brown															6		
		7																7.0		
																SPT			SPT	6,12,18 N=30
	47	7.5	SILTSTONE;; very low and low strength, moderately weathered, slightly freactured, Bringelly Shale															7.45		
		8			XWM	XWR	NA							Unless otherwise noted all defects are bedding planes dipping at 0 - 10°				8		
	46															SPT		8.5	SPT	30/150
		8.9							8.9									8.65		
		9	SILTSTONE;; with sandstone laminations, very low and low strength, moderately weathered, slightly freactured, Bringelly Shale					MW		VL-L								8.9		
	45	9.44	LAMINITE;; 50 to 70 % siltstone and 30 to 50% sandstone laminations, low and low to medium strength with clay seams, fresh, slightly freactured, Bringelly Shale					FR	9.44	L-M	100	65		9.45m: J 65°-75° IR, RO				9		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
OPERATOR: Rockwell
LOGGED: AM

METHOD: 110mm Spiral Flight Auger
CASING: Not used

REMARKS: Well construction details: 0.5m Gatic cover, 8.5-9.0m Bentonite, 9.0-12.95 Sand

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5
COORDINATE E:297428 **N:** 6256031
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 8
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 3 of 3

CONDITIONS ENCOUNTERED																				SAMPLE				TESTING	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH VL L M H VH EH	ROCK RECOVERY (%)	ROCK RQD	FRACTURE SPACING (m) 0.01 0.05 0.10 0.50 1.00 5.00	DEFECTS & REMARKS	SAMPLE REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	44		LAMINITE;; 50 to 70 % siltstone and 30 to 50% sandstone laminations, low and low to medium strength with clay seams, fresh, slightly freactured, Bringelly Shale *(continued)*					FR		L-M				10.06m: CS CLY, =10mm 10.09m: CS CLY, =10mm 10.12m: CS CLY, =20mm		C			PLT	0.30
								XW	10.75 10.78	SEAM	100	65		10.75m: CS CLY, =30mm						
	11																	11		
																	11.34			
	43							FR		L									PLT	0.11
	12										100	99				C		12		
	42	12.55	LAMINITE;; 30 to 40 % siltstone and 60 to 70% sandstone laminations, medium strength, fresh, slightly freactured, Bringelly Shale						12.55										PLT	0.23
								FR		M									PLT	0.35
		12.95							12.95									12.95		
	13		Borehole discontinued at 12.95m depth Limit of investigation															13		
	41																			
	14																	14		
	40																			

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
METHOD: 110mm Spiral Flight Auger
REMARKS: Well construction details: 0.5m Gatic cover, 8.5-9.0m Bentonite, 9.0-12.95 Sand

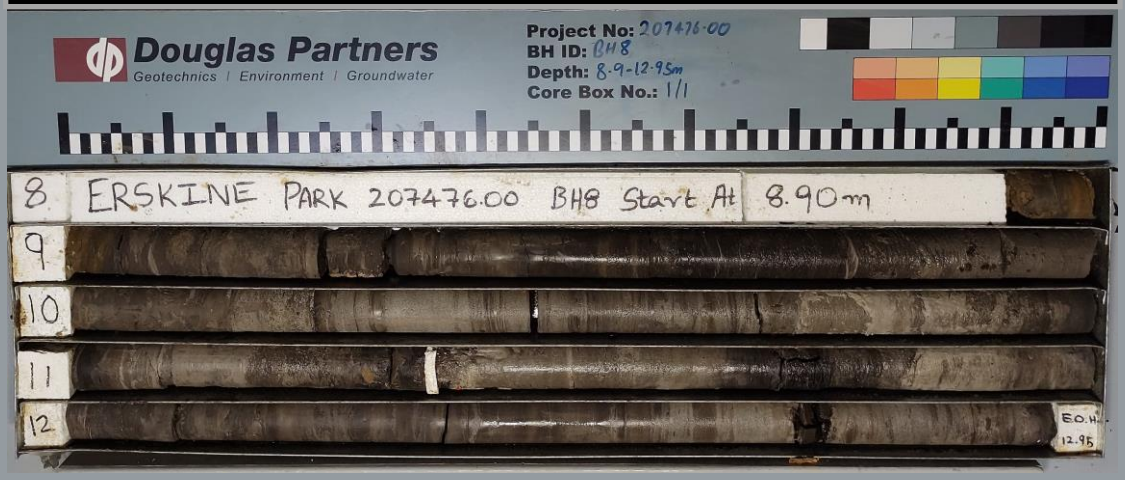
OPERATOR: Rockwell
CASING: Not used

LOGGED: AM

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BORE: BH8 **PROJECT: 207476.00** **October 2021**



8.9m – 12.95m

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.2
COORDINATE **E:**297464.9 **N:** 6256038.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 9
PROJECT No: 207476.00
DATE: 04/11/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.6m	54	0.0	FILL/ (CI) Silty CLAY; pale orange and grey; medium plasticity; trace siltstone gravel		FILL	PC	<PL to >PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
		0.8	(CI) Silty CLAY; dark grey and pale orange; medium plasticity; trace siltstone gravel								0.9		
		1							D		1.0		
	53								SPT			SPT	6,6,5 N=11
					ALV	F TO ST	<PL				1.45		
		2									2		
	52	2.3	(CI-CH) Silty CLAY; pale orange mottled grey; medium to high plasticity								2.5		
									SPT			SPT	4,7,8 N=15
											2.95		
		3			ALV	F TO ST	<PL				3		
	51												
		4									4.0		
	50								SPT			SPT	4,8,9 N=17
											4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.2
COORDINATE **E:**297464.9 **N:** 6256038.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 9
PROJECT No: 207476.00
DATE: 04/11/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.6m	49	6	(CI-CH) Silty CLAY; pale orange mottled grey; medium to high plasticity *(continued)*		ALV	F TO ST	<PL		SPT	5.5–5.95	6	SPT	2,3,4 N=7
	48	7									7		
	47	7.1	(CI-CH) Silty CLAY; pale grey mottled orange; medium to high plasticity; trace ironstone gravel		RES	VST	<PL		SPT	7.0–7.45	7.0	SPT	5,13,13 N=26
	46	8									8		
		8.6	SILTSTONE; dark grey; very low strength, highly weathered, with extremely weathered bands and ironstone bands, Bringelly Shale		XWM	XWR	NA						
	45	8.9 9	Borehole discontinued at 8.90m depth Limit of investigation. Practical Refusal on at least very low strength rock.								9		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:02. TEMPLATE ID: DP_101.02.00_SOILLOG

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.9
COORDINATE **E:**297498.4 **N:** 6256044.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 10
PROJECT No: 207476.00
DATE: 18/10/21
SHEET: 1 of 3

CONDITIONS ENCOUNTERED																				SAMPLE				TESTING	
				SOIL				ROCK																	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	WEATH.	DEPTH (m)	STRENGTH VL L M H VH EH	RECOVERY (%)	RQD	FRACTURE SPACING (m) 0.01 0.05 0.10 0.50 1.00 5.00	DEFECTS & REMARKS	SAMPLE REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; dark orange and brown mottled grey. trace plastic fragments, trace ironstone gravel, poorly compacted; medium plasticity; trace plastic fragments, trace ironstone gravel		FILL	WC	<PL to >PL									D	0.1–0.2	0.1		
																D	0.4–0.5	0.4		
			0.8m: possibly natural															0.5		
		1.0	(CI-CH) Silty CLAY; pale brown and orange; medium to high plasticity; trace ironstone gravel, very stiff													D	0.9–1.0	0.9		
																SPT		1.0	SPT	5,9,10 N=19
																		1.45		
	52	2																2		
																		2.5		
																SPT			SPT	5,7,10 N=17
	51																	2.95		
		3			ALV	VST	<PL											3		
	50	4														SPT		4.0	SPT	7,10,12 N=22
																		4.45		
	49																			

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: Hanjin D&B 8D
METHOD: 110mm Spiral Flight Auger to 7.3m, NMLC coring
REMARKS:

OPERATOR: Rockwell
CASING: HW to 2.5m, HQ to 7.3m

LOGGED: RD

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.9
COORDINATE E:297498.4 **N:** 6256044.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 10
PROJECT No: 207476.00
DATE: 18/10/21
SHEET: 2 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	FRACTURE SPACING (m)	DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		0.0	(Cl-CH) Silty CLAY; pale brown and orange; medium to high plasticity; trace ironstone gravel, very stiff *(continued)*		ALV	VST	<PL													
	48	5.5	(Cl-CH) Silty CLAY; orange mottled grey; medium to high plasticity; trace ironstone gravel		RES	VST	<PL									SPT		5.5	SPT	4,8,16 N=24
	47	6.5	SILTSTONE; grey brown; very low strength, extremely to highly weathered, Bringelly Shale		XWM	XWR	NA							Unless otherwise noted all defects are bedding planes dipping at 0 - 10°				5.95		
	46	7.3	SILTSTONE; dark grey mottled orange; trace sandstone laminations, very low and low strength, moderately to slightly weathered, fractured, Bringelly Shale					MW-SW	7.3	VL						SPT		7.0	SPT	14,24,10/130
									7.8	L	100	96		7.53m: J 20° PL, SM, 5mm		C		7.3		
	45								8.33									8.29	PLT	0.14
									8.38											
								SW-FS		VL	100	97		8.71m: J 45° PL, SM, 10mm						
														8.9m: J 75°-80° PL, RO, FE					PLT	0.08
	44															C				

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

EXPORTED 19/01/22 06:34. TEMPLATE ID: DP_103.02.00_COMBINED

PLANT: Hanjin D&B 8D
OPERATOR: Rockwell
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.3m, NMLC coring
CASING: HW to 2.5m, HQ to 7.3m

REMARKS:

Douglas Partners
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.9
COORDINATE **E:**297498.4 **N:** 6256044.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 10
PROJECT No: 207476.00
DATE: 18/10/21
SHEET: 3 of 3

CONDITIONS ENCOUNTERED																				SAMPLE				TESTING	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH VL L M H VH EH	ROCK RECOVERY (%)	ROCK RQD	ROCK FRACTURE SPACING (m) 0.01 0.05 0.10 0.50 1.00 5.00	ROCK DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	43	11	SILTSTONE; dark grey mottled orange; trace sandstone laminations, very low and low strength, moderately to slightly weathered, fractured, Bringelly Shale *(continued)*					SW-FS		VL	100	97							PLT	0.07
	42	11.07	SILTSTONE; dark grey; low strength, fresh stained, slightly fractured, Bringelly Shale					FS	11.07	L	100	92		11.35m: CZ 30mm		C		11.03	PLT	0.12
	41	12.69	Borehole discontinued at 12.69m depth Limit of investigation						12.69									12.69	PLT	0.26
	40	13																13		
	39	14																14		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
OPERATOR: Rockwell
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.3m, NMLC coring
CASING: HW to 2.5m, HQ to 7.3m

REMARKS:

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BORE: BH10 PROJECT: 207476.00 October 2021



7.3m – 11.0m

BORE: BH10 PROJECT: 207476.00 October 2021



11.0m – 12.69m

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5
COORDINATE **E:**297544.3 **N:** 6256053.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 11
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.6m	0.0 / 53	FILL/ (CI) Silty CLAY; pale brown and pale orange mottled grey; medium plasticity		FILL	WC	<PL to >PL		D		0.1		
										0.2		
								D		0.4		
										0.5		
								D		0.9		
	1.0 /	(CI-CH) Silty CLAY; brown and pale orange; medium to high plasticity								1.0		
								SPT			SPT	5,6,6 N=12
	52	1.5m: trace ironstone gravel below								1.45		
	2									2		
	51									2.5		
				RES	VST	<PL		SPT			SPT	10,12,15 N=27
	3									2.95		
										3		
	50											
	4									4.0		
								SPT			SPT	5,9,7 N=16
	49 / 4.5									4.45		
		(CI-CH) Silty CLAY; orange and mottled brown; medium to high plasticity		RES	F TO ST	<PL						

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS: At 5.5m depth soil observed to be wet

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5
COORDINATE **E:**297544.3 **N:** 6256053.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 11
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.6m	48	0	(CI-CH) Silty CLAY; orange and mottled brown; medium to high plasticity *(continued)*		RES	F TO ST	<PL		SPT		5.5	SPT	4,3,5 N=8
	47	6									5.95		
		6.8	SILTSTONE; dark grey; very low strength, highly weathered, with extremely weathered bands, Bringelly Shale		XWM	XWR	NA		SPT		7.0	SPT	16,25/150
	46	7.3	Borehole discontinued at 7.30m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.3		
	45	8									8		
	44	9									9		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS: At 5.5m depth soil observed to be wet

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:02. TEMPLATE ID: DP_101.02.00_SOILLOG

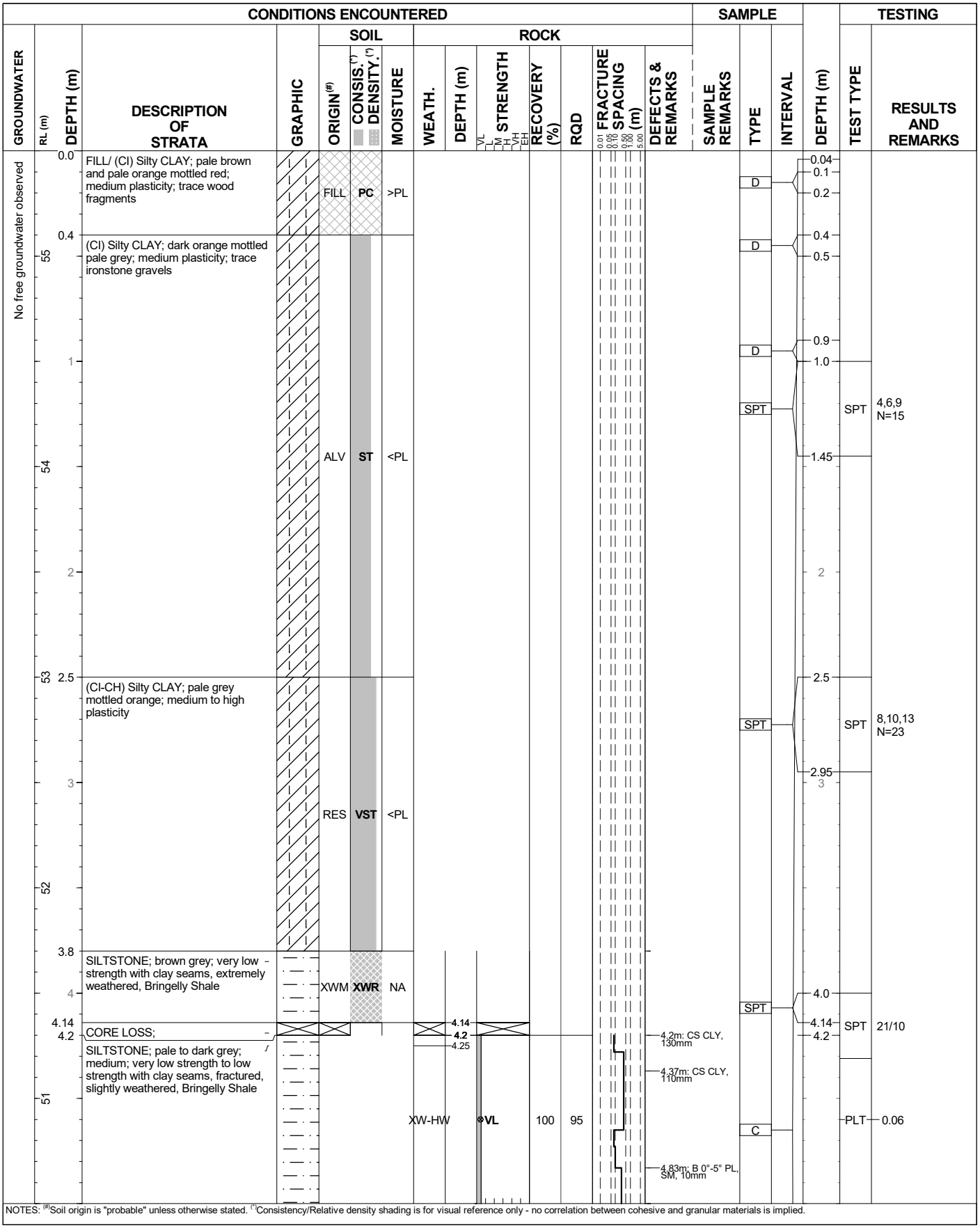
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.5
COORDINATE E:297333.7 **N:** 6256055.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 12
PROJECT No: 207476.00
DATE: 02/11/21
SHEET: 1 of 2



NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Sprial Flight Auger 4.2m, NMLC coring
REMARKS:

OPERATOR: Traccess
CASING: HW to 2.5m, HQ to 4.2m

LOGGED: RD

EXPORTED 19/01/22 06:36. TEMPLATE ID: DP_103.02.00_COMBINED

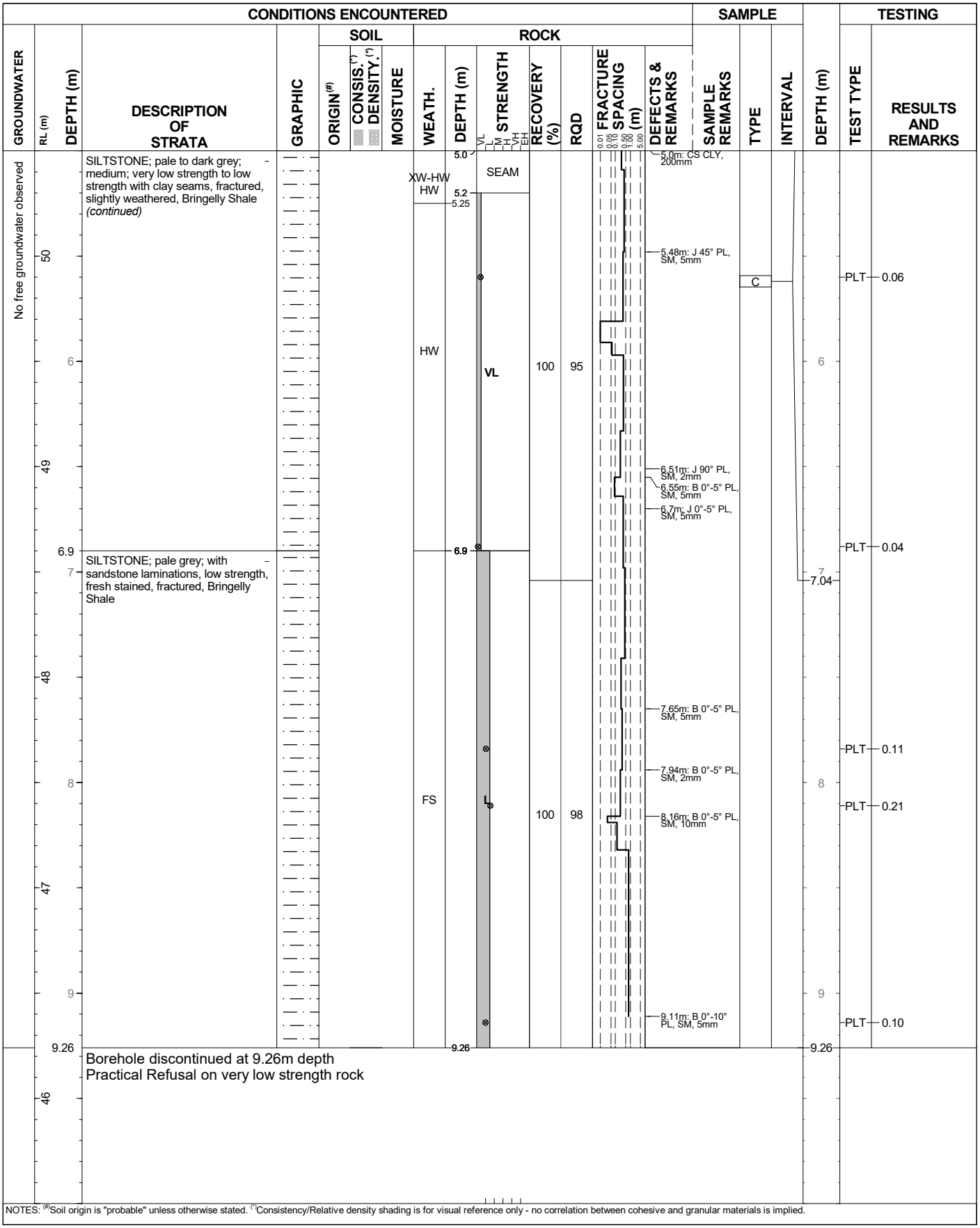
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.5
COORDINATE E:297333.7 **N:** 6256055.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 12
PROJECT No: 207476.00
DATE: 02/11/21
SHEET: 2 of 2



NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Sprial Flight Auger 4.2m, NMLC coring
REMARKS:

OPERATOR: Traccess
CASING: HW to 2.5m, HQ to 4.2m

LOGGED: RD

Refer to explanatory notes for symbol and abbreviation definitions

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BORE: BH12 PROJECT: 207476.00 October 2021



4.2m – 8.0m

BORE: BH12 PROJECT: 207476.00 October 2021



8.0m – 9.26m

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5
COORDINATE **E:**297389.7 **N:** 6256066.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 13
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54 / 0.0	FILL/ (CI) Silty CLAY; orange brown; medium plasticity; with ironstone and siltstone gravel, with sandstone gravel		FILL	WC	<PL to >PL		D		0.1		
										0.2		
								D		0.4		
										0.5		
								D		0.9		
	1.0 / 53	(CI-CH) Silty CLAY; pale grey mottled pale brown; medium to high plasticity; with ironstone gravel								1.0		
								SPT			SPT	5,8,12 N=20
										1.45		
	2 / 52									2		
										2.5		
								SPT			SPT	7,12,10 N=22
	3 / 51			ALV	VST TO H	<PL				2.95		
										3		
	4 / 50									4.0		
								SPT			SPT	8,13,19 N=32
										4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: Hanjin D&B 8D
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: KA

Douglas Partners
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5
COORDINATE **E:**297389.7 **N:** 6256066.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 13
PROJECT No: 207476.00
DATE: 15/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	49 / 5.3	(CI-CH) Silty CLAY; pale grey mottled pale brown; medium to high plasticity; with ironstone gravel *(continued)*		ALV	VST TO H	<PL						
	49	(CI-CH) Silty CLAY; pale grey; medium to high plasticity; trace ironstone gravel (possibly very low strength siltstone)								5.5		
								SPT			SPT	7,10,12 N=22
	6									5.95		
	48			RES	VST TO H	<PL				6		
	7									7.0		
								SPT			SPT	9,19,25/110
	7.41 / 47	Borehole discontinued at 7.41m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.41		
	8									8		
	46											
	9									9		
	45											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: KA

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54
COORDINATE **E:**297440.8 **N:** 6256077
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 14
PROJECT No: 207476.00
DATE: 02/11/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		0.0	FILL/ (CI) Silty CLAY; pale brown and pale orange; medium plasticity; trace siltstone and ironstone gravels						D		0.1		
											0.2		
									D		0.4		
											0.5		
									D		0.9		
	53	1	1.0m: possibly natural		FILL	WC	<PL to >PL				1.0		
									SPT			SPT	4,4,7 N=11
											1.45		
	52	2									2		
		2.2	(CI-CH) Silty CLAY; pale orange and brown; medium to high plasticity; trace siltstone gravel										
											2.5		
									SPT			SPT	7,9,12 N=21
											2.95		
	51	3			ALV	VST	<PL				3		
											4.0		
	50	4							SPT			SPT	7,9,14 N=23
											4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54
COORDINATE **E:**297440.8 **N:** 6256077
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 14
PROJECT No: 207476.00
DATE: 02/11/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		5.2	(CI-CH) Silty CLAY; pale orange and brown; medium to high plasticity; trace siltstone gravel *(continued)*		ALV	VST	<PL						
	48	6	(CI-CH) Silty CLAY; pale grey mottled orange; medium to high plasticity; trace siltstone gravel		RES	VST	<PL		SPT		5.5 5.95	SPT	10,14,16 N=30
		6.7	SILTSTONE; dark grey; very low strength, highly weathered, with extremely weathered bands, Bringelly Shale		XWM	XWR	NA						
	47	6.9 7	Borehole discontinued at 6.90m depth Limit of investigation. Practical Refusal on at least very low strength rock.										
	46	8											
	45	9											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.7
COORDINATE **E:**297476.9 **N:** 6256080.9
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 15
PROJECT No: 207476.00
DATE: 04/11/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 6.7m	53	0.0	FILL/ (CI) Silty CLAY; pale brown and orange; medium plasticity; trace ironstone gravel		FILL	VC	<PL to >PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
			0.8m: possibly natural								0.9		
		1							D		1.0		
	52	1.2	(CI) Silty CLAY; orange; medium plasticity						SPT			SPT	2,3,5 N=8
											1.45		
		2									2		
	51										2.5		
									SPT			SPT	7,7,6 N=13
		3			ALV	F TO ST	<PL				2.95		
	50										3		
		4									4.0		
									SPT			SPT	5,3,2 N=5
	49										4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:03. TEMPLATE ID: DP_101.02.00_SOILLOG

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.7
COORDINATE **E:**297476.9 **N:** 6256080.9
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 15
PROJECT No: 207476.00
DATE: 04/11/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 6.7m	48	5.7	(CI) Silty CLAY; orange; medium plasticity *(continued)*		ALV	F TO ST	<PL				5.5	SPT	5,7,7 N=14
			(CI-CH) Silty CLAY; pale grey mottled pale orange; medium to high plasticity; trace ironstone gravel		RES	ST TO VST	<PL		SPT		5.95		
	47	6									6		
		7				VST			SPT		7.0	SPT	8,9,12 N=21
	46	8									7.45		
		8.1	SILTSTONE; grey; very low strength, Bringelly Shale		XWM	XWR	NA				8		
	45	8.9											
		9	Borehole discontinued at 8.90m depth Limit of investigation. Practical Refusal on at least very low strength rock.								9		
	44												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Douglas Partners
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3
COORDINATE E:297523.6 **N:** 6256089.3
DATUM/GRID:
DIP/AZIMUTH: 90°/---

LOCATION ID: 16
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	TESTING AND REMARKS: RESULTS AND REMARKS
Groundwater observed at 5.4m	53	0.0	FILL/ (CI) Silty CLAY; pale brown; medium plasticity; trace ironstone and siltstone gravel		FILL	VC	>PL		D	0.1–0.2	0.1		
									D	0.4–0.5	0.4		
	52	0.4	(CI) Silty CLAY; pale brown and dark orange; medium plasticity; trace white rock fragments		ALV	F	<PL		D	0.9–1.0	0.9		
		1							SPT		1.0	SPT	2,4,3 N=7
											1.45		
	51	1.7	(CI) Silty CLAY; dark brown and dark orange; medium plasticity; trace siltstone gravel		ALV	ST	<PL				2		
		2							SPT	2.5–2.95	2.5	SPT	6,9,8 N=17
		3									2.95		
	50	4									4.0		
	49	4.1	(CI) Silty CLAY; pale grey and pale orange; medium plasticity		RES	ST	<PL		SPT	4.0–4.45	4.0	SPT	4,4,5 N=9
		5									4.45		
	48										5		
									SPT	5.5–5.95	5.5	SPT	4,5,10 N=15
		6									5.95		
	47	6.8	SILTSTONE; dark grey; very low strength, Bringelly Shale		XWM	XWR	NA				7		
		7											
	46	7.1	Borehole discontinued at 7.10m depth Limit of investigation. Practical Refusal on at least very low strength rock.										
		8									8		
	45												
		9									9		
	44												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING:

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2
COORDINATE E:297570.3 **N:** 6256097.8
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 17
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	ROCK FRACTURE SPACING (m)	DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING TEST TYPE	TESTING RESULTS AND REMARKS
Free groundwater observed at 5.5m	53	0.0	FILL/ (CI) Silty CLAY; brown and orange; medium plasticity; trace siltstone gravel													D	0.1–0.2	0.1		
																D	0.4–0.5	0.4		
	52	1														D	0.9–1.0	0.9		
																SPT	1.0–1.45	1.0	SPT	3,6,8 N=14
					FILL	WC	<PL to >PL											1.45		
	51	2	2.2m: possibly natural															2		
																		2.5		
																SPT	2.5–2.95		SPT	3,8,13 N=21
		3.0	(CI-CH) Silty CLAY; dark brown and orange; medium to high plasticity; trace ironstone gravel															2.95		
	50																	3		
		4			ALV	VST	<PL											4.0		
	49															SPT	4.0–4.45		SPT	5,12,14 N=26
																		4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
OPERATOR: Rockwell
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.3m, NMLC coring to 13.19m
CASING: HW to 2.5m, HQ to 7.3m

REMARKS:

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2
COORDINATE E:297570.3 **N:** 6256097.8
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 17
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 2 of 3

CONDITIONS ENCOUNTERED																				SAMPLE				TESTING	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	FRACTURE SPACING (m)	DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Free groundwater observed at 5.5m	48	5.0	(CI-CH) Silty CLAY; dark brown and orange; medium to high plasticity; trace ironstone gravel		RES	VST	<PL									SPT		5.5	SPT	8,12,15 N=27
	47	6.2	SILTSTONE; orange and grey; very-low strength with clay seams, extremely to highly weathered, Bringelly Shale		XWM	NA	<PL							Unless otherwise noted all defects are bedding planes dipping at 0 - 10°				5.95		
	46	7.3	LAMINITE; grey and pale brown; medium to coarse; very low and low strength, Bringelly Shale					XW-HW	7.3	VL	100	71		7.35m: J		SPT		7.0	SPT	12,25/150
									7.88							C		7.3	PLT	0.13
								HW	7.93									7.45		
	45	8.0						MW	8.0	L								8.0	PLT	0.04
								HW	8.15	VL										
	44	8.55	LAMINITE; medium; with siltstone laminations, low strength, fresh, slightly fractured, Bringelly Shale					SW	8.55	L	100	94		9.23m: J 30° PL, SM, 2mm		C		9.0	PLT	0.16
		9.9	*(description next page)*					FR	9.9	H										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
OPERATOR: Rockwell
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.3m, NMLC coring to 13.19m
CASING: HW to 2.5m, HQ to 7.3m

REMARKS:

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2
COORDINATE E:297570.3 **N:** 6256097.8
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 17
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 3 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL: ORIGIN(#)	SOIL: CONSIS.(*) DENSITY.(*)	SOIL: MOISTURE	ROCK: WEATH.	ROCK: DEPTH (m)	ROCK: STRENGTH	ROCK: RECOVERY (%)	ROCK: RQD	ROCK: FRACTURE SPACING (m)	ROCK: DEFECTS & REMARKS	SAMPLE: SAMPLE REMARKS	SAMPLE: TYPE	SAMPLE: INTERVAL	DEPTH (m)	TESTING: TEST TYPE	TESTING: RESULTS AND REMARKS
Free groundwater observed at 5.5m	43	10	LAMINITE; fine to medium; with siltstone laminations, medium and high strength, fresh, slightly fractured, Bringelly Shale *(continued)*						10.6	H	100	94						10	PLT	1.2
										M									PLT	0.37
								FR	10.82									10.92		
	42	11								H				11.23m: B 0°-5° PL, SM, CLY, 2mm, x5				11	PLT	1.2
		11.73	LAMINITE; medium; 40% to 60% siltstone and 40% to 60% sandstone laminations, low strength, slightly fractured, Bringelly Shale						11.73											
	41	12									100	91				C		12		
								SW		L				12.48m: J 30° PL, SM, 5mm					PLT	0.13
	40	13																13	PLT	0.13
		13.19	Borehole discontinued at 13.19m depth Limit of investigation						13.19									13.19		
	39	14																14		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hanjin D&B 8D
OPERATOR: Rockwell
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.3m, NMLC coring to 13.19m
CASING: HW to 2.5m, HQ to 7.3m

REMARKS:

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BORE: BH17 PROJECT: 207476.00 October 2021



7.3m – 11.0m

BORE: BH17 PROJECT: 207476.00 October 2021



11.0m – 13.19m

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.2
COORDINATE **E:**297323.8 **N:** 6256097.5
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 18
PROJECT No: 207476.00
DATE: 02/11/21
SHEET: 1 of 1

CONDITIONS ENCOUNTERED									SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	55	0.0	FILL/ (CI) Silty CLAY; pale brown mottled pale orange; medium plasticity; trace siltstone and ironstone gravels		FILL	VC	>PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
		0.9	(CI) Silty CLAY; pale orange and pale grey; medium plasticity; trace siltstone gravel						D		0.9		
	54	1									1.0		
									SPT			SPT	4,5,7 N=12
											1.45		
					RES	ST	<PL						
	53	2									2		
		2.5	(CI-CH) Silty CLAY; dark grey mottled orange; medium to high plasticity			H					2.5		
									SPT			SPT	7,14,22 N=36
		3			RES	H	<PL				2.95		
	52										3		
		3.8	SILTSTONE; dark grey; very low strength, highly weathered, with extremely weathered bands, Bringelly Shale		XWM	XWR	NA						
		4									4.0		
		4.08							SPT			SPT	25/80
	51		Borehole discontinued at 4.08m depth Limit of investigation. Practical Refusal on at least very low strength rock.								4.08		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.3
COORDINATE **E:**297387.7 **N:** 6256113.9
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 19
PROJECT No: 207476.00
DATE: 28/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.5 depth	54 / 0.0	FILL/ (CI) Silty CLAY; pale orange mottled grey; medium plasticity; trace siltstone gravel		FILL	PC	>PL		D		0.1		
										0.2		
								D		0.4		
										0.5		
	0.6	(CI) Silty CLAY; pale brown; medium plasticity; trace siltstone gravel								0.9		
	1							D		1.0		
	53							SPT			SPT	6,8,10 N=18
										1.45		
				ALV	VST	<PL						
	2									2		
	52									2.5		
								SPT			SPT	4,10,14 N=24
										2.95		
	3.0	(CI-CH) Silty CLAY; pale orange; medium to high plasticity; trace siltstone and ironstone gravel								3		
	51											
	4			RES	VST	<PL				4.0		
	50							SPT			SPT	5,9,15 N=24
										4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydrapower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.3
COORDINATE **E:**297387.7 **N:** 6256113.9
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 19
PROJECT No: 207476.00
DATE: 28/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.5 depth	49 / 6	(CI-CH) Silty CLAY; pale orange; medium to high plasticity; trace siltstone and ironstone gravel *(continued)*		RES	VST	<PL		SPT		5.5	SPT	5,8,9 N=17
										5.95		
	48 / 6.7	(CI-CH) Silty CLAY; pale orange; medium to high plasticity; trace siltstone and ironstone gravel		RES	H	<PL		SPT		7.0	SPT	7,12,27 N=39
	47 / 7									7.45		
	46 / 8.0	SILTSTONE; pale grey; very low strength, highly weathered with clay bands and extremely weathered bands, Bringelly Shale		XWM	XWR	NA		SPT		8.5	SPT	25/40
	45 / 8.54	Borehole discontinued at 8.54m depth Limit of investigation. Practical Refusal on at least very low strength rock.								8.54		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydrapower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.7
COORDINATE **E:**297427.2 **N:** 6256123.6
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 20
PROJECT No: 207476.00
DATE: 02/11/21
SHEET: 1 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	ROCK FRACTURE SPACING (m)	ROCK DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING TEST TYPE	TESTING RESULTS AND REMARKS
Groundwater observed at 7.6m	53	0.0	FILL/ (CI) Silty CLAY; pale brown; medium plasticity; trace siltstone gravel (ripped shale)		FILL	WC	>PL									D	0.1–0.2	0.1		
																D	0.4–0.5	0.4		
		0.8	(CI) Silty CLAY; pale dark orange and pale brown; medium plasticity; trace ironstone gravel		ALV	ST	<PL									D	0.9–1.0	0.9		
	52	1														SPT	1.05	1.0	SPT	4,6,9 N=15
		2																2		
		2.6	(CI-CH) Silty CLAY; pale brown mottled orange; medium to high plasticity; trace ironstone gravel													SPT	2.5–2.95	2.5	SPT	10,13,9 N=22
	51	3			RES	VST	<PL											3		
	50	4														SPT	4.0–4.45	4.0	SPT	7,8,10 N=18
	49																	4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: MD300
OPERATOR: Traccess
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.9m, NMLC coring to 10.8m
CASING: Not used

REMARKS:

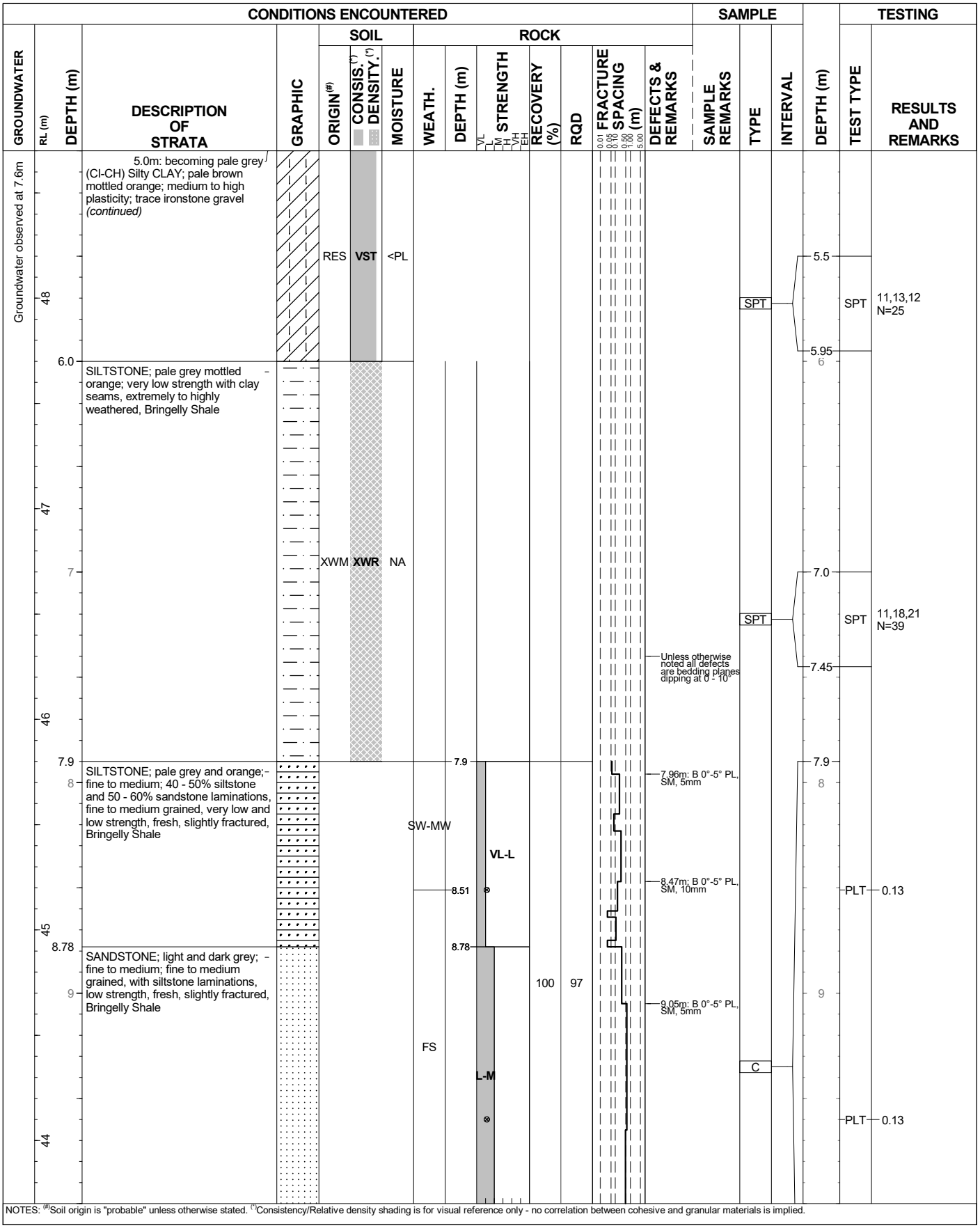
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.7
COORDINATE **E:**297427.2 **N:** 6256123.6
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 20
PROJECT No: 207476.00
DATE: 02/11/21
SHEET: 2 of 3



NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
OPERATOR: Traccess
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.9m, NMLC coring to 10.8m
CASING: Not used

REMARKS:

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.7
COORDINATE **E:**297427.2 **N:** 6256123.6
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 20
PROJECT No: 207476.00
DATE: 02/11/21
SHEET: 3 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL: ORIGIN(#)	SOIL: CONSIS.(*) DENSITY.(*)	SOIL: MOISTURE	ROCK: WEATH.	ROCK: DEPTH (m)	ROCK: STRENGTH (VL L M H VH EH)	ROCK: RECOVERY (%)	ROCK: RQD	ROCK: FRACTURE SPACING (m) (0.01 0.05 0.10 0.50 1.00 5.00)	ROCK: DEFECTS & REMARKS	SAMPLE: SAMPLE REMARKS	SAMPLE: TYPE	SAMPLE: INTERVAL	DEPTH (m)	TESTING: TEST TYPE	TESTING: RESULTS AND REMARKS
Groundwater observed at 7.6m			SANDSTONE; light and dark grey; fine to medium; fine to medium grained, with siltstone laminations, low strength, fresh, slightly fractured, Bringelly Shale *(continued)*					FS		L-M	100	97								
		10.52	SILTSTONE;; low strength, fresh, slightly fractured, Bringelly Shale					SW	10.53					10.67m: B,0°-5° PL, SM, 20mm					PLT	0.13
	43	10.8	Borehole discontinued at 10.80m depth Limit of investigation						10.8									10.8		
	42	11																11		
	41	12																12		
	40	13																13		
	39	14																14		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
OPERATOR: Traccess
LOGGED: RD

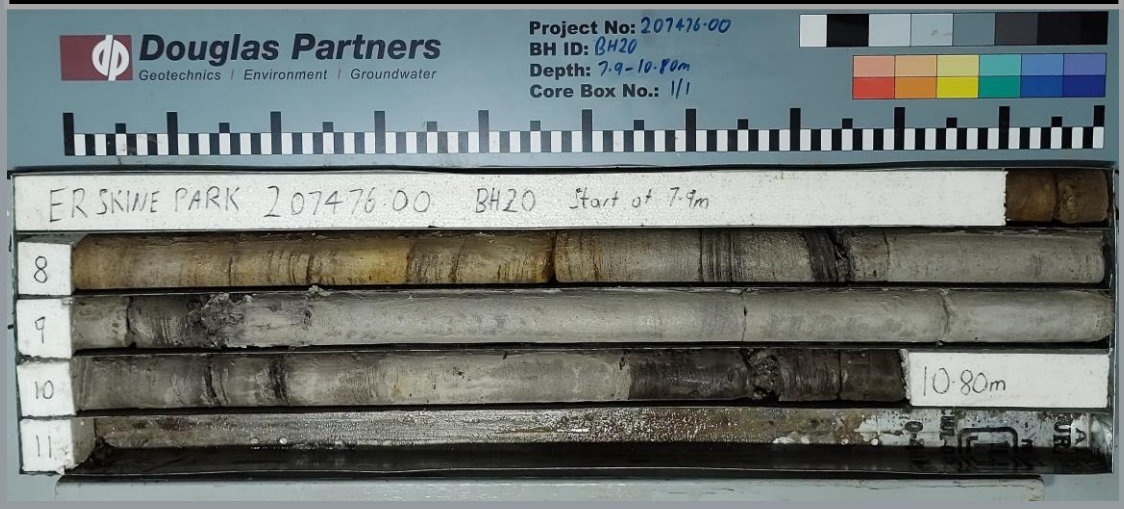
METHOD: 110mm Spiral Flight Auger to 7.9m, NMLC coring to 10.8m
CASING: Not used

REMARKS:

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BORE: BH20 **PROJECT: 207476.00** **October 2021**



7.9m – 10.8m

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4
COORDINATE **E:**297475.2 **N:** 6256134.8
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 21
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 7.0m	53	0.0	FILL/ (CI) Silty CLAY; dark orange and mottled brown white; medium plasticity; trace ironstone gravel		FILL	PC	<PL to >PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
									D		0.9		
	52	1									1.0		
									SPT			SPT	5,6,7 N=13
											1.45		
		2									2.0		
									SPT			SPT	11,15,19 N=34
		2.3	(CI-CH) Silty CLAY; pale brown and orange; medium to high plasticity; trace ironstone gravel								2.45		
	51												
		3			ALV	ST TO VST	<PL				3		
	50												
		4									4.0		
									SPT			SPT	7,7,9 N=16
	49	4.5	(CI-CH) Silty CLAY; pale orange and pale grey; medium to high plasticity; trace siltstone gravel		RES	ST TO VST	<PL				4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4
COORDINATE **E:**297475.2 **N:** 6256134.8
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 21
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 7.0m	48	0	(CI-CH) Silty CLAY; pale orange and pale grey; medium to high plasticity; trace siltstone gravel *(continued)*										
			5.3m: traces of pale grey and blue clay below										
					RES	ST TO VST	<PL		SPT		5.5	SPT	4,7,9 N=16
											5.95		
	47	6									6		
		7							SPT		7.0	SPT	25/80
	7.08		Borehole discontinued at 7.08m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.08		
	46	8									8		
	45	9									9		
	44												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.8
COORDINATE **E:**297543.4 **N:** 6256150.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 22
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.3m	52	0.0	FILL/ (CI) Silty CLAY; pale brown white; medium plasticity; trace siltstone gravel		FILL	WC	>PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
		1							D		0.9		
											1.0		
									SPT			SPT	3,4,6 N=10
		1.3	(CI) Silty CLAY; pale orange mottled grey; medium plasticity; trace ironstone and siltstone gravel		ALV	ST	<PL				1.45		
	51	2									2		
		2.4	(CI-CH) Silty CLAY; pale grey and pale brown mottled orange; medium to high plasticity; trace ironstone gravel								2.5		
									SPT			SPT	6,10,17 N=27
		3			ALV	VST	<PL				2.95		
	50										3		
	49	4.0	(CI) Silty CLAY; pale orange and pale grey; medium plasticity; trace gravel								4.0		
									SPT			SPT	4,6,8 N=14
					ALV	ST	<PL				4.45		
	48												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.8
COORDINATE **E:**297543.4 **N:** 6256150.1
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 22
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.3m			(CI) Silty CLAY; pale orange and pale grey; medium plasticity; trace gravel *(continued)*		ALV	ST	<PL				5.5		
	47	5.7	(CI-CH) Silty CLAY; pale grey; medium to high plasticity						SPT			SPT	3,6,12 N=18
		6			RES	VST	<PL				5.95 6		
	46	7.0	SILTSTONE; pale grey; very low strength, Bringelly Shale		XWM	XWR	NA		SPT		7.0	SPT	9/90
		7.09	Borehole discontinued at 7.09m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.09		
	45	8									8		
	44	9									9		
	43												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.3
COORDINATE **E:**297360.1 **N:** 6256139.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 23
PROJECT No: 207476.00
DATE: 27/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54	0.0	FILL/ (CI) Silty CLAY; orange and brown mottled grey; medium plasticity			WC	<PL to >PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
											0.9		
		1							D		1.0		
	53				FILL				SPT			SPT	4,6,10 N=16
											1.45		
		2	2.0m: fine grained sand below								2		
	52												
		2.5	(CI) Silty CLAY; pale orange mottled yellow; medium plasticity; trace siltstone gravel			VST	<PL				2.5		
									SPT			SPT	3,9,21 N=30
		3									2.95		
	51				ALV						3		
		4.0	(CI-CH) Silty CLAY; pale grey mottled orange; medium to high plasticity; trace siltstone gravel								4.0		
									SPT			SPT	6,15,20 N=35
	50				RES	H	<PL				4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.3
COORDINATE **E:**297360.1 **N:** 6256139.4
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 23
PROJECT No: 207476.00
DATE: 27/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	49	5.0	SILTSTONE; pale grey; very low strength, highly weathered, with extremely weathered bands, Bringelly Shale		XWM	XWR	NA		SPT	5.5 - 5.75	5.5	SPT	20,25/100
	48	6.0	Borehole discontinued at 6.00m depth Limit of investigation. Practical Refusal on at least very low strength rock.								6		
	47	7									7		
	46	8									8		
	45	9									9		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

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Douglas Partners
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5
COORDINATE **E:**297416 **N:** 6256165.5
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 24
PROJECT No: 207476.00
DATE: 27/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.5m	53	0.0	FILL/ (CI) Silty CLAY; brown mottled grey; medium plasticity		FILL	WC	>LL		D		0.1		
											0.2		
									D		0.4		
											0.5		
		0.7	FILL/ (CI) Silty CLAY; pale orange and brown mottled grey; medium plasticity; trace siltstone gravel, trace ironstone gravel										
									D		0.9		
	52	1			FILL	ST	<PL				1.0		
									SPT			SPT	4,6,10 N=16
											1.45		
		2									2		
	51	2.5	(CI) Silty CLAY; pale orange mottled black; medium plasticity; trace siltstone gravel								2.5		
									SPT			SPT	3,6,7 N=13
		3			ALV	ST	<PL				2.95		
	50										3		
		4.0	(CI-CH) Silty CLAY; pale orange and brown; medium to high plasticity								4.0		
									SPT			SPT	4,9,12 N=21
	49				ALV	VST	<PL				4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5
COORDINATE **E:**297416 **N:** 6256165.5
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 24
PROJECT No: 207476.00
DATE: 27/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.5m	5.0 / 48	(CI-CH) Silty CLAY; pale grey mottled orange; medium to high plasticity										
		5.5m: becoming pale orange mottled grey below						SPT		5.5	SPT	8,9,7 N=16
	6 / 47			RES	ST TO VST	<PL				5.95		
	7.0	SILTSTONE; grey; very low strength, Bringelly Shale		XWM	XWR	NA		SPT		7.0	SPT	25,25/100
	7.25	Borehole discontinued at 7.25m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.25		
	8 / 46											
	9 / 45											
	44											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1
COORDINATE **E:**297460.1 **N:** 6256183.3
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 25
PROJECT No: 207476.00
DATE: 28/10/21
SHEET: 1 of 3

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	SOIL ORIGIN(#)	SOIL CONSIS.(*) DENSITY.(*)	SOIL MOISTURE	ROCK WEATH.	ROCK DEPTH (m)	ROCK STRENGTH	ROCK RECOVERY (%)	ROCK RQD	ROCK FRACTURE SPACING (m)	ROCK DEFECTS & REMARKS	SAMPLE REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING TEST TYPE	TESTING RESULTS AND REMARKS
Graoundwater observed at 7.0m	53	0.0	FILL/ (CL-Cl) Silty CLAY; pale brown mottled grey; low to medium plasticity; trace plastic fragments		FILL	VC	>PL									D	0.1–0.2	0.1		
																D	0.4–0.5	0.4		
	52	1														D	0.9–1.0	0.9		
		1.3	(Cl) Silty CLAY; brown mottled brown; medium plasticity; trace ironstone and siltstone gravel		ALV	ST	<PL									SPT	1.45–1.6	1.45	SPT	5,5,6 N=11
	51	2																2		
		2.5	(Cl-CH) Silty CLAY; pale orange mottled grey; medium to high plasticity													SPT	2.5–2.95	2.5	SPT	3,6,12 N=18
	50	3			ALV	VST	<PL											2.95		
		4														SPT	4.0–4.45	4.0	SPT	3,7,10 N=17
																		4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
OPERATOR: Rockwell
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.5, NMLC Coring to 11.48m
CASING: HW to 2.5m, HQ to 7.5m

REMARKS:

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1
COORDINATE E:297460.1 **N:** 6256183.3
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 25
PROJECT No: 207476.00
DATE: 28/10/21
SHEET: 2 of 3

CONDITIONS ENCOUNTERED																		SAMPLE				TESTING	
				SOIL				ROCK															
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	WEATH.	DEPTH (m)	STRENGTH VL L M H VH EH	RECOVERY (%)	RQD	FRACTURE SPACING (m) 0.01 0.05 0.10 0.50 1.00 5.00	DEFECTS & REMARKS	SAMPLE REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Graoundwater observed at 7.0m	48	5.0	(CI-CH) Silty CLAY; grey mottled red and orange; medium to high plasticity; trace ironstone gravel		RES	F	<PL									SPT		5.5	SPT	3,3,4 N=7
	47	6																5.95		
		6.5	(CI-CH) Silty CLAY; pale grey; medium to high plasticity; with ironstone bands (possibly extremely weathered siltstone)		RES	H	<PL											6		
	46	7														SPT		7.0	SPT	8,27,37 N=64
		7.5	SANDSTONE; grey brown; fine grained, with siltstone laminations, very low and low strength with clay seams, highly weathered, slightly fractured, Bringelly Shale					HW	7.5	SEAM								7.45		
									7.7	VL				7.67m: B 0°-5° PL, SM, 20mm				7.5	PLT	
		7.97	SANDSTONE; grey and brown; fine- to medium; fine grained, with siltstone laminations, very low strength, highly weathered, fractured, Bringelly Shale						7.94 SEAM 7.97		100	80				C			PLT	0.03
	45							MW		L				8.28m: B 0°-5° PL, SM, 5mm				8		
		8.54	SANDSTONE; grey; fine to medium; fine to medium grained, trace siltstone laminations, low and medium strength, fresh, slightly fractured, Bringelly SHale						8.54					8.57m: B 0°-5° PL, SM, 5mm				8.51		
														8.73m: B 0°-5° PL, SM, 2mm					PLT	0.67
	44	9						FR		M	100	100						9		
														9.97m: B 0°-5° PL,					PLT	0.32

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: Hydropower Scout
OPERATOR: Rockwell
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.5, NMLC Coring to 11.48m
CASING: HW to 2.5m, HQ to 7.5m

REMARKS:

Douglas Partners
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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1
COORDINATE **E:**297460.1 **N:** 6256183.3
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 25
PROJECT No: 207476.00
DATE: 28/10/21
SHEET: 3 of 3

CONDITIONS ENCOUNTERED																		SAMPLE				TESTING	
				SOIL				ROCK															
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	WEATH.	DEPTH (m)	STRENGTH VL L M H VH EH	RECOVERY (%)	RQD	FRACTURE SPACING (m) 0.01 0.05 0.10 0.50 1.00 5.00	DEFECTS & REMARKS	SAMPLE REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Graoundwater observed at 7.0m	43		SANDSTONE; grey; fine to medium; fine to medium grained, trace siltstone laminations, low and medium strength, fresh, slightly fractured, Bringelly SHale *(continued)*											SM, 2mm		C				
								FR		M	100	100		10.25m: B 0°-5° PL, SM, 2mm					PLT	0.50
														10.67m: B 0°-5° PL, SM, 2mm						
														10.9m: B 0°-5° CLY, 4mm						
	42	11							11.3	L								11		
		11.48	Borehole discontinued at 11.48m depth Limit of investigation						11.48									11.48	PLT	0.17
	41	12																12		
	40	13																13		
	39	14																14		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
OPERATOR: Rockwell
LOGGED: RD

METHOD: 110mm Spiral Flight Auger to 7.5, NMLC Coring to 11.48m
CASING: HW to 2.5m, HQ to 7.5m

REMARKS:

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BORE: BH25 **PROJECT: 207476.00** **October 2021**



7.5m – 11.48m

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.8
COORDINATE **E:**297526.1 **N:** 6256205.8
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 26
PROJECT No: 207476.00
DATE: 27/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Graoundwater observed at 5.5m	52	0.0	FILL/ (CI) Silty CLAY; dark brown; medium plasticity; trace siltstone gravel, trace ironstone gravel		FILL	PC	>PL		D		0.1		
		0.2	FILL/ (CI) Silty CLAY; pale brown and red mottled grey; medium plasticity; trace ironstone and siltstone gravel								0.2		
									D		0.4		
											0.5		
									D		0.9		
	51	1									1.0		
					FILL	WC	<PL		SPT			SPT	4,6,8 N=14
											1.45		
		2									2		
		2.5	(CI-CH) Silty CLAY; pale brown and pale orange; medium to high plasticity								2.5		
	50								SPT			SPT	2,4,4 N=8
		3									2.95		
					ALV	F	<PL				3		
	49	4.0	(CI-CH) Silty CLAY; mottled orange grey; medium to high plasticity								4.0		
									SPT			SPT	3,4,4 N=8
					ALV	F	<PL				4.45		
	48												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.8
COORDINATE **E:**297526.1 **N:** 6256205.8
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 26
PROJECT No: 207476.00
DATE: 27/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Graoundwater observed at 5.5m	47	5.0	(CI) Sandy CLAY; orange; medium plasticity; sand is fine		ALV	F	<PL		SPT		5.5	SPT	3,3,5 N=8
	46	7.0	(CI-CH) Silty CLAY; pale grey; medium to high plasticity; with siltstone gravel (possibly extremely weathered siltstone)		RES	H	<PL		SPT		5.95 7.0	SPT	13,27/20
	45	7.5	SILTSTONE; dark grey; very low strength, highly weathered, with extremely weathered bands, Bringelly Shale		XWM	XWR	NA		SPT		7.17 8.5	SPT	25/60
	44	8.56	Borehole discontinued at 8.56m depth Limit of investigation. Practical Refusal on at least very low strength rock.								8.56		
	43	9									9		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:03. TEMPLATE ID: DP_101.02.00_SOILLOG

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2
COORDINATE **E:**297478.9 **N:** 6256231.2
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 27
PROJECT No: 207476.00
DATE: 27/10/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.0m	53	0.0	FILL/ (CI) Silty CLAY; brown mottled grey; medium plasticity; trace ironstone gravel		FILL	PC	>PL		D		0.1		
		0.3									0.2		
			FILL/ (CI) Silty CLAY; brown orange mottled grey; medium plasticity; trace siltstone and ironstone gravel						D		0.4		
											0.5		
									D		0.9		
	52	1									1.0		
									SPT			SPT	3,5,7 N=12
					FILL	WB	<PL				1.45		
	51	2									2		
		2.5	(CI) Silty CLAY; pale brown mottled grey; medium plasticity								2.5		
									SPT			SPT	4,8,11 N=19
		3									2.95		
	50		3.1m: 3.1-3.6m black		ALV	VST	<PL				3		
		4.0	(CI-CH) Silty CLAY; pale grey mottled orange; medium to high plasticity								4.0		
	49								SPT			SPT	3,5,9 N=14
					ALV	ST	<PL				4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2
COORDINATE **E:**297478.9 **N:** 6256231.2
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 27
PROJECT No: 207476.00
DATE: 27/10/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.0m	48 / 0	(CI-CH) Silty CLAY; pale grey mottled orange; medium to high plasticity *(continued)*		ALV	F ST	<PL						
	5.5	(CI-CH) Silty CLAY; pale orange; medium plasticity; trace fine sand, w<PL		RES	F	<PL		SPT		5.5	SPT	3,3,5 N=8
	47 / 6									5.95 / 6		
	7.0	SILTSTONE; dark grey; very low strength, Bringelly Shale		XWM	XWR	NA		SPT		7.0	SPT	13,25,25/50
	46 / 7.35	Borehole discontinued at 7.35m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.35		
	8									8		
	45											
	9									9		
	44											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Hydropower Scout
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Rockwell
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:03. TEMPLATE ID: DP_101.02.00_SOILLOG

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.9
COORDINATE **E:**297511.8 **N:** 6256243.6
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 28
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.3m	52	0.0	FILL/ (CI) Silty CLAY; dark brown mottled pale orange; medium plasticity; trace wood fragments, trace rootlets, trace ironstone and siltstone gravel		FILL	VC	<PL to >PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
									D		0.9		
		1									1.0	SPT	4,10,13 N=23
		1.8							SPT				
	51		(CI-CH) Silty CLAY; pale orange red pale grey; medium to high plasticity; trace ironstone and siltstone gravel								1.95		
		2									2		
											2.5		
					ALV	ST	<PL		SPT			SPT	4,6,7 N=13
	50										2.95		
		3									3		
		3.7	(CI) Silty CLAY; pale grey mottled orange; medium plasticity; trace siltstone gravel										
											4.0		
	49				RES	F	<PL					SPT	3,3,4 N=7
		4							SPT				
	48										4.95		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.9
COORDINATE **E:**297511.8 **N:** 6256243.6
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 28
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 5.3m	47 / 6	(CI) Silty CLAY; pale grey mottled orange; medium plasticity; trace siltstone gravel *(continued)*		RES	F	<PL		SPT		5.5	SPT	4,7,6 N=13
	6.1									5.95 / 6		
	46 / 7	SILTSTONE; grey; very low strength		XWM	XWR	NA		SPT		7.0	SPT	8,27/80
	7.22	Borehole discontinued at 7.22m depth Limit of investigation. Practical Refusal on at least very low strength rock.								7.22		
	45 / 8									8		
	44 / 9									9		
	43											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

EXPORTED 23/05/22 18:03. TEMPLATE ID: DP_101.02.00_SOILLOG

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4
COORDINATE **E:**297468.2 **N:** 6256257.7
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 29
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 1 of 3

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 6.6m	53 / 0.0	FILL/ (CI) Silty CLAY; pale brown and orange; medium plasticity; with siltstone gravel		FILL	F	<PL to >LL		D		0.1		
										0.2		
										0.4		
								D				
										0.8		
								D		0.9		
	1									1.0		
								SPT			SPT	3,4,7 N=11
	52									1.45		
	2									2		
	2.3 / 51	(CI-CH) Silty CLAY; pale orange; medium to high plasticity; trace rootlets										
										2.5		
								SPT			SPT	3,4,4 N=8
	3									2.95		
	50			ALV	F	<PL				3		
	4									4.0		
								SPT			SPT	3,4,6 N=10
	49									4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4
COORDINATE **E:**297468.2 **N:** 6256257.7
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 29
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 2 of 3

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 6.6m	48	(CI-CH) Silty CLAY; pale orange; medium to high plasticity; trace rootlets *(continued)*		ALV	F	<PL		SPT	5.5 - 5.95	5.5	SPT	4,4,4 N=8
	5.8	(CI-CH) Silty CLAY; pale grey and orange; medium to high plasticity		ALV	ST TO VST	<PL				5.95		
	6									6		
	47											
	7.0	(CI-CH) Silty CLAY; pale grey and pale orange; medium to high plasticity; trace siltstone gravel		RES	ST TO VST	<PL		SPT	7.0 - 7.45	7.0	SPT	5,5,13 N=18
	46									7.45		
	8									8		
	45							SPT	8.5 - 8.95	8.5	SPT	20,14,18 N=32
	9									8.95		
	9.1	SILTSTONE; grey; very low strength, Bringelly Shale		XWM	XWR	NA				9		
	44											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4
COORDINATE **E:**297468.2 **N:** 6256257.7
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 29
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 3 of 3

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater observed at 6.6m	43 / 10.13	Borehole discontinued at 10.13m depth Limit of investigation. Practical Refusal on at least very low strength rock.		XWM	XWR	NA		SPT	10.0-10.13	10.13	SPT	25/20

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1
COORDINATE **E:**297501.3 **N:** 6256272
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 30
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 1 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater found at 6.7m	53	0.0	FILL/ (CI) Silty CLAY; dark brown; medium plasticity; trace rootlets, trace plastic fragments, trace ironstone gravel		FILL	VC	<PL to >PL		D		0.1		
											0.2		
									D		0.4		
											0.5		
									D		0.9		
	52	1									1.0		
									SPT			SPT	3,5,4 N=9
											1.45		
		2									2		
	51	2.1	(CI-CH) Silty CLAY; pale brown and pale grey; medium to high plasticity; trace siltstone gravel										
											2.5		
									SPT			SPT	5,8,9 N=17
											2.95		
		3									3		
	50				ALV	ST TO VST	<PL						
		4									4.0		
	49		4.3m: becoming pale grey mottled orange						SPT			SPT	3,4,7 N=11
											4.45		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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BOREHOLE LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1
COORDINATE **E:**297501.3 **N:** 6256272
DATUM/GRID: GDA2020 Zone56
DIP/AZIMUTH: 90°/---

LOCATION ID: 30
PROJECT No: 207476.00
DATE: 01/11/21
SHEET: 2 of 2

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Groundwater found at 6.7m	48	6	(CI-CH) Silty CLAY; pale brown and pale grey; medium to high plasticity; trace siltstone gravel *(continued)*		ALV	ST TO VST	<PL		SPT		5.5 5.95	SPT	3,4,7 N=11
	47	7.0	(CI-CH) Silty CLAY; pale grey; medium to high plasticity; trace siltstone gravel		ALV	F	<PL		SPT		7.0 7.45	SPT	3,3,5 N=8
	46	7.9 8	SILTSTONE; grey; very low strength		XWM	XWR	NA						
	45	8.68	Borehole discontinued at 8.68m depth Limit of investigation. Practical Refusal on at least very low strength rock.						SPT		8.5 8.68	SPT	14,25/30
	44	9									9		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: MD300
METHOD: 110mm Spiral Flight Auger
REMARKS:

OPERATOR: Traccess
CASING: Not used

LOGGED: RD

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 56
COORDINATE **E:**297349.2 **N:** 6255954.9
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 31
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CI) Silty CLAY; brown; medium plasticity; with siltstone and sandstone gravel		FILL	UK	<PL					DCP/150	5 10 15
	0.15	(CH) Silty CLAY; pale grey mottled orange; high plasticity; trace rootlets, with ironstone gravel		RES	ST TO VST	>PL		B		0.3 0.4		
	55 1									1		
	1.5	Test pit discontinued at 1.50m depth Limit of investigation										
	54 2									2		
	53 3									3		
	52 4									4		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: KA

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5
COORDINATE **E:**297472.6 **N:** 6255990.2
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 32
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54	0.0	FILL/ (CL) Silty CLAY; orange brown mottled yellow and red; medium plasticity; with vegetation, with siltstone and sandstone gravel, with sandstone boulder and cobbles		FILL	VC	>PL		B	0.5–0.6	0.5	DCP/150	5 10 15 22 22
	53	1.0	1.3m: Plastic pipe on southern side of pit								1		
		1.5	Test pit discontinued at 1.50m depth Limit of investigation								2		
	52	2									3		
	51	3									4		
	50	4											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: KA

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Photo 1 - Test Pit 31



Photo 2 - Test Pit 32

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	207476.00
	Lockwood Road Data Centre	PLATE No:	1
	68 - 124 Lockwood Road, Erskine Park	REV:	A
	CLIENT:	DATE:	Oct-20

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5
COORDINATE **E:**297610.3 **N:** 6256011.9
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 33
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 0.0	FILL/ (CI-CH) Silty CLAY; medium to high plasticity; with siltstone and sandstone gravel and cobbles		FILL	WC						DCP/150	5 10 15
	0.5	(CI-CH) Silty CLAY; medium to high plasticity; with ironstone gravel		RES		<PL		B		0.5 0.6		
	0.8	Test pit discontinued at 0.80m depth Limit of investigation										
	1									1		
	52 2									2		
	51 3									3		
	50 4									4		
	49											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire

LOGGED: KA

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.9
COORDINATE **E:**297336.2 **N:** 6256012.9
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 34
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		0.0	FILL/ (CI) Silty CLAY; brown; medium plasticity; with siltstone and sandstone gravel		FILL	NA	<PL					DCP/150	5 10 15
		0.1	(CI-CH) Silty CLAY; orange brown; medium to high plasticity; with ironstone gravel		RES	F TO ST	<PL						
		0.45	(CI-CH) Silty CLAY; pale grey and grey; medium plasticity; with ironstone banding		RES	H	<PL		B		0.5 / 0.6		
		0.7	Test pit discontinued at 0.70m depth Practical refusal on ironstone gravel										25
	55	1									1		
	54	2									2		
	53	3									3		
	52	4									4		
	51												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: KA

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Photo 3 - Test Pit 33



Photo 4 - Test Pit 34

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	207476.00
	Lockwood Road Data Centre	PLATE No:	2
	68 - 124 Lockwood Road, Erskine Park	REV:	A
	CLIENT:	DATE:	Oct-20

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4
COORDINATE **E:**297588.1 **N:** 6256063.9
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 35
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; orange brown; medium plasticity; with siltstone and sandstone gravel and cobbles, with ironstone gravel		FILL	VC	=PL				1	DCP/150	5 10 15
	52	1.7	Test pit discontinued at 1.70m depth Limit of investigation								2		
	51	2									3		
	50	3									4		
	49	4											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: KA

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.7
COORDINATE **E:**297451.1 **N:** 6256107.2
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 36
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		0.0	FILL/ (CI) Silty CLAY; pale grey and orange brown; medium plasticity; with siltstone and sandstone gravel, with sandstone cobbles		FILL	WC	<PL					DCP/150	5 10 15
		0.3	FILL/ (CI) Silty CLAY; dark brown; medium plasticity; with rootlets, with siltstone gravel		FILL	WC	<PL		B		0.5		
	53	0.6	(CI-CH) Silty CLAY; orange brown; medium plasticity; with ironstone gravel		RES	H	<PL				0.6	PP	410--420
		1.0	Test pit discontinued at 1.00m depth Practical refusal on ironstone gravel								1		
	52	2									2		
	51	3									3		
	50	4									4		
	49												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: KA

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Photo 5 - Test Pit 35



Photo 6 - Test Pit 36

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	207476.00
	Lockwood Road Data Centre	PLATE No:	3
	68 - 124 Lockwood Road, Erskine Park	REV:	A
	CLIENT:	DATE:	Oct-20

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1
COORDINATE **E:**297553 **N:** 6256122
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 37
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; orange brown mottled pale grey; medium plasticity; with siltstone and sandstone gravel and cobbles, with ironstone gravel		FILL	WC	<PL		B		0.5 0.6	DCP/150	5 10 15
	52	1									1		
		1.5	Test pit discontinued at 1.50m depth Limit of investigation										
	51	2									2		
	50	3									3		
	49	4									4		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: KA

EXPORTED 23/05/22 17:59. TEMPLATE ID: DP_101.02.00_SOILLOG

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.3
COORDINATE **E:**297315.2 **N:** 6256111.4
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 38
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	55	0.0	FILL/ (CI-CH) Silty CLAY; pale grey mottled orange; medium to high plasticity; with siltstone and ironstone gravel		FILL	PC	<PL					DCP/150	5 10 15
		0.23	FILL/ (CI) Silty CLAY; dark brown; medium plasticity; with rootlets		FILL	WC	<PL						
		0.4	(CH) Silty CLAY; pale grey mottled orange; high plasticity; with ironstone gravel		RES	ST TO VST	=PL		B	0.5 - 0.6	0.5		
	54	1									1		
		1.4	(CH) Silty CLAY; grey; high plasticity; with ironstone gravel		RES	H	NA						
		1.5	Test pit discontinued at 1.50m depth Limit of investigation										
	53	2									2		
	52	3									3		
	51	4									4		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: KA

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Photo 7 - Test Pit 37



Photo 8 - Test Pit 38

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	207476.00
	Lockwood Road Data Centre	PLATE No:	4
	68 - 124 Lockwood Road, Erskine Park	REV:	A
	CLIENT:	DATE:	Oct-20

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3
COORDINATE **E:**297433.4 **N:** 6256200.1
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 39
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; brown grey; medium plasticity; with rootlets, with siltstone and sandstone gravel, with sandstone boulders		FILL	WC	<PL		B		0.5 0.6	DCP/150	5 10 15
		1.0	FILL/ (CI-CH) Silty CLAY; dark brown; medium to high plasticity; with rootlets throughout, with ironstone gravel (possible old topsoil layer)		FILL	PC	<PL				1		
	52	1.2	(CI-CH) Silty CLAY; pale grey mottled orange; medium to high plasticity; with ironstone gravel		RES	ST TO VST	<PL					PP	220--240
		1.5	Test pit discontinued at 1.50m depth Limit of investigation										
	51	2									2		
	50	3									3		
	49	4									4		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire

LOGGED: KA

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Refer to explanatory notes for symbol and abbreviation definitions

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 68-124 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2
COORDINATE **E:**297492.5 **N:** 6256292.8
DATUM/GRID: GDA2020 Zone56

LOCATION ID: 40
PROJECT No: 207476.00
DATE: 19/10/21
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (CL) Silty CLAY; brown; low plasticity; with rootlets, with siltstone and sandstone gravel, with sandstone cobbles and boulders		FILL	VC	<PL		B	0.5–0.6	0.5	DCP/150	5 10 15
	0.7	FILL/ (CI-CH) Silty CLAY; pale grey mottled orange brown; medium to high plasticity; with rootlets, with ironstone gravel and cobbles, with siltstone and sandstone gravel		FILL	WC	<PL				1		
	52 / 1	1.3m: -possibly natural										
	1.5	Test pit discontinued at 1.50m depth Limit of investigation										
	51 / 2									2		
	50 / 3									3		
	49 / 4									4		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 5 tonne bucket
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: KA

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Photo 9 - Test Pit 39



Photo 10 - Test Pit 40

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	207476.00
	Lockwood Road Data Centre	PLATE No:	5
	68 - 124 Lockwood Road, Erskine Park	REV:	A
	CLIENT:	DATE:	Oct-20

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.7 AHD
COORDINATE E:297363.9 **N:** 6255953.2
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 1
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CI) Silty CLAY; pale brown; low plasticity; trace surficial vegetation, trace gravel		FILL	WC	<PL		A B		0.1 0.2		
	0.3	(CI-CH) Silty CLAY; brown, mottled orange; medium to high plasticity; stiff		RES	ST	<PL		A		0.4		
	0.5	Test pit discontinued at 0.50m depth								0.5		

55 54 53 52 (RL (m)) 1 2 3 (DEPTH (m))

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: AFH

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5 AHD
COORDINATE E:297471.2 **N:** 6255984.4
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 2
PROJECT No: 207476.01
DATE: 08/02/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54	0.0	FILL/ (Cl) Silty CLAY; pale grey; medium plasticity; trace surficial vegetation		FILL	VC	<PL		A		0.1 0.2		
		0.3	FILL/ (Cl) Silty CLAY; brown; medium plasticity; with gravel, trace sand		FILL	WC	<PL		A B		0.9 1.0		
	53	1.5	FILL/ (Cl) Silty CLAY; brown; medium plasticity; trace rootlets, trace organic matter		FILL	PC	<PL		A		1.4 1.5		
		1.6	(Cl-CH) Silty CLAY; pale brown; medium to high plasticity; stiff		RES	ST	<PL						
		1.8	Test pit discontinued at 1.80m depth										
	52	2									2		
	51	3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire

LOGGED: AFH

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Refer to explanatory notes for symbol and abbreviation definitions

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.8 AHD
COORDINATE E:297564.8 **N:** 6256000.1
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 3
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0 / 53.8	FILL/ (CI) Silty CLAY; brown; medium plasticity; trace surficial vegetation, trace sand		FILL	VC	<PL		A	0.1 - 0.2	0.1 - 0.2		
	0.4 / 53.4	FILL/ (CI) Silty CLAY; dark red, brown; medium plasticity		FILL	WC	<PL		A	0.9 - 1.0	0.9 - 1.0		
	1.1 / 52.7	FILL/ (CI) Silty CLAY; dark red; medium plasticity; trace gravel (possibly natural)		FILL	WC	<PL		A	1.4 - 1.5	1.4 - 1.5		
	1.6 / 52.2	Test pit discontinued at 1.60m depth										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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Refer to explanatory notes for symbol and abbreviation definitions

Douglas Partners
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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4 AHD
COORDINATE E:297624.2 **N:** 6256011
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 4
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
Moist below 1.3m	0.0 / 53	FILL/ (Cl) Silty CLAY; brown; medium plasticity; trace sand, trace plastic, with surficial vegetation		FILL	MC	<PL		A	0.1–0.2	0.1–0.2		
	0.4	FILL/ (Cl) Silty CLAY; grey brown; medium plasticity; trace plastic		FILL	WC	<PL		A	0.4–0.5	0.4–0.5		
	0.9 / 1 / 52	(Cl) Silty CLAY; pale grey, orange; medium plasticity; stiff to very stiff		RES	ST TO VST	<PL		A	0.9–1.0	0.9–1.0		
	1.8 / 2 / 51	Test pit discontinued at 1.80m depth								2		
	3 / 50									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.4 AHD
COORDINATE E:297387.3 **N:** 6255980.1
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 5
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	55	0.0	FILL/ (CI) Silty CLAY; brown; medium plasticity; trace surficial vegetation, trace ironstone gravel, with gravel		FILL	WC	<PL		A		0.1		
											0.2		
									A		0.4		
									B		0.5		
		1							A		0.9		
											1.0		
		1.3	FILL/ (CH) Silty CLAY; brown; high plasticity; trace gravel		FILL	VC	<PL						
	54	1.4	(CH) Silty CLAY; brown, mottled orange; high plasticity; stiff		RES	ST	<PL		A		1.4		
											1.5		
									A		1.65		
		1.8	Test pit discontinued at 1.80m depth								1.75		
	53	2									2		
		3									3		
	52												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: AFH

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Douglas Partners
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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.2 AHD
COORDINATE E:297489.4 **N:** 6256005.5
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 6
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54	0.0	FILL/ (CI) Silty CLAY; pale grey; low plasticity; with surficial vegetation		FILL	WC	<PL		A	0.1–0.2	0.1		
		0.3	FILL/ (CI-CH) Silty CLAY; pale orange, mottled grey; medium to high plasticity; trace gravel		FILL	WC	<PL		A B	0.9–1.0	0.9		
	53	1									1		
		1.7	FILL/ (CI-CH) Silty CLAY; pale grey; medium to high plasticity; trace gravel		FILL	WC	<PL		A	1.7–1.8	1.7		
		1.9	(CI-CH) Silty CLAY; pale orange, mottled grey; medium to high plasticity; stiff		RES	ST	<PL						
		2.0	Test pit discontinued at 2.00m depth								2		
	52												
		3									3		
	51												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: AFH

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5 AHD
COORDINATE E:297582.9 **N:** 6256028
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 7
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (Cl) Silty CLAY; brown; medium plasticity; trace gravel, trace surficial vegetation		FILL	VC	<PL		A		0.1 0.2		
		0.3	FILL/ (Cl) Silty CLAY; grey brown; medium plasticity		FILL	WC	<PL		A		0.4 0.5		
	52	0.8 1	(Cl-CH) Silty CLAY; pale grey, orange; medium to high plasticity; stiff		RES	ST	<PL		A		0.9 1.0		
		1.5	Test pit discontinued at 1.50m depth						A		1.4 1.5		
	51	2									2		
		3									3		
	50												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.7 AHD
COORDINATE E:297397 **N:** 6256026.9
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 8
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54	0.0	FILL/ (CI) Silty CLAY; pale grey; medium plasticity; trace gravel, trace ironstone gravel, trace surficial vegetation		FILL	VC	<PL		A		0.1 0.2		
		0.3	FILL/ (CI-CH) Silty CLAY; grey, mottled orange; medium to high plasticity						A B		0.4 0.5		
			0.9m: high plasticity		FILL	WC	<PL		A		0.9 1.0		
									A		1.4 1.5		
	53	1.6 1.7	(CI-CH) Silty CLAY; orange, mottled grey; medium to high plasticity; very stiff		RES	VST	<PL						
			Test pit discontinued at 1.70m depth										
	52	2									2		
		3									3		
	51												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire

LOGGED: AFH

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.2 AHD
COORDINATE E:297455.3 **N:** 6256038.4
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 9
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54	0.0	FILL/ (Cl) Silty CLAY; pale red, pale grey; medium plasticity; trace shale fragments, trace surficial vegetation		FILL	WC	<PL		A		0.1		
		0.2	FILL/ (Cl) Silty CLAY; dark red, pale grey; medium plasticity; trace gravel		FILL	WC	<PL		A		0.2 0.4		
		0.8	(Cl) Silty CLAY; pale grey, pale orange; medium plasticity; trace gravel, very stiff		RES	VST	<PL		A		0.5 0.9		
	53	1									1.0		
		1.3	Test pit discontinued at 1.30m depth										
	52	2									2		
	51	3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5 AHD
COORDINATE E:297537.3 **N:** 6256060.5
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 10
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0 / 53.5	FILL/ (Cl) Silty CLAY; pale red, brown; medium plasticity; trace gravel, trace surficial vegetation		FILL	VC	<PL		A	0.1-0.2	0.1 0.2		
	0.25 / 53	FILL/ (Cl) Silty CLAY; dark orange, grey; medium plasticity; trace ironstone gravel		FILL	WC	<PL		A	0.4-0.5	0.4 0.5		
	0.9 / 52.6 1	FILL/ (Cl) Silty CLAY; pale grey, purple, orange; medium plasticity; (possibly natural)		FILL	WC	<PL		A	0.9-1.0	0.9 1.0		
	1.3 / 52.2	(Cl) Silty CLAY; pale grey, orange; medium plasticity; very stiff		RES	VST	<PL		A	1.4-1.5	1.4 1.5		
	1.7 / 51.8 2 3	Test pit discontinued at 1.70m depth								2 3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE E:297597.1 **N:** 6256074.7
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 11
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (CI) Silty CLAY; pale brown; medium plasticity; trace sand, trace surficial vegetation		FILL	MC	<PL		A	0.1 - 0.2	0.1 - 0.2		
	0.4	(CI-CH) Silty CLAY; pale grey, red; medium to high plasticity; stiff to very stiff		RES	ST TO VST	<PL		A	0.4 - 0.5	0.4 - 0.5		
	1							A	0.9 - 1.0	0.9 - 1.0		
	52 / 1.2	(CI-CH) Silty CLAY; pale grey, pale red; medium to high plasticity; stiff to very stiff		RES	ST TO VST	<PL						
	1.8	Test pit discontinued at 1.80m depth										
	2 / 51									2		
	3 / 50									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

EXPORTED 04/04/23 18:59. TEMPLATE ID: DP_101.02.00_SOILLOG

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.2 AHD
COORDINATE E:297349.7 **N:** 6256050.1
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 12
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	55	0.0	FILL/ (CI) Silty CLAY; light brown and mottled grey; medium plasticity; with ironstone gravel, trace surficial vegetation		FILL	VC	<PL	*	A	0.1-0.2	0.1		
		0.3	(CI-CH) Silty CLAY; dark orange; medium to high plasticity; trace ironstone gravel, stiff		RES	ST	<PL		A	0.4-0.5	0.4		
		0.6	Test pit discontinued at 0.60m depth								0.5		
	54	1									1		
	53	2									2		
	52	3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS: *PACM 2 and 3

OPERATOR: A&A Hire
LOGGED: NW

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.1 AHD
COORDINATE E:297426.9 **N:** 6256077.2
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 13
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54 / 0.0	FILL/ (Cl) Silty CLAY; pale grey, pale red; medium plasticity; trace ironstone gravel, trace surficial vegetation		FILL	VC	<PL		A	0.1	0.1		
	0.2	FILL/ (Cl) Silty CLAY; pale brown, pale grey; medium plasticity; trace gravel		FILL	WC	<PL		A	0.4	0.2		
	0.7	FILL/ (Cl) Silty CLAY; dark brown, pale red; medium plasticity; trace gravel		FILL	WC	<PL		A	0.9	0.4		
	53 / 1									0.5		
	1.2	FILL/ (Cl) Silty CLAY; dark brown/black; medium plasticity		FILL	WC	<PL		A	1.4	0.9		
	2									1.0		
	52 / 2.1	Test pit discontinued at 2.10m depth								1.4		
										1.5		
	3									2		
	51									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire

LOGGED: RD

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.7 AHD
COORDINATE E:297482.5 **N:** 6256080.5
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 14
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (Cl) Silty CLAY; pale brown, pale grey; medium plasticity; trace gravel, trace surficial vegetation		FILL	VC	<PL		A	0.1	0.1		
	0.2	FILL/ (Cl) Silty CLAY; pale grey, pale orange; medium plasticity; trace siltstone gravel		FILL	WC	<PL		A	0.4	0.2		
	0.8	FILL/ (CH) Silty CLAY; pale grey, pale orange; high plasticity; trace gravel (possibly natural)		FILL	WC	<PL		A	0.9	0.4		
	1									0.5		
	1.3	Test pit discontinued at 1.30m depth								1.0		
	52 / 2									2		
	51 / 3									3		
	50											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
COORDINATE E:297528.9 **N:** 6256094.5
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 15
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; pale grey, brown; medium plasticity; trace gravel, trace surficial vegetation		FILL	VC	<PL		A	0.1-0.2	0.1		
		0.3	FILL/ (CI) Silty CLAY; pale brown, orange; medium plasticity		FILL	WC	<PL		A	0.4-0.5	0.4		
		0.8	FILL/ (CI) Silty CLAY; pale grey, red, orange; medium plasticity; trace gravel		FILL	WC	<PL		A	0.9-1.0	0.9		
	52	1.3	FILL/ (CI) Silty CLAY; pale grey, dark orange; medium plasticity; trace gravel		FILL	WC	<PL		A	1.4-1.5	1.4		
		1.7	Test pit discontinued at 1.70m depth								2		
	51	2									3		
	50	3											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1 AHD
COORDINATE E:297567.8 **N:** 6256109.2
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 16
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (CI) Silty CLAY; brown, dark brown and grey; medium plasticity; with ironstone and siltstone gravel, trace surficial vegetation		FILL	WC	=PL		A		0.1 0.2		
								A		0.4 0.5		
	52 / 1	1.3m: red brown, medium to high plasticity						A B		0.9 1.0		
	1.6	(CI-CH) Silty CLAY; red brown, mottled grey; medium to high plasticity; with ironstone gravel, stiff		RES	ST	=PL		A		1.4 1.5 1.7		
	1.8	Test pit discontinued at 1.80m depth								1.8		
	51 / 2									2		
	50 / 3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: PJ

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.1 AHD
COORDINATE E:297333.2 **N:** 6256085.8
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 17
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	55 / 0.0	FILL/ (Cl) Silty CLAY; pale brown; medium plasticity; trace surficial vegetation, trace ironstone gravel		FILL	VC	<PL		A		0.1 0.2		
	0.3	FILL/ (Cl) Silty CLAY; pale brown, mottled grey; medium plasticity; trace rootlets, with ironstone gravel		FILL	WC	<PL		A B		0.4 0.5		
	0.8	(CH) Silty CLAY; light brown and orange; medium plasticity; trace rootlets, with ironstone gravel, stiff		RES	ST	=PL		A		0.9 1.0		
	54 / 1.05	Test pit discontinued at 1.05m depth										
	53 / 2									2		
	52 / 3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: NW

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Douglas Partners
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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.9 AHD
COORDINATE E:297424.5 **N:** 6256107.2
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 18
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		0.0	FILL/ (Cl) Silty CLAY; pale brown; medium plasticity; trace surficial vegetation		FILL	VC	<PL				0.1		
		0.1	FILL/ (Cl-CH) Silty CLAY; pale brown, mottled orange; medium to high plasticity		FILL	WC	<PL		A		0.2		
		0.4	FILL/ (Cl) Silty CLAY; brown; medium plasticity		FILL	WC	<PL		B		0.3		
		0.7	FILL/ (Cl-CH) Silty CLAY; pale brown, mottled orange; medium to high plasticity		FILL	WC	<PL		A		0.4		
	53	1									0.5		
		1.2	(Cl-CH) Silty CLAY; pale grey, mottled orange; medium to high plasticity; stiff		RES	ST	<PL		A		0.9		
		1.7	Test pit discontinued at 1.70m depth								1.0		
	52	2									1.4		
											1.5		
	51	3									2		
	50										3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: AFH

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5 AHD
COORDINATE E:297465.8 **N:** 6256122.6
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 19
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN[#]	CONSIS.[*] / DENSITY.[*]	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0 / 53	FILL/ (CL-CI) Silty CLAY; pale brown; low to medium plasticity; trace ironstone and siltstone gravel, trace surficial vegetation		FILL	VC	<PL		A		0.1		
	0.2	FILL/ (CI-CH) Silty CLAY; red brown, pale grey and brown; medium to high plasticity; trace ironstone gravel, rootlets		FILL	WC	=PL		A		0.2 0.4 0.5		
	1 / 1.2 / 52	FILL/ (CI-CH) Silty CLAY; pale brown and red brown; medium to high plasticity; trace ironstone and siltstone gravel		FILL	WC	<PL		A B		0.9 1.0		
	1.6	(CI-CH) Silty CLAY; red brown, mottled pale grey; medium to high plasticity; stiff		RES	ST	=PL		A		1.4 1.5		
	1.7	Test pit discontinued at 1.70m depth										
	2 / 51									2		
	3 / 50									3		

NOTES: [#]Soil origin is "probable" unless otherwise stated. [*]Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire

LOGGED: PJ

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1 AHD
COORDINATE E:297513.2 **N:** 6256134.5
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 20
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; pale brown; medium plasticity; trace gravel, trace surficial vegetation		FILL	VC	<PL		A	0.1 0.2	0.1 0.2		
									A	0.4 0.5	0.4 0.5		
		0.8	FILL/ (CI-CH) Silty CLAY; pale grey, red; medium to high plasticity		FILL	WC	<PL		A	0.9 1.0	0.9 1.0		
	52	1											
		1.3	(CI-CH) Silty CLAY; pale red, pale grey; medium to high plasticity; very stiff to hard		RES	VST TO H	<PL		A	1.4 1.5	1.4 1.5		
			1.6m: becoming hard below										
		2.0	Test pit discontinued at 2.00m depth								2		
	51												
		3									3		
	50												

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 52.9 AHD
COORDINATE E:297546.6 **N:** 6256141.6
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 21
PROJECT No: 207476.01
DATE: 08/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0 / 52	FILL/ (Cl) Silty CLAY; pale brown; medium plasticity; trace sand and gravel, trace surficial vegetation		FILL	MC	<PL		A		0.1 0.2		
	0.3 / 1	FILL/ (Cl) Silty CLAY; pale grey, orange; medium plasticity; trace gravel		FILL	MC	<PL		A A		0.4 0.5 0.9 1.0		
	1.1	FILL/ (Cl) Silty CLAY; pale grey/brown; medium plasticity; trace ironstone gravel		FILL	WC	<PL						
	1.3	FILL/ (Cl-CH) Silty CLAY; pale red, grey, brown; medium to high plasticity		FILL	WC	<PL		A		1.4 1.5		
	1.8 / 51	(Cl-CH) Silty CLAY; orange, mottled grey; medium to high plasticity; stiff to very stiff		RES	ST TO VST	<PL		A		1.9		
	2.0	Test pit discontinued at 2.00m depth								2.0		
	3 / 50									3		
	49											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: RD

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.7 AHD
COORDINATE E:297347.2 **N:** 6256112.2
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 22
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CI) Silty CLAY; light grey; medium plasticity; with ironstone gravel, trace surficial vegetation		FILL	VC	<PL		A B	0.1–0.2	0.1 0.2		
	0.3	(CH) Silty CLAY; light brown and orange; high plasticity; with ironstone gravel, stiff		RES	ST	=PL		A	0.4–0.5	0.4 0.5		
	0.6	Test pit discontinued at 0.60m depth										
	54											
	1									1		
	53											
	2									2		
	52											
	3									3		
	51											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: NW

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Douglas Partners
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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.9 AHD
COORDINATE E:297392 **N:** 6256163.9
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 23
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0 / 53.9	FILL/ (CI) Silty CLAY; light brown; medium plasticity; with ironstone gravel, trace surficial vegetation		FILL	WC	<PL		A		0.1 0.2		
	0.3	FILL/ (CI) Silty CLAY; light brown, mottled grey and red clay; medium plasticity; with ironstone gravel		FILL	WC	=PL		A B		0.4 0.5		
	0.6	(CH) Silty CLAY; red and brown; high plasticity; trace organic material, with ironstone gravel, stiff		RES	ST	=PL		A		0.9		
	1.0 / 53	Test pit discontinued at 1.00m depth								1.0		
	52 / 2									2		
	51 / 3									3		
	50											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: NW

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Douglas Partners
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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
COORDINATE E:297460.4 **N:** 6256167.9
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 24
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; pale brown; medium plasticity; with ironstone gravel, siltstone gravel, and boulder, trace surficial vegetation		FILL	WC	<PL	*	A		0.1		
		0.2	FILL/ (CI) Silty CLAY; dark grey, red brown, brown and pale grey; medium plasticity; trace siltstone gravel						A		0.2		
											0.4		
					FILL	WC	=PL				0.5		
	52	1							A		0.9		
									B		1.0		
		1.4	(CH) Silty CLAY; red brown, mottled pale grey; high plasticity; trace ironstone gravel, stiff		RES	ST	=PL						
		1.5	Test pit discontinued at 1.50m depth										
	51	2									2		
	50	3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS: *PACM 1

OPERATOR: A&A Hire

LOGGED: PJ

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1 AHD
COORDINATE E:297508.6 **N:** 6256180.7
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 25
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (Cl) Silty CLAY; light grey; medium plasticity; trace surficial vegetation		FILL	VC	<PL		A	0.1 - 0.2	0.1		
	0.3	FILL/ (Cl) Silty CLAY; red brown and mottled grey; medium plasticity; with ironstone gravel		FILL	WC	=PL		A	0.4 - 0.5	0.4		
	0.8	FILL/ (Cl) Silty CLAY; light brown; medium plasticity; trace organic matter		FILL	WC	<PL		A B	0.9 - 1.0	0.9		
	1 / 52 / 1.3	FILL/ (Cl) Silty CLAY; light brown and mottled grey; medium plasticity; with ironstone gravel		FILL	WC	<PL		A	1.4 - 1.5	1.4		
	1.6	FILL/ (CH) Silty CLAY; brown and mottled light grey; high plasticity; trace ironstone gravel		FILL	WC	<PL		A	1.9 - 2.0	1.9		
	2 / 2.05 / 51	(CH) Silty CLAY; dark brown and orange; high plasticity; with ironstone gravel, stiff		RES	ST	=PL		A	2.1 - 2.2	2.1		
	2.3	Test pit discontinued at 2.30m depth								3		
	3 / 50											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: NW

EXPORTED 04/04/23 19:00. TEMPLATE ID: DP_101.02.00_SOILLOG

Refer to explanatory notes for symbol and abbreviation definitions

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.9 AHD
COORDINATE E:297391.6 **N:** 6256163.9
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 26
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CI) Silty CLAY; light brown; medium plasticity; with ironstone gravel, trace surficial vegetation		FILL	WC	<PL		A B		0.1 0.2		
	0.4	(CI) Silty CLAY; mottled pale grey, red clay; medium plasticity; with ironstone gravel, stiff		RES	ST	=PL		A		0.4		
	0.5	Test pit discontinued at 0.50m depth								0.5		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: NW

EXPORTED 04/04/23 19:00. TEMPLATE ID: DP_101.02.00_SOILLOG

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5 AHD
COORDINATE E:297416.4 **N:** 6256192.9
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 27
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (Cl) Silty CLAY; pale grey; medium plasticity; trace ironstone gravel, with gravel, trace surficial vegetation		FILL	VC	<PL		A		0.1 0.2		
	0.3 / 53	FILL/ (Cl) Silty CLAY; dark brown and mottled grey; medium plasticity; trace organic material, trace ironstone gravel		FILL	WC	=PL		A		0.4 0.5		
	0.6	FILL/ (Cl) Silty CLAY; dark brown and mottled grey; medium plasticity; trace gravel		FILL	WC	=PL		A B		0.9 1.0		
	1 / 1.1	FILL/ (CH) Silty CLAY; light brown, mottled grey; high plasticity; with ironstone gravel		FILL	PC	=PL		A		1.4 1.5		
	52 / 1.8	(CH) Silty CLAY; orange brown, mottled pale grey, red brown; high plasticity; with ironstone gravel, stiff		RES	ST	=PL						
	1.85 / 2	Test pit discontinued at 1.85m depth								2		
	51 / 3									3		
	50											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: NW

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
COORDINATE E:297450.4 **N:** 6256204.4
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 28
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0 / 53	FILL/ (CI) Silty CLAY; pale brown; medium plasticity; trace ironstone and siltstone gravel, trace surficial vegetation		FILL	WC	<PL		A		0.1 0.2		
	0.25 / 53	FILL/ (CI) Silty CLAY; dark brown, red brown; medium plasticity; trace ironstone, igneous and siltstone gravel		FILL	WC	<PL		A B		0.4 0.5		
	0.5	FILL/ (CH) Silty CLAY; pale grey, red brown and brown; high plasticity; trace ironstone and siltstone gravel		FILL	WC	=PL		A		0.9 1.0		
	1 / 52							A		1.4 1.5		
	1.6 / 1.65	(CH) Silty CLAY; pale grey, mottled red brown; high plasticity; with ironstone gravel, stiff to very stiff		RES	ST TO VST	=PL						
		Test pit discontinued at 1.65m depth										
	2 / 51									2		
	3 / 50									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: PJ

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE E:297487.6 **N:** 6256225.9
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 29
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; light brown; medium plasticity; trace ironstone gravel, trace surficial vegetation		FILL	VC	<PL	*	A B		0.1 0.2		
		0.4	(CH) Silty CLAY; light brown and orange; medium plasticity; stiff 0.7m: pale grey, mottled orange brown		RES	ST	=PL		A		0.4 0.5		
	52	0.8	Test pit discontinued at 0.80m depth										
		1									1		
	51	2									2		
	50	3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS: *PACM 4

OPERATOR: A&A Hire

LOGGED: PJ

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1 AHD
COORDINATE E:297491.4 **N:** 6256217.8
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 30
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (CI) Silty CLAY; light brown; medium plasticity; trace ironstone gravel, trace surficial vegetation		FILL	VC	<PL		A B		0.1 0.2		
	0.25	(CH) Silty CLAY; mottled light grey and light brown; high plasticity; trace ironstone gravel, very stiff		RES	VST	=PL		A		0.3 0.4		
	0.45	Test pit discontinued at 0.45m depth										
	52 / 1									1		
	51 / 2									2		
	50 / 3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: NW

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE E:297446.7 **N:** 6256231.2
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 31
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (CI) Silty CLAY; pale brown, red brown and brown; medium plasticity; trace ironstone and siltstone gravel, trace surficial vegetation		FILL	WC	<PL		A B		0.1 0.2		
	0.25	(CH) Silty CLAY; brown mottled grey; high plasticity; trace ironstone gravel, stiff		RES	ST	=PL		A		0.4 0.5		
	0.6	Test pit discontinued at 0.60m depth										
	52 / 1									1		
	51 / 2									2		
	50 / 3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: PJ

EXPORTED 04/04/23 19:01. TEMPLATE ID: DP_101.02.00_SOILLOG

Douglas Partners
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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4 AHD
COORDINATE E:297467.1 **N:** 6256259.3
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 32
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (CI) Silty CLAY; pale brown, red brown, dark brown; medium plasticity; trace ironstone gravel, igneous gravel and timber, trace surficial vegetation		FILL	VC	<PL		A		0.1 0.2		
								A		0.4 0.5		
	1							A		0.9 1.0		
	52 / 1.2	FILL/ (CI) Silty SAND; dark brown; medium plasticity; with sand, trace rootlets, igneous gravel		FILL	WC	M		A		1.4 1.5		
	1.7	FILL/ (CH) Silty CLAY; red brown, brown, pale grey; high plasticity; trace ironstone and siltstone gravel		FILL	WC	=PL		A		1.9 2.0		
	2 / 2.1	FILL/ (CH) Sandy SILT; dark brown; high plasticity; fine sand, slight sulfuric odour, stiff		FILL	ST	=PL		A		2.1 2.2		
	2.2	Test pit discontinued at 2.20m depth										
	51											
	3									3		
	50											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: PJ

EXPORTED 04/04/23 19:01. TEMPLATE ID: DP_101.02.00_SOILLOG

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53 AHD
COORDINATE E:297509.6 **N:** 6256256.2
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 33
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED									SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		0.0	FILL/ (CI) Silty CLAY; pale brown; medium plasticity; trace ironstone gravel, trace gravel, trace surficial vegetation		FILL	VC	<PL		A		0.1 0.2		
		0.3	FILL/ (CH) Silty CLAY; brown, mottled pale orange; high plasticity		FILL	WC	<PL		A		0.4 0.5		
		0.7	FILL/ (CI-CH) Silty CLAY; brown, mottled grey; medium to high plasticity; trace organic matter		FILL	WC	<PL		A B		0.9 1.0		
	52	1											
		1.1	(CI-CH) Silty CLAY; grey, mottled orange; medium to high plasticity		RES	WC	<PL		A		1.2 1.3		
		1.4	Test pit discontinued at 1.40m depth										
	51	2									2		
	50	3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: AFH

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE E:297497.7 **N:** 6256243
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 33A
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (Cl) Silty CLAY; pale brown; medium plasticity; trace surficial vegetation		FILL	VC	<PL		A		0.1 – 0.2		
	0.3	FILL/ (Cl-CH) Silty CLAY; brown, mottled orange; medium to high plasticity		FILL	WC	<PL		A		0.4 – 0.5		
	0.7 / 52 / 1	FILL/ (Cl-CH) Silty CLAY; dark brown, mottled orange; medium to high plasticity; trace organic material		FILL	WC	<PL	*	A		0.9 – 1.0		
	1.8 / 51 / 2	(Cl-CH) Silty CLAY; dark brown, mottled grey, orange; medium to high plasticity; very stiff		RES	VST	<PL		A		1.9 – 1.95		
	2.0 / 50 / 3	Test pit discontinued at 2.00m depth								2 / 3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS: *PACM 5

OPERATOR: A&A Hire

LOGGED: AFH

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Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
COORDINATE E:297488.9 **N:** 6256266.4
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 34
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53 / 0.0	FILL/ (CI-CH) Silty CLAY; brown; medium to high plasticity; trace surficial vegetation		FILL	VC	<PL		A		0.1 – 0.2		
	0.2	FILL/ (CI-CH) Silty CLAY; brown, mottled grey; medium to high plasticity; trace concrete fragments		FILL	WC	<PL		A		0.4 – 0.5		
	0.7	FILL/ (CI-CH) Silty CLAY; mottled grey; medium to high plasticity; trace concrete fragments		FILL	WC	<PL		A B		0.9 – 1.0		
	52 / 1.2	(CI-CH) Silty CLAY; orange, mottled grey; medium to high plasticity; very stiff		RES	VST	<PL		A		1.3 – 1.4		
	1.5	Test pit discontinued at 1.50m depth										
	51 / 2									2		
	3									3		
	50											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: AFH

EXPORTED 04/04/23 19:01. TEMPLATE ID: DP_101.02.00_SOILLOG

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.2 AHD
COORDINATE E:297493.4 **N:** 6256293.9
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 35
PROJECT No: 207476.01
DATE: 09/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	53	0.0	FILL/ (CI) Silty CLAY; pale grey; medium plasticity; trace gravel, trace surficial vegetation		FILL	VC	<PL		A		0.1 0.2		
		0.3	FILL/ (CI-CH) Silty CLAY; pale grey; medium to high plasticity; with gravel		FILL	WC	<PL	*	A		0.4 0.5		
		0.7	FILL/ (CI-CH) Silty CLAY; pale brown, mottled grey; medium to high plasticity		FILL	WC	<PL		A B		0.9 1.0		
	52	1.1	(CI-CH) Silty CLAY; pale brown, mottled grey; medium to high plasticity; very stiff		RES	VST	<PL		A		1.4		
		1.5	Test pit discontinued at 1.50m depth								1.5		
	51	2									2		
	50	3									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS: *PACM 6

OPERATOR: A&A Hire
LOGGED: AFH

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.4 AHD
COORDINATE E:297386.1 **N:** 6256101
DATUM/GRID: MGA94 Zone 56

LOCATION ID: 36
PROJECT No: 207476.01
DATE: 10/03/23
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	54 / 0.0	FILL/ (Cl) Silty CLAY; pale brown; medium plasticity; trace ironstone gravel, trace surficial vegetation		FILL	VC	<PL		A		0.1		
	0.2	FILL/ (Cl-CH) Silty CLAY; pale grey, mottled orange; medium to high plasticity		FILL	WC	<PL		A		0.2 0.3		
	0.5	FILL/ (Cl) Silty CLAY; brown; medium plasticity		FILL	WC	<PL		A B		0.4 0.5		
	0.8	FILL/ (Cl-CH) Silty CLAY; pale grey, mottled orange; medium to high plasticity		FILL	WC	<PL		A		0.9 1.0		
	1 / 1.3 / 53	(Cl-CH) Silty CLAY; brown, trace ironstone gravel gravel; medium to high plasticity; trace ironstone gravel, stiff		RES	ST	<PL		A		1.5 1.6		
	1.7	Test pit discontinued at 1.70m depth										
	2 / 52									2		
	3 / 51									3		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: 3 Tonne Excavator
METHOD: 600mm bucket
REMARKS:

OPERATOR: A&A Hire
LOGGED: AFH

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.1 AHD
EASTING: 297360.7
NORTHING: 6256155.6

PIT No: 101
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
55	0	FILL/Silty Sandy CLAY: medium to high plasticity, dark brown to brown, trace igneous gravel, timber and rootlets, w<PL		E	0.0		PID <1 ppm		
					0.1				
				E	0.5		PID <1 ppm		
					0.6				
	0.7	FILL/Silty CLAY: high plasticity, dark grey to grey, trace igneous gravel, w~PL							
54	1			E	1.0		PID <1 ppm		1
					1.1				
				E	1.5		PID <1 ppm		
					1.6				
	1.8	Silty CLAY: medium to high plasticity, red-brown mottled grey, w~PL, residual							
53	2			E	2.0		PID <1 ppm		2
					2.1				
				E*	2.5		PID <1 ppm		
	2.6	Pit discontinued at 2.6m Target depth achieved			2.6				
52	3								3

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Replicate sample BD7/20230621 taken from 2.5-2.6m depth.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.0 AHD
EASTING: 297416.6
NORTHING: 6256211.6

PIT No: 102
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
54		FILL/Silty Sandy CLAY: medium to high plasticity, dark brown and brown, trace igneous gravel, timber, plastic fragments and rootlets, w~PL		E	0.0		PID <1 ppm		
					0.1				
				E	0.5		PID <1 ppm		
					0.6				
	0.9								
53	1	FILL/Silty CLAY: high plasticity, dark grey to grey, trace igneous gravel and rootlets, w~PL		E	1.0		PID <1 ppm		1
					1.1				
52	2			E	2.0		PID <1 ppm		2
					2.1				
51	3								3
				E	3.3		PID <1 ppm		
	3.4	Pit discontinued at 3.4m Extent of excavator reach			3.4				

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.6 AHD
EASTING: 297459.9
NORTHING: 6256272.2

PIT No: 103
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
53	0.0	FILL/Silty Sandy CLAY: medium to high plasticity, dark brown to brown, trace igneous gravel, timber, wire fragments and rootlets, w~PL		E	0.0–0.1		PID <1 ppm		
				E	0.5–0.6		PID <1 ppm		
	0.9	FILL/Silty CLAY: high plasticity, dark grey and grey, trace igneous gravel and rootlets, w~PL		E	1.0–1.1		PID <1 ppm		1
52	1								
	2			E	2.0–2.1		PID <1 ppm		2
51									
	3			E	3.0–3.1		PID <1 ppm		3
	3.3	Pit discontinued at 3.3m Extent of excavator reach							
50									

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
EASTING: 297492.3
NORTHING: 6256252

PIT No: 104
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
									5 10 15 20
		FILL/Silty CLAY: low to medium plasticity, pale brown to brown, with sand, trace igneous and ironstone gravel and rootlets, w<PL		E	0.0		PID <1 ppm		
	0.1				0.1				
53		FILL/Silty CLAY: medium to high plasticity, red-brown and brown, trace igneous and ironstone gravel, w<PL							
				E	0.5		PID <1 ppm		
					0.6				
	0.9								
	1	Silty CLAY: high plasticity, pale orange-brown mottled grey, w~PL, residual		E	1.0		PID <1 ppm		1
52					1.1				
				E*	1.4		PID <1 ppm		
					1.5				
	1.6	Pit discontinued at 1.6m Target depth achieved							
	2								2
51									
	3								3
50									

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Replicate sample BD5/20230621 taken from 1.4-1.5m depth.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.3 AHD
EASTING: 297437.7
NORTHING: 6256198.6

PIT No: 105
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
53	0.0	FILL/Silty CLAY: low to medium plasticity, pale brown and brown, with sand, trace igneous and ironstone gravel and rootlets, w<PL		E	0.0		PID <1 ppm		
					0.1				
	0.3	FILL/Silty CLAY: high plasticity, dark brown, brown and dark grey, trace ironstone gravel and plastic fragments, w~PL							
				E	0.5		PID <1 ppm		
					0.6				
	0.7	FILL/Silty Sandy CLAY: medium to high plasticity, dark brown and red-brown mottled pale grey, fine to medium sand, trace igneous and ironstone gravel, w~PL							
	1			E	1.0		PID <1 ppm		1
					1.1				
52	1.3	Silty CLAY: medium to high plasticity, pale grey mottled red-brown, with ironstone gravel, w~PL, residual		E	1.3		PID <1 ppm		
					1.4				
				E*	1.8		PID <1 ppm		
	1.9	Pit discontinued at 1.9m Target depth achieved			1.9				
	2								2
51									
	3								3
50									

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Replicate sample BD6/20230621 taken from 1.8-1.9m depth.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.4 AHD
EASTING: 297430.5
NORTHING: 6256164.9

PIT No: 106
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
53	0.0	FILL/Silty CLAY: low to medium plasticity, pale brown and brown, with sand, trace igneous gravel, timber and rootlets, w<PL		E	0.0		PID <1 ppm		
					0.1				
	0.2	FILL/Silty CLAY: medium to high plasticity,dark brown, red-brown and pale grey, trace igneous and ironstone, w~PL							
				E	0.5		PID <1 ppm		
					0.6				
	1								1
				E	1.0		PID <1 ppm		
					1.1				
52	1.2	FILL/Silty CLAY: medium to high plasticity, pale grey mottled orange-brown and red-brown, trace ironstone gravel, w<PL							
	2			E	2.0		PID <1 ppm		2
					2.1				
51	2.3	Silty CLAY: medium to high plasticity, red-brown mottled pale grey and pale brown, trace igneous and ironstone gravel, w~PL, residual							
				E	2.9		PID <1 ppm		
	3								3
50	3.0	Pit discontinued at 3.0m Target depth achieved			3.0				

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.5 AHD
EASTING: 297395.6
NORTHING: 6256052.8

PIT No: 107
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
									5 10 15 20
		FILL/Silty CLAY: low to medium plasticity, pale brown and brown, with sand, trace igneous and ironstone gravel and rootlets, w<PL		E	0.0 0.1		PID <1 ppm		
	0.2	FILL/Silty CLAY: medium to high plasticity, brown and red-brown, trace ironstone gravel, w<PL		E	0.5 0.6		PID <1 ppm		
54	1			E	1.0 1.1		PID <1 ppm		1
53		Below 1.5m: red-brown mottled pale grey and dark brown							
	1.9	FILL/Silty SAND: fine to medium, dark grey to grey, trace rootlets and roots, moist, possibly buried (former) topsoil layer		E	2.0		PID <1 ppm		2
	2.1	Silty CLAY: medium to high plasticity, red-brown, trace ironstone gravel, w~PL, residual		E	2.1 2.2 2.3		PID <1 ppm		
52				E*	2.5		PID <1 ppm		
	2.6	Pit discontinued at 2.6m Target depth achieved			2.6				3
51	3								

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Replicate sample BD4/20230621 taken from 2.5-2.6m depth.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 55.1 AHD
EASTING: 297407.8
NORTHING: 6255979

PIT No: 108
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
55	0	FILL/Silty CLAY: medium to high plasticity, brown, pale brown and red-brown, with sand, trace sandstone, igneous and ironstone gravel and rootlets, w<PL		E	0.0		PID <1 ppm		
					0.1				
	0.3	FILL/Silty CLAY: medium to high plasticity, red-brown and brown and pale grey, trace igneous and ironstone gravel, w<PL		E	0.5		PID <1 ppm		
					0.6				
		Below 0.8m: pale grey mottled red-brown							
54	1			E	1.0		PID <1 ppm		1
					1.1				
				E	1.4		PID <1 ppm		
	1.5	Silty CLAY: medium to high plasticity, red-brown, trace ironstone gravel, w~PL, residual		E	1.5		PID <1 ppm		
					1.6				
	2			E*	2.0		PID <1 ppm		2
53	2.1	Pit discontinued at 2.1m Target depth achieved			2.1				
52	3								3

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Replicate sample BD1/20230621 taken from 2.0-2.1m depth.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 54.6 AHD
EASTING: 297468.4
NORTHING: 6255990.3

PIT No: 109
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
54	0.0	FILL/Silty CLAY: low to medium plasticity, pale brown with brown, with sand, trace igneous and ironstone gravel, plastic fragments and rootlets, w<PL		E	0.0		PID <1 ppm		
					0.1				
	0.3	FILL/Silty CLAY: medium to high plasticity, red-brown, pale brown and dark brown, with sand, trace timber, igneous and ironstone gravel, apparently firm to stiff, w~PL		E	0.5		PID <1 ppm		
					0.6				
		Below 0.9m: dark brown and red-brown mottled pale grey							
53	1			E	1.0		PID <1 ppm		1
					1.1				
				E	1.5		PID <1 ppm		
					1.6				
52	2			E	2.0		PID <1 ppm		2
					2.1				
	2.6	FILL/Silty SAND: fine to medium, pale grey to grey, trace ironstone gravel and rootlets, moist, possibly buried (former) topsoil layer		E	2.9		PID <1 ppm		
51	3 3.0	Pit discontinued at 3.0m Extent of excavator reach			3.0				3

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.6 AHD
EASTING: 297479.9
NORTHING: 6256087.8

PIT No: 110
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
53	0.15	FILL/Silty CLAY: medium to high plasticity, brown and red-brown, with sand, trace sandstone, igneous and ironstone gravel and rootlets, w<PL		E	0.0 0.1		PID <1 ppm		
		FILL/Silty CLAY: medium to high plasticity, red-brown and brown, trace igneous and ironstone gravel, wire, timber, plastic fragments and rootlets, w<PL		E	0.5 0.6		PID <1 ppm		
		Below 0.6m: no anthropogenic inclusions							
52	1			E	1.0 1.1		PID <1 ppm		1
		Below 1.9m: with pale brown sand							
	2			E	2.0 2.1		PID <1 ppm		2
51		Below 2.6m: pale grey mottled orange-brown and dark brown							
				E*	2.9		PID <1 ppm		
	3 3.0	Pit discontinued at 3.0m Extent of excavator reach			3.0				3
50									

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Replicate sample BD3/20230621 taken from 2.9-3.0m depth.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.0 AHD
EASTING: 297520.6
NORTHING: 6256153.6

PIT No: 111
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
53	0.15	FILL/Silty CLAY: medium to high plasticity, pale brown and brown, with sand, trace igneous and ironstone gravel and rootlets, w<PL		E	0.0		PID <1 ppm		
					0.1				
		FILL/Silty CLAY: medium to high plasticity, red-brown and pale grey, trace igneous and ironstone gravel, w<PL		E	0.5		PID <1 ppm		
					0.6				
52	1			E	1.0		PID <1 ppm		1
					1.1				
	1.6	FILL/Silty SAND: fine to medium, grey, trace rootlets and roots, moist, possibly buried (former) topsoil layer		E	1.6		PID <1 ppm		
					1.7				
	1.8	Silty CLAY: medium to high plasticity, red-brown, trace ironstone gravel, w~PL, residual							
51	2			E	2.0		PID <1 ppm		2
					2.1				
				E	2.4		PID <1 ppm		
	2.5	Pit discontinued at 2.5m Target depth achieved			2.5				
50	3								3

5 10 15 20

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.5 AHD
EASTING: 297557
NORTHING: 6256046.4

PIT No: 112
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
									5 10 15 20
		FILL/Silty CLAY: low to medium plasticity, pale brown and red-brown, with sand, trace sandstone, igneous and ironstone gravel and rootlets, w<PL		E	0.0		PID <1 ppm		
					0.1				
	0.3	FILL/Silty CLAY: medium to high plasticity, pale grey, brown and red-brown, trace ironstone gravel, wire and rootlets, w~PL							
53				E	0.5		PID <1 ppm		
					0.6				
	1			E	1.0		PID <1 ppm		1
					1.1				
52									
	1.7	FILL/Silty SAND: fine to medium, grey, trace ironstone gravel and rootlets, moist, possibly buried (former) topsoil layer		E	1.8		PID <1 ppm		
	1.9	Silty CLAY: medium to high plasticity, red-brown, with ironstone gravel, w~PL, residual			1.9				
	2			E	2.0		PID <1 ppm		2
					2.1				
				E*	2.4		PID <1 ppm		
51	2.5	Pit discontinued at 2.5m Target depth achieved			2.5				
	3								3
50									

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Replicate sample BD2/20230621 taken from 2.4-2.5m depth.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT:
PROJECT:
LOCATION: 78 Lockwood Road, Erskine Park

SURFACE LEVEL: 53.1 AHD
EASTING: 297596
NORTHING: 6256125.9

PIT No: 113
PROJECT No: 207476.02
DATE: 21/6/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
53	0.15	FILL/Silty CLAY: low to medium plasticity, brown and red-brown, with sand, trace igneous and ironstone gravel, PVC pipe fragments and rootlets, w<PL		E	0.0		PID <1 ppm		
					0.1				
		FILL/Silty CLAY: medium to high plasticity, red-brown, brown and pale grey, with sand, trace igneous and ironstone gravel and rootlets, apparently firm to stiff, w<PL							
		Below 0.3m: no rootlets		E	0.5		PID <1 ppm		
					0.6				
52	1			E	1.0		PID <1 ppm		1
					1.1				
		Below 1.5m: red-brown and brown							
51	2			E	2.0		PID <1 ppm		2
					2.1				
	2.7	FILL/Silty SAND: fine to medium, grey, trace igneous gravel, roots and rootlets, moist, possibly buried (former) topsoil layer		E	2.7		PID <1 ppm		
					2.8				
	2.9	Silty CLAY: medium to high plasticity, red-brown and brown, trace ironstone gravel, w~PL, residual		E	2.9		PID <1 ppm		
50	3 3.0	Pit discontinued at 3.0m Extent of excavator reach			3.0				3

RIG: 4 tonne excavator with 450mm toothed bucket

LOGGED: PJ

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Material Test Report

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Douglas Partners Pty Ltd
Sydney Laboratory
96 Hermitage Road West Ryde NSW 2114
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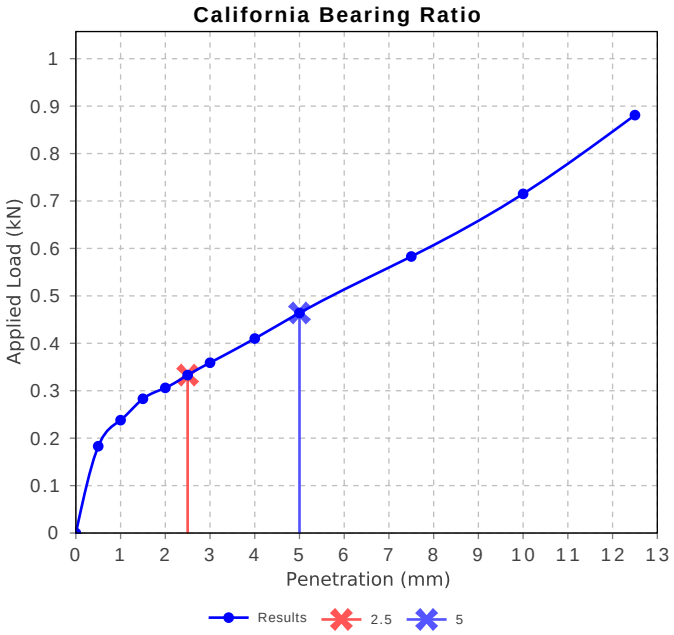
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Approved Signatory: Mick Gref
Senior Technician
Laboratory Accreditation Number: 828

Report Number: **207476.00-1**
Issue Number: 1
Date Issued: 15/11/2021
Client:

Contact:
Project Number: 207476.00
Project Name:
Project Location: 68-124 Lockwood Road, Erskine Park NSW
Work Request: 8411
Sample Number: SY-8411A
Date Sampled: 19/10/2021
Dates Tested: 21/10/2021 - 10/11/2021
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Sample Location: **31 (0.3 - 0.4m)**
Material: Silty CLAY: pale grey mottled orange, trace rootlets, with ironstone gravel

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**2.5**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.70		
Optimum Moisture Content (%)	17.5		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m^3)	1.65		
Field Moisture Content (%)	22.1		
Moisture Content at Placement (%)	17.7		
Moisture Content Top 30mm (%)	24.6		
Moisture Content Rest of Sample (%)	19.1		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	189.4		
Swell (%)	3.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		



Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	71		
Plastic Limit (%)	19		
Plasticity Index (%)	**52**		

Emerson Class Number of a Soil (AS 1289 3.8.1)		Min	Max
Emerson Class	**2**		
Soil Description	Silty CLAY; pale grey mottled orange		
Nature of Water	Distilled		
Temperature of Water (^{o}C)	20		

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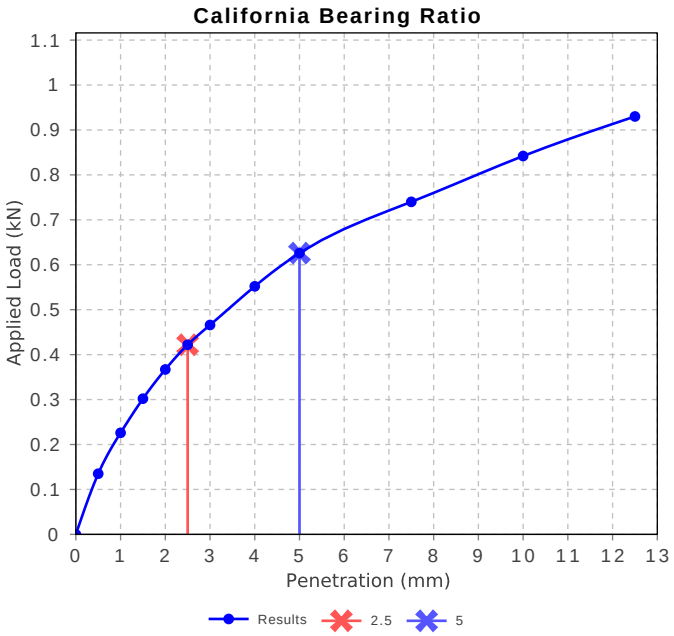
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Senior Technician
Laboratory Accreditation Number: 828

Report Number: **207476.00-1**
Issue Number: 1
Date Issued: 15/11/2021
Client:

Contact:
Project Number: 207476.00
Project Name:
Project Location: 68-124 Lockwood Road, Erskine Park NSW
Work Request: 8411
Sample Number: SY-8411B
Date Sampled: 19/10/2021
Dates Tested: 21/10/2021 - 10/11/2021
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Sample Location: **32 (0.5 - 0.6m)**
Material: FILL/Silty CLAY: orange brown mottled yellow and red, with vegetation, with siltstone and sandstone gravel, with sandstone boulder and cobbles

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**3.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.79		
Optimum Moisture Content (%)	18.0		
Laboratory Density Ratio (%)	99.5		
Laboratory Moisture Ratio (%)	102.5		
Dry Density after Soaking (t/m^3)	1.75		
Field Moisture Content (%)	20.9		
Moisture Content at Placement (%)	18.7		
Moisture Content Top 30mm (%)	23.5		
Moisture Content Rest of Sample (%)	19.6		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	189.0		
Swell (%)	2.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	4.1		



Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	42		
Plastic Limit (%)	16		
Plasticity Index (%)	**26**		

Emerson Class Number of a Soil (AS 1289 3.8.1)		Min	Max
Emerson Class	**2**		
Soil Description	Silty CLAY; orange brown mottled yellow		
Nature of Water	Distilled		
Temperature of Water (^{o}C)	20		

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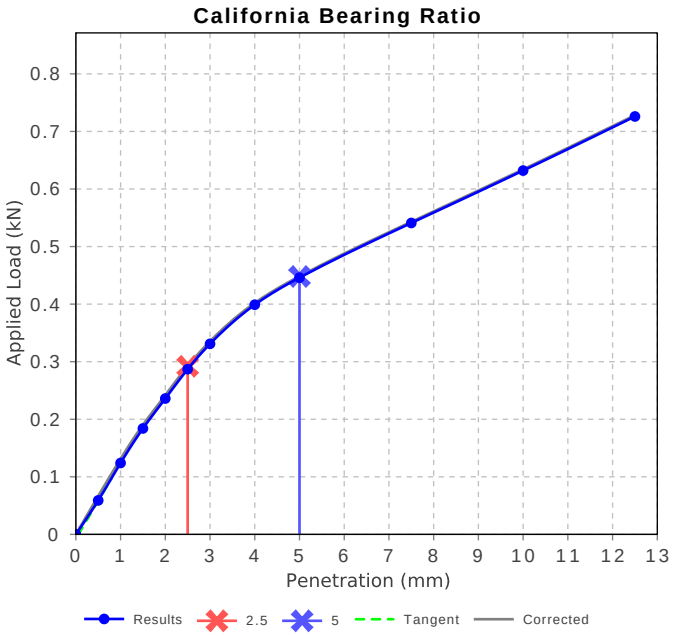
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Senior Technician
Laboratory Accreditation Number: 828

Report Number: **207476.00-1**
Issue Number: 1
Date Issued: 15/11/2021
Client:

Contact:
Project Number: 207476.00
Project Name: Lockwood Road Data Centre
Project Location: 68-124 Lockwood Road, Erskine Park NSW
Work Request: 8411
Sample Number: SY-8411C
Date Sampled: 19/10/2021
Dates Tested: 21/10/2021 - 10/11/2021
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Sample Location: **35 (0.5 - 0.6m)**
Material: FILL/Silty CLAY: orange brown, with vegetation, with siltstone and sandstone gravel and cobbles, with ironstone gravel

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	**2.5**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.77		
Optimum Moisture Content (%)	16.5		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m^3)	1.72		
Field Moisture Content (%)	15.1		
Moisture Content at Placement (%)	16.5		
Moisture Content Top 30mm (%)	21.4		
Moisture Content Rest of Sample (%)	18.5		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	336.0		
Swell (%)	3.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	14.6		



Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	40		
Plastic Limit (%)	15		
Plasticity Index (%)	**25**		

Emerson Class Number of a Soil (AS 1289 3.8.1)		Min	Max
Emerson Class	**2**		
Soil Description	Silty CLAY; orange brown		
Nature of Water	Distilled		
Temperature of Water (^{o}C)	20		

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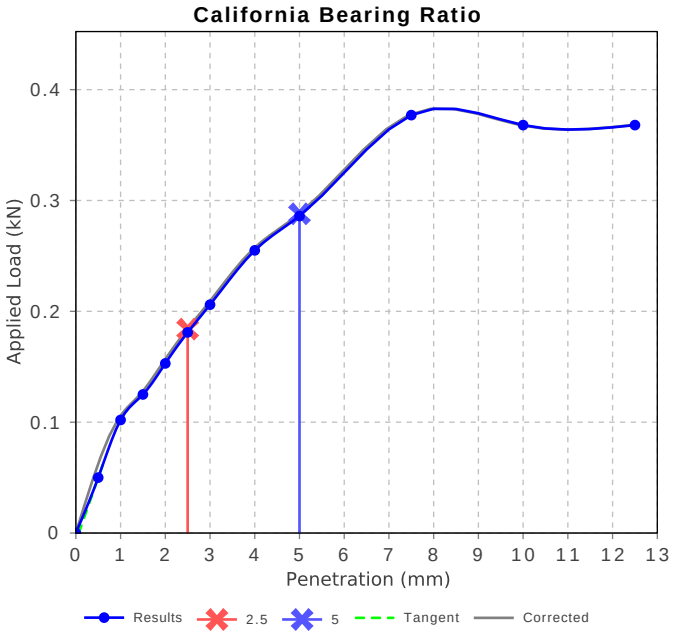
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Issue Number: 1
Date Issued: 15/11/2021
Client:

Contact:
Project Number: 207476.00
Project Name:
Project Location: 68-124 Lockwood Road, Erskine Park NSW
Work Request: 8411
Sample Number: SY-8411D
Date Sampled: 19/10/2021
Dates Tested: 21/10/2021 - 10/11/2021
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Sample Location: **36 (0.5 - 0.6m)**
Material: FILL/Silty CLAY: dark brown, with rootlets, with siltstone gravel

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	**1.5**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.75		
Optimum Moisture Content (%)	15.5		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	99.0		
Dry Density after Soaking (t/m^3)	1.65		
Field Moisture Content (%)	15.9		
Moisture Content at Placement (%)	15.6		
Moisture Content Top 30mm (%)	24.9		
Moisture Content Rest of Sample (%)	22.1		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	261.5		
Swell (%)	6.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	3.7		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	47		
Plastic Limit (%)	17		
Plasticity Index (%)	**30**		

Emerson Class Number of a Soil (AS 1289 3.8.1)		Min	Max
Emerson Class	**2**		
Soil Description	Silty CLAY; dark brown		
Nature of Water	Distilled		
Temperature of Water (^{o}C)	20		



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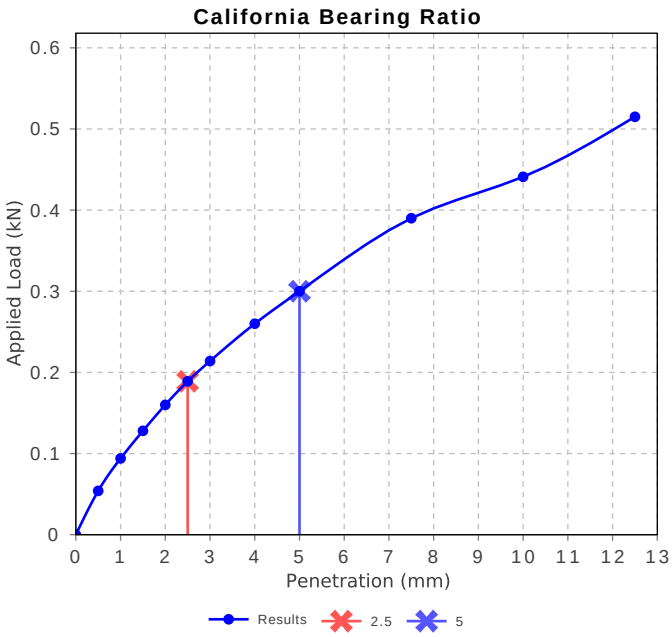
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Issue Number: 1
Date Issued: 15/11/2021
Client:

Contact:
Project Number: 207476.00
Project Name:
Project Location: 68-124 Lockwood Road, Erskine Park NSW
Work Request: 8411
Sample Number: SY-8411E
Date Sampled: 19/10/2021
Dates Tested: 21/10/2021 - 10/11/2021
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Sample Location: **38 (0.5 - 0.6m)**
Material: Silty CLAY: pale grey mottled orange, with ironstone gravel

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Senior Technician
Laboratory Accreditation Number: 828

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	**1.5**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.67		
Optimum Moisture Content (%)	21.5		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	98.5		
Dry Density after Soaking (t/m^3)	1.62		
Field Moisture Content (%)	22.8		
Moisture Content at Placement (%)	21.1		
Moisture Content Top 30mm (%)	28.5		
Moisture Content Rest of Sample (%)	21.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	93.7		
Swell (%)	4.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		



Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	74		
Plastic Limit (%)	22		
Plasticity Index (%)	**52**		

Emerson Class Number of a Soil (AS 1289 3.8.1)		Min	Max
Emerson Class	**2**		
Soil Description	Silty CLAY; pale grey mottled orange		
Nature of Water	Distilled		
Temperature of Water (^{o}C)	20		

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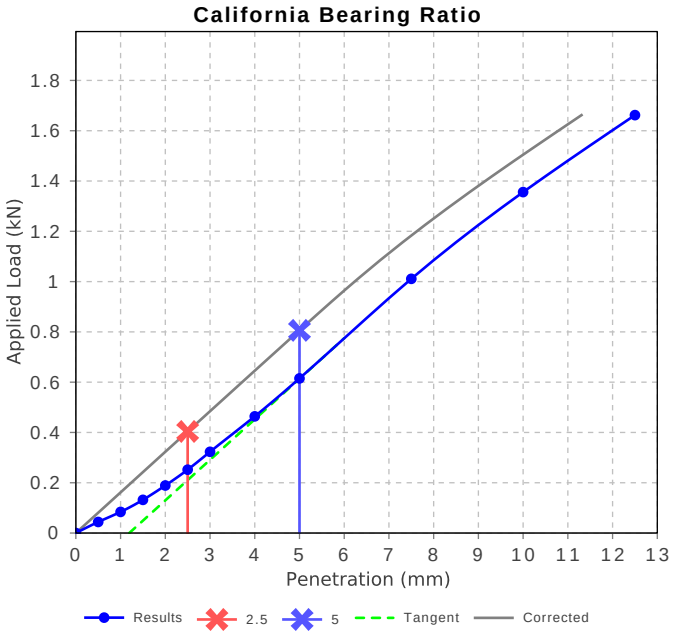
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Issue Number: 1
Date Issued: 15/11/2021
Client:

Contact:
Project Number: 207476.00
Project Name:
Project Location: 68-124 Lockwood Road, Erskine Park NSW
Work Request: 8411
Sample Number: SY-8411F
Date Sampled: 19/10/2021
Dates Tested: 21/10/2021 - 10/11/2021
Sampling Method: Sampled by Engineering Department
The results apply to the sample as received
Sample Location: **40 (0.5 - 0.6m)**
Material: FILL/Silty CLAY: brown, with rootlets, with siltstone and sandstone gravel, with sandstone cobbles and boulders

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	**4.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual Assessment		
Maximum Dry Density (t/m^3)	1.85		
Optimum Moisture Content (%)	15.5		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	97.5		
Dry Density after Soaking (t/m^3)	1.85		
Field Moisture Content (%)	13.7		
Moisture Content at Placement (%)	15.1		
Moisture Content Top 30mm (%)	15.0		
Moisture Content Rest of Sample (%)	14.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	97.0		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	10.1		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	29		
Plastic Limit (%)	16		
Plasticity Index (%)	**13**		

Emerson Class Number of a Soil (AS 1289 3.8.1)		Min	Max
Emerson Class	**2**		
Soil Description	Silty CLAY: brown		
Nature of Water	Distilled		
Temperature of Water (^{o}C)	20		



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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 280966

Client Details

Client	Douglas Partners Pty Ltd (Riverstone)
Attention	Gavin Boyd
Address	43 Hobart St, Riverstone, NSW, 2765

Sample Details

Your Reference	**207476.00, Erksing Park**
Number of Samples	8 Soil
Date samples received	22/10/2021
Date completed instructions received	22/10/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	29/10/2021
Date of Issue	28/10/2021

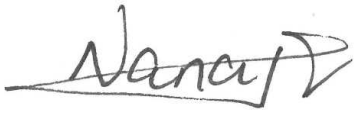
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Asbestos Approved By
Analysed by Asbestos Approved Analyst:
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Nick Sarlamis, Assistant Operation Manager
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Misc Inorg - Soil						
Our Reference		280966-1	280966-2	280966-3	280966-4	280966-5
Your Reference	UNITS	2	2	4	4	11
Depth		0.1-0.2	2.5-2.95	0.4-0.5	7.07.23	0.1-0.2
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Date analysed	-	26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
pH 1:5 soil:water	pH Units	5.5	5.6	5.2	7.7	6.9
Chloride, Cl 1:5 soil:water	mg/kg	590	92	790	230	570
Sulphate, SO4 1:5 soil:water	mg/kg	150	10	230	54	240

Misc Inorg - Soil				
Our Reference		280966-6	280966-7	280966-8
Your Reference	UNITS	11	13	13
Depth		4.0-4.45	0.4-0.5	7.0-7.41
Date Sampled		15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	26/10/2021	26/10/2021	26/10/2021
Date analysed	-	26/10/2021	26/10/2021	26/10/2021
pH 1:5 soil:water	pH Units	7.5	5.5	7.9
Chloride, Cl 1:5 soil:water	mg/kg	520	480	790
Sulphate, SO4 1:5 soil:water	mg/kg	60	290	120

Texture and Salinity*						
Our Reference		280966-1	280966-2	280966-3	280966-4	280966-5
Your Reference	UNITS	2	2	4	4	11
Depth		0.1-0.2	2.5-2.95	0.4-0.5	7.07.23	0.1-0.2
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Electrical Conductivity 1:5 soil:water	µS/cm	460	72	650	190	500
Texture Value	-	8.0	7.0	7.0	7.0	8.0
Texture	-	LIGHT MEDIUM CLAY	MEDIUM CLAY	MEDIUM CLAY	MEDIUM CLAY	LIGHT MEDIUM CLAY
ECe	dS/m	3.7	<2	4.6	<2	4.0
Class	-	SLIGHTLY SALINE	NON SALINE	MODERATELY SALINE	NON SALINE	MODERATELY SALINE

Texture and Salinity*				
Our Reference		280966-6	280966-7	280966-8
Your Reference	UNITS	11	13	13
Depth		4.0-4.45	0.4-0.5	7.0-7.41
Date Sampled		15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	25/10/2021	25/10/2021	25/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021
Electrical Conductivity 1:5 soil:water	µS/cm	380	460	570
Texture Value	-	9.0	7.0	8.0
Texture	-	CLAY LOAM	MEDIUM CLAY	LIGHT MEDIUM CLAY
ECe	dS/m	3.4	3.2	4.5
Class	-	SLIGHTLY SALINE	SLIGHTLY SALINE	MODERATELY SALINE

Method ID	Methodology Summary
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Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
INORG-123	Determined using a "Texture by Feel" method.

QUALITY CONTROL: Misc Inorg - Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			26/10/2021	[NT]	[NT]	[NT]	[NT]	26/10/2021	[NT]
Date analysed	-			26/10/2021	[NT]	[NT]	[NT]	[NT]	26/10/2021	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: Texture and Salinity*					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			26/10/2021	[NT]	[NT]	[NT]	[NT]	26/10/2021	[NT]
Date analysed	-			26/10/2021	[NT]	[NT]	[NT]	[NT]	26/10/2021	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

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Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

pH/EC:
Samples were out of the recommended holding time for this analysis.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	207476.00	**Suburb:**	Erksine Park	**To:**	*Envirolab Services*
Project Manager:	Gavin Boyd	**Order Number:**		**Sampler:** Koray Adali	*12 Ashley Street, Chatswood, NSW 2067*
Email:	gavin.boyd@douglaspartners.com.au kristine.nicodemus@douglaspartners.com.au			**Attn:**	*Aileen Hie*
Turnaround time:	☑ Standard ☐ 72 hour ☐ 48 hour ☐ 24 hour ☐ Same day			**Contact:**	*02 9910 6200 Ahie@envirolab.com.au*
Prior Storage:	☐ Fridge ☐ Freezer ☑ Shelf	**Do samples contain 'potential' HBM?**	☐ No ☐ Yes (If YES, then handle, transport and store in accordance with FPM HAZID)		

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: pH, eCe	Chlorides	Sulphates								Notes/ Preservation/ Additional Requirements
1	2	0.1	0.2	15/10/21	S	P	●	●	●								
2	2	2.5	2.95	15/10/21	S	P	●	●	●								
3	4	0.4	0.5	15/10/21	S	P	●	●	●								
4	4	7.0	7.23	15/10/21	S	P	●	●	●								
5	11	0.1	0.2	15/10/21	S	P	●	●	●								
6	11	4.0	4.45	15/10/21	S	P	●	●	●								
7	13	0.4	0.5	15/10/21	S	P	●	●	●								
8	13	7.0	7.41	15/10/21	S	P	●	●	●								

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 280966
Date Received: 22/10/21
Time Received: 12:50
Received By:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Metals to analyse:

Number of samples in container:		**Transported to laboratory by:**			
Send results to:	Douglas Partners Pty Ltd				
Address:	43 Hobart St, Riverstone NSW 2765	**Phone:**	(02) 4666 0450		
Relinquished by:	Koray Adali	**Date:**	20/10/2021	**Signed:**	

LAB RECEIPT

Lab Ref. No:	280966
Received by:	Nahoy Zhang
Date & Time:	22/10/21 12:50
Signed:	

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 280966

Client Details

Client	Douglas Partners Pty Ltd (Riverstone)
Attention	Gavin Boyd
Address	43 Hobart St, Riverstone, NSW, 2765

Sample Details

Your Reference	**207476.00, Erskine Park**
Number of Samples	8 Soil
Date samples received	22/10/2021
Date completed instructions received	22/10/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	29/10/2021
Date of Issue	29/11/2021
Reissue Details	This report replaces R00 due to an amendment to project name and sample depth (ELS #4)

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By
Analysed by Asbestos Approved Analyst:
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Nick Sarlamis, Assistant Operation Manager
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Misc Inorg - Soil						
Our Reference		280966-1	280966-2	280966-3	280966-4	280966-5
Your Reference	UNITS	2	2	4	4	11
Depth		0.1-0.2	2.5-2.95	0.4-0.5	7.0-7.23	0.1-0.2
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Date analysed	-	26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
pH 1:5 soil:water	pH Units	5.5	5.6	5.2	7.7	6.9
Chloride, Cl 1:5 soil:water	mg/kg	590	92	790	230	570
Sulphate, SO4 1:5 soil:water	mg/kg	150	10	230	54	240

Misc Inorg - Soil				
Our Reference		280966-6	280966-7	280966-8
Your Reference	UNITS	11	13	13
Depth		4.0-4.45	0.4-0.5	7.0-7.41
Date Sampled		15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	26/10/2021	26/10/2021	26/10/2021
Date analysed	-	26/10/2021	26/10/2021	26/10/2021
pH 1:5 soil:water	pH Units	7.5	5.5	7.9
Chloride, Cl 1:5 soil:water	mg/kg	520	480	790
Sulphate, SO4 1:5 soil:water	mg/kg	60	290	120

Texture and Salinity*						
Our Reference		280966-1	280966-2	280966-3	280966-4	280966-5
Your Reference	UNITS	2	2	4	4	11
Depth		0.1-0.2	2.5-2.95	0.4-0.5	7.0-7.23	0.1-0.2
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Electrical Conductivity 1:5 soil:water	µS/cm	460	72	650	190	500
Texture Value	-	8.0	7.0	7.0	7.0	8.0
Texture	-	LIGHT MEDIUM CLAY	MEDIUM CLAY	MEDIUM CLAY	MEDIUM CLAY	LIGHT MEDIUM CLAY
ECe	dS/m	3.7	<2	4.6	<2	4.0
Class	-	SLIGHTLY SALINE	NON SALINE	MODERATELY SALINE	NON SALINE	MODERATELY SALINE

Texture and Salinity*				
Our Reference		280966-6	280966-7	280966-8
Your Reference	UNITS	11	13	13
Depth		4.0-4.45	0.4-0.5	7.0-7.41
Date Sampled		15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	25/10/2021	25/10/2021	25/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021
Electrical Conductivity 1:5 soil:water	µS/cm	380	460	570
Texture Value	-	9.0	7.0	8.0
Texture	-	CLAY LOAM	MEDIUM CLAY	LIGHT MEDIUM CLAY
ECe	dS/m	3.4	3.2	4.5
Class	-	SLIGHTLY SALINE	SLIGHTLY SALINE	MODERATELY SALINE

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
INORG-123	Determined using a "Texture by Feel" method.

QUALITY CONTROL: Misc Inorg - Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			26/10/2021	[NT]	[NT]	[NT]	[NT]	26/10/2021	[NT]
Date analysed	-			26/10/2021	[NT]	[NT]	[NT]	[NT]	26/10/2021	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
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QUALITY CONTROL: Texture and Salinity*					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			26/10/2021	[NT]	[NT]	[NT]	[NT]	26/10/2021	[NT]
Date analysed	-			26/10/2021	[NT]	[NT]	[NT]	[NT]	26/10/2021	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]

Result Definitions

NT	Not tested
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INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

pH/EC:
Samples were out of the recommended holding time for this analysis.