Supplementary Geotechnical Investigation Report

New High School for Medowie

6 Abundance Road, Medowie NSW 2318

Prepared for: Department of Education

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For and on behalf of
ADE Consulting Group Pty Ltd

Prepared by:

-

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Antony Tam
State Manager - Geotechnical Discipline

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1 Introduction

1.1 General Information

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments by the Department of Planning, Housing and Infrastructure (formerly the Department of Planning and Environment), June 2022). This can be accessed here: Development without consent | Planning (nsw.gov.au).

The Department of Education (DoE) commissioned ADE Consulting Group (ADE) to provide an supplementary Intrusive Geotechnical Investigation (IGI) report in relation to the proposed New High School for Medowie located at 6 Abundance Road, Medowie. The proposed school is located at 6 Abundance Road, Medowie NSW 2318. A Site Plan showing the proposed building footprint and borehole locations is presented in **Appendix I.**

This Supplementary Geotechnical Investigation Report has been prepared to support a Review of Environmental Factors (REF) for the proposed New High School for Medowie (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.
The activity will be carried out at 6 Abundance Street, Medowie (the site).

ADE previously prepared a Preliminary Geotechnical Desktop Study (PGDS) report (Reference no. A201024.0124.00_A_v1f), dated 8 May 2024, and a IGI report (Reference no. A201024.0124.00_A_v1d), dated 7th June 2024 for the proposed school infrastructure activity.

This second round of IGI was carried out on 19th to 22nd and 25th to 27th of November 2024 and consisted of drilling five (5) deep boreholes. The purpose of this report is to assess geotechnical conditions, particularly the existing bedrock levels, within the proposed activity area and provide comments and recommendations on the geotechnical parameters to assist in the slab, footing and pile design of the proposed school building foundation's purpose only.

The report includes the inferred excavation conditions and methodology, groundwater, geotechnical design parameters for the potential foundation system, retaining walls design parameters, on-grade floor slabs, and other geotechnical issues associated with the proposed activity.

1.2 REF Checklist

Table 1 and Table 2 below summarise all relevant REF checklist items addressed in this supplementary IGI Report and provide section references for review.

Table 1: REF Review Checklist – General Requirements

Requirement	Y	N	N/A	Comments & Report Reference
General requirements				
Regulatory requirements • Does the **IGI** include details of: ○ the proposed activity?	☒	☐	☒	Refer Section 1 'Introduction' of this IGI Report
○ need for the activity?	☒	☐	☐	
○ relevant planning policies, including relevant indicative layout plans, masterplans, strategic plans or Voluntary Planning Agreements apply to the site?	☒	☐	☐	
○ how proposal relates to relevant legislation and policies?	☒	☐	☐	
○ related approvals required?	☒	☐	☐	
○ relevant determining authority (i.e. the NSW Department of Education)	☒	☐	☐	
• a description of the site (including address and lot/DP) and surrounding environment using text and plans/photos including details the environmental features and planning constraints?	☒	☐	☐	Refer Section 2.1 'Site Description' of this IGI Report
• an assessment of potential impacts of the proposal?	☒	☐	☐	Refer Section 5.4 'Cumulative Impact Assessment' in this IGI Report
• a statement certifying that the contents are true and correct?	☒	☐	☐	Refer Section 7 'Limitations' of this IGI Report 'This report does not provide a complete assessment of the geotechnical status of the site, and it is limited to the scope defined herein"
• a statement that the proposed activity qualifies as development without consent?	☒	☐	☐	Refer Section 1 'Introduction' of this IGI Report
• a schedule of mitigation measures that are specific and deliverable?	☒	☐	☐	Refer Section 5.5 'Mitigation Measures' of this IGI Report

Table 2: REF Review Checklist – Soil and Water

Requirement	Y	N	N/A	Comments & Report Reference
Soil and Water				
If the site is mapped as, or has otherwise been identified, as having salinity potential, does the geotechnical report consider impacts from salinity and set out measures to mitigate impacts (i.e. Salinity Management Plan) so that they would not be significant?	☐	☐	☒	Refer ADE's previous Detailed Site Investigation Report 'A101024.0124 Medowie DSI v3' dated 22 January 2025. "The site is mapped as being in a non-saline area according to the NSW Office of Water."
If the site is mapped as, or has otherwise been identified as having acid sulfate soils (ASS) potential, does the geotechnical report consider impacts from ASS and set out measures to mitigate impacts (i.e. ASS Management Plan) so that they would not be significant?	☐	☐	☒	Refer ADE's previous Detailed Site Investigation Report 'A101024.0124 Medowie DSI v3' dated 22 January 2025. The report concluded that based on observations of soil texture and type, site conditions and results from field screening tests, that Actual Acid Sulfate Soils (AASS) and Potential Acid Sulfate Soils (PASS) are not considered likely at the site.

1.3 Scope of Work

In summary, this IGI work generally comprised the following:

- Preparation and approval of a Safety, Health, Environment, and Safe Work Method Statement (SHEWMS) prior to undertaking works
- Prior to commencing the fieldwork, underground services were electromagnetically scanned and identified by an accredited service locator.
- In total, five (5) boreholes identified as BH202, BH203, BH205, BH206 and BH208 were drilled within the proposed activity area. Boreholes were drilled using a solid flight auger to about 10m to 15m before wash boring was used. Locations of the boreholes are presented in **Appendix I** of this report.
- Coring was undertaken from depths of approximately 45m using a HQ size core barrel.
- Standard Penetration Test (SPT) were carried out within the boreholes with the first SPT test completed at 1m with additional SPTs completed at 1.5-meter intervals.
- ADE's geotechnical engineer was present full-time onsite during the fieldwork to set out the borehole locations, direct subcontractors, log the subsurface profile in accordance with Australian Standard AS1726-2017, and collect earth samples for subsequent laboratory testing.
- Upon drilling completion, the boreholes were reinstated by using drilling cuttings obtained from the borehole's excavation.
- Preparation of the borehole logs, attached in **Appendix II** along with Explanatory Notes, which describe the investigation techniques adopted and define the logging terms and symbols used.
- Point Load laboratory testing was conducted on the selected rock samples, attached in **Appendix III**.
- Preparation of a IGI report for the proposed activity, which includes the findings of fieldwork, interpretation of the subsurface conditions, assessment, and recommendations for the proposed activity.

2 Background

2.1 Site Description

The site has a street address of 6 Abundance Road, Medowie. It is 6.51ha in area, and comprises 1 allotment, legally described as Lot 3 in DP788451.

A large proportion of the site is currently unused and vacant. A small shed structure and caravan are located adjacent to the northern boundary. A cluster of buildings including a single storey dwelling, an outhouse/shed structure and temporary greenhouse are located within the southeastern corner.

The site contains a largely vegetated area to the southwest corner. The site is relatively flat with a gradual fall from west to east toward Abundance Road.

The site has a primary frontage to Abundance Road to the east and Ferodale Road to the north. Abundance Road and Ferodale Road are both classified Local Roads. Medowie Road, approximately 1km east of the site, is a classified Regional Road.

The area surrounding the site mostly consists of industrial, rural residential, educational, and agricultural lands. Adjacent to the northwestern boundary is a Shell petrol station and mechanic garage. Adjacent to the northeastern boundary is a medical health clinic. Across Abundance Road along the eastern boundary are a number of warehouse and light industrial developments. Directly north of the site across Ferodale Road are large lots used for agricultural purposes. Medowie Public School is located on Ferodale Road, to the north west of the site, opposite the Shell petrol station. **Figure 1** presents the current state of the investigation area.

Figure 1: Survey Plan with Boreholes Indicated (Base Map Source: Nearmap)

2.2 Project description

The proposed activity involves the construction of school facilities on the site for the purpose of the New High School for Medowie. The site contains a densely vegetated area to the southwest corner which is identified as land with high biodiversity values corresponding to the areas of remnant native vegetation (PCT 3995 – Hunter Coast Paperbark-Swamp Mahogany Forest). The existing dwelling house and other structures on the site will be demolished as part of the works. No other works are proposed within this area.

The proposed new school will accommodate 640 students in 29 permanent teaching spaces including 3 support teaching spaces across 3-storeys of buildings on the site. The proposed activity be delivered across 1 stage, and will consist of the following:

- 29 permanent teaching spaces including 3 support teaching spaces, to accommodate 640 students, and school hall to accommodate 1,000 students. Approximately 10,500 sqm of GFA is proposed.
- Main vehicular ingress and egress to Ferodale Road to the north, with a new pedestrian and vehicle crossing proposed.
- Main pedestrian access to Abundance Road.
- Kiss and ride, and bus drop and pick up areas to Abundance Road (6 x parallel spaces).
- New pedestrian wombat crossing to Abundance Road
- Approximately 55 x car parking spaces and 3 x accessible car parking spaces.
- Approximately 70 x bicycle parking spaces.

- Block A (Admin) consisting of administration and learning spaces.
- Block B (Foodtech/Workshop) consisting of food technology rooms and workshops.
- Block C (Hall) consisting of school hall to accommodate 1,000 students.
- Central quad, 1 playing field, and 1 sports courtyard.

The proposed school development will include the following spaces: general learning spaces, General support learning spaces, administrative services, staff areas, gym and canteen, library areas for science, wood and metal, food and textiles, health PE, performing arts, additional learning spaces, student amenities, storage, movement (stairs and covered walkways).

2.3 Regional Geology

Reference to the 1:100 000 Newcastle Geological Sheet 9232, first edition from Geological Survey of NSW (1975) indicates that the site is underlain by **Pt (Post)**, part of Tomago Coal measures Group and Permian aged. The 'PT' is referred to as shale, mudstone, sandstone, tuff, and coal. **Figure 2** shows the excerpt of the local geology from the Sydney Geological Map below.

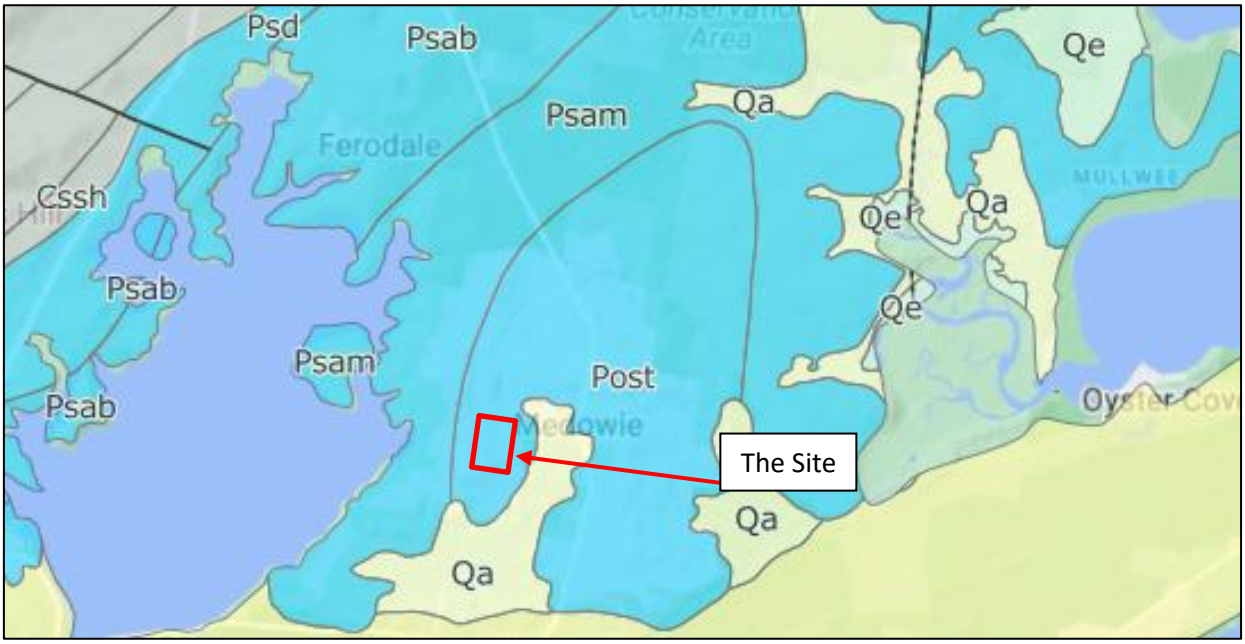


Figure 2: Extract of eSPADE Geological map by NSW Department of Planning and Environment.

3 Fieldwork Results

3.1 Subsurface Conditions

A summary of subsurface materials encountered during the investigation is presented in **Table 3** below. Reference should be made to the attached borehole logs in Appendix II of this report. Mudstone bedrock was encountered at a depth approximately 45m below existing ground level.

Table 3: Summary of Subsurface Profile

Unit	Details	Depth				
		BH202	BH203	BH205	BH206	BH208
Unit 1	Topsoil: Silty CLAY, brown, black, with rootlets	0.00 – 0.20	0.00 – 0.20	0.00 – 0.20	0.00 – 0.20	0.00 – 0.20
Unit 2	Residual: Silty CLAY, Stiff to Very stiff, with sand and trace ironstone gravels	0.20 – 24.50	0.20 – 14.95	0.20 – 35.00	0.20 – 14.95	0.20 – 25.00
Unit 3	Silty / Sandy CLAY: Hard, with extremely weathered siltstone vertical bands	24.50 – 27.20	-	35.00 – 46.73	-	25.0 – 44.60
Unit 4	MUDSTONE	-	-	46.73-49.74	-	44.6-48.4

3.2 Groundwater

Groundwater was observed during solid flight auger drilling in boreholes BH202, BH203, BH205 and BH206 at depths between 5m to 9m (Refer **Table 4**). In BH208, groundwater was not observed during auger drilling, and wash boring commenced at a depth of approximately 11.0m below ground level. Wash boring precludes observation of standing groundwater level due to introduction of water.

Table 4: Groundwater Depths encountered during drilling

Borehole Numbers	BH202	BH203	BH205	BH206
Groundwater Depth (m)	5.0	8.5	9.0	7.5

4 Laboratory Testing

Given this second round of IGI particularly aimed to assess the existing bedrock level and rock strength characteristics, Point Load tests were conducted on selected rock core samples retrieved from the geotechnical boreholes by ADE's NATA accredited laboratory.

The Point Load test results indicated the rock strength as very low to low. The results are summarized in **Table 5** and **Table 6.** The laboratory test reports are enclosed in **Appendix III**. The soil profile materials characteristics should refer to the previous IGI prepared by ADE, reference no. A201024.0124.00_A_v1d), dated 7th June 2024.

Table 5: Point Load Strength Index Test for Borehole 205

Borehole No. 205					
Sample No.	**Depth (m)**	**Description**	**Test type**	**Point Load Index $Is_{(50)}$ (MPa)**	**Failure Modes**
1	46.84	MUDSTONE	Diametrical	0.20	1
			Axial	0.29	5
2	47.84	MUDSTONE	Diametrical	0.24	1
			Axial	0.28	5
3	48.67	MUDSTONE	Diametrical	0.16	1
			Axial	0.21	5
4	49.26	MUDSTONE	Diametrical	0.49	1
			Axial	0.42	5

Table 6: Point Load Strength Index Test for Borehole 208

Borehole No. 208					
Sample No.	**Depth (m)**	**Description**	**Test type**	**Point Load Index $Is_{(50)}$ (MPa)**	**Failure Modes**
1	46.36	MUDSTONE	Diametrical	0.04	1
			Axial	0.04	6
2	46.69	MUDSTONE	Diametrical	0.05	1
			Axial	0.04	6
3	47.39	MUDSTONE	Diametrical	0.06	1
			Axial	0.16	6
4	47.79	MUDSTONE	Diametrical	0.33	1
			Axial	0.23	5
5	48.05	MUDSTONE	Diametrical	0.33	1
			Axial	0.28	5

5 Comments and Recommendations

5.1 Site Preparation and Excavation

The site preparation will involve topsoil stripping and ground levelling for the proposed structures. Based on the available geotechnical investigation findings, excavation during site preparation is expected to encounter a 200mm layer of topsoil (Unit 1), followed by Silty CLAY (Unit 2 and Unit 3) residual soil with sand and gravels up to approximately 45m below existing ground level. Based on the borehole information, MUDSTONE bedrock (Unit 4) was encountered at a depth of approximately 46.73m at borehole BH205 and 44.60m at borehole location BH208 respectively.

According to Site Sections 01-03 on the architectural site section drawing ('Site Sections – Sheet 1', Drawing MHS-NBRS-ZZ-ZZ-DR-A-004001, Rev 2, by NBRS, dated 15 January 2025) the estimated general ground fill to be placed over the site varies between approximately 0 – 1m

It is recommended within the footprint of the proposed structures that Unit 1 material should be removed if encountered. This includes the grubbing of tree roots, if present. If required, the excavated areas can be backfilled with suitably engineered fill layers to the designed subgrade level. The topsoil can be stockpiled on site for future use.

As a mitigation measure (Refer Section 5.5 for further detail), any fill, deleterious/surplus material (if present) such as timber, concrete, rubble, and any other unsuitable materials should be identified and disposed off-site. Re-use of site-won materials must comply with Australian Standard AS3798-2007 "Guidelines on earthworks for commercial and residential developments" and the material should be contamination free. Placement and compaction of engineered fill layers must also be in accordance with Australian Standard AS3798-2007. The standard provides guidance on the specification, execution, and control testing of earthworks and associated site preparation works; and on the interpretation and application of the relevant test methods specified in the AS1289 series of standards.

5.2 Groundwater Management

The result of the intrusive investigation finds that groundwater was encountered at depths ranging from 5m to 9m. Encountering groundwater will depend on the completion of the detailed design and foundation type proposed for the building structures. If shallow foundations are used, groundwater will unlikely be encountered. If deep foundations such as piles are used, groundwater will likely be encountered during piling excavation. A Groundwater Management Plan (GMP) is recommended to be prepared and implemented during the construction phase if deep foundations are to be used.

5.3 Foundations

Based on the geotechnical investigation and lab results the following geotechnical design parameters are provided in **Table 7** can be used for the design of footing foundations.

Table 7: Summary of Geotechnical Foundation Design Parameters recommended

Subsurface Materials	Unit Weight y (kN/m^3)	Undrained Cohesion Su (kPa)	Drained Cohesion C' (kPa)	Friction Angle ϕ' (°)	Elasticity Modulus E (MPa)	Poisson Ratio v'
Unit 2	20	150	5	27	30	0.3
Unit 3	20	200	10	28	60	0.25
Unit 4	24	200-500	-	30	400	0.20

Considering the geotechnical properties of the subsoil layer, a deep foundation is recommended to support the development structures. For deep foundation design, the parameter values presented in **Table 8** are recommended.

5.3.1 Pile foundation

Due to deep seated clay layers, subject to applied loading and settlement consideration, we anticipate that the pile foundation would likely be a suitable foundation option for the site. As the site is near existing residential/commercial developments, the bored piles piling method should be considered compared to driven piles to reduce both noise and vibration impact on the surrounding areas. Driven piles may refuse on gravel layers present within the subgrade (approximately 10-12m bgl). **Table 8** provides the recommended geotechnical design values for bored pile foundation design.

Table 8: Summary of Geotechnical design of bored pile Foundation Design Parameters

Subsurface Materials	Pile Ultimate End Bearing Capacity (kPa)	Pile Shaft Ultimate Bearing Capacity (kPa)
Unit 2*	1350	50
Unit 3	1800	70
Unit 4	2000	125

Notes:

- *A minimum pile embedment depth of 10m has been assumed for the ultimate end bearing capacity of the soil.
- A Geotechnical Strength Reduction Factor (ϕ_g) of 0.45 has been considered suitable for this site in accordance with the guidelines provided in AS2159-2009, which considers several factors, including the extent and quality of geotechnical data available. A higher geotechnical strength reduction factor of up to 0.65 can be adopted if pile testing is carried out.
- The Design Geotechnical strength ($R_{d,g}$) shall be calculated as the design ultimate geotechnical strength ($R_{d,ug}$) multiplied by a geotechnical strength reduction factor(ϕ_g) according to AS2159-2009 equation 4.3.1(2) $R_{d,g} = \phi_g R_{d,ug}$

5.4 Cumulative Impact Assessment

We refer to the results of the limited scope of geotechnical and detailed site investigations undertaken at this school site by ADE (Refer Detailed Site Investigation Report 'A101024.0124 Medowie DSI v3' dated 22 January 2025). The report concluded that based on observations of soil texture and type, site conditions and results from field screening tests, that Actual Acid Sulfate Soils (AASS) and Potential Acid Sulfate Soils (PASS) are not considered likely at the site. Further, the site is mapped as being in a non-saline area according to the NSW Office of Water.

The proposed school infrastructures will likely be supported by typical shallow foundations, bored pile foundations or a combination of both. Construction of these foundation types is unlikely to generate significant noise and vibration, subject to the construction methodology and machinery to be nominated by future construction contractors.

The proposed work area is within the well-developed school property. From a geotechnical perspective, we do not anticipate significant social or visual impact or adverse effects on the existing biodiversity.

5.5 Mitigation Measures

The potential project environmental risks and recommended mitigation measures are summarised in **Table 9** below:

Table 9: Summary of Mitigation Measures

Mitigation Name	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
Noise and Vibration Monitoring	Noise Monitoring, Vibration, Operational Noise	Shallow foundations and bored pile foundations are unlikely to generate significant noise and vibration	Noise and vibration assessment is outside the scope of the IGI, however use of these techniques can reduce noise and vibration impact on surrounding areas
Groundwater Management	Groundwater	Encountering groundwater will depend on the completion of the detailed design and foundation type proposed for the building structures. If shallow foundations are used, groundwater will unlikely be encountered. If deep foundations such as piles are used, groundwater will likely be encountered during piling excavation. Foundations and piles must be sufficiently dewatered to prevent groundwater infiltration and reduce risk of slope instability. A Groundwater Management Plan (GMP) is recommended to be prepared and implemented during the construction phase (outside the scope of the IGI).	Reduce risk of slope instability, prevent groundwater infiltration to excavation or piles. Identify procedure for disposal of water

Table 10: Summary of Mitigation Measures (Continued)

Mitigation Name	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
Settlement analysis	Structural Analysis	After selection of the foundation system, it is recommended to carry out a settlement analysis to confirm the total and differential settlements are within the tolerance.	Analysis to be carried out to determine if total and differential settlements are within the design tolerance
Foundation type	Foundation Design	Due to deep seated clay layers observed on site, subject to applied loading and settlement consideration, we anticipate that the pile foundation would likely be suitable foundation option for the site.	Design must consider applied loading and settlement
Removal of soft and unsuitable soils	Earthworks	All loose/soft soil within the footprint of proposed structures to be removed, including grubbing out of tree roots, if present. These layers may be backfilled with suitably engineered fill layers to the designed subgrade level. Any fill unsuitable for re-use, deleterious/surplus material (if present) such as timber, concrete, rubble, should be identified and disposed off-site.	Must be carried out in accordance with AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments"
Foundation validation	Earthworks	Validation of the foundation should be completed by an experienced geotechnical engineer	Identify locations of soft or unsuitable material and remediate prior to backfilling and construction of foundations

Conclusion

No significant adverse ground conditions were observed based on the limited scope of geotechnical investigations undertaken at the proposed work area. The proposed new school should consider the geotechnical recommendations provided in this report during the design phase. Key recommendations are listed below, but not limited for general reference:

- All loose/soft soil within the footprint of the proposed structures to be removed, including grubbing out of tree roots, if present.
- Earthwork should be carried out in accordance with AS3798-2007 “Guidelines on Earthworks for Commercial and Residential Developments”.
- Deep bedrock was present at the site and found to be at roughly 45m below ground level and consisted of low strength MUDSTONE.
- Groundwater is presently found between 5 and 9m BGL. As such, excavations deeper than this must be sufficiently dewatered as a mitigation measure to prevent groundwater infiltration and reduce the risk of slope instability.
- Validation of the foundation should be completed by an experienced geotechnical engineer.
- After selection of the foundation system, it is recommended to carry out a settlement analysis to confirm the total and differential settlements are within the tolerance.

We recommend that ADE or a suitably qualified geotechnical engineer be involved during the design stage and construction stage. This is to assist and discuss if the geotechnical recommendations provided in this report is interpreted and implemented effectively in the proposed engineering design with the nominated Structural Engineer and construction contractor.

6 References

- 1:100 000 Newcastle Geological Sheet 9232, first edition from Geological Survey of NSW (1983), Geological Survey of New South Wales, Sydney
- B.G Look – Handbook of Geotechnical Investigation and Design Tables (Pub 2007)
- eSPADE 2024, (https://www.environment.nsw.gov.au/eSpade2Webapp/)
- Standards Australia, Australian Standards (AS) 1726-2017 Geotechnical Site Investigations (Pub 2nd May 2017)
- Standards Australia, Australian Standards (AS) 2870-2011 Residential slabs and footings. (Pub 17th January 2011)
- Standards Australia, Australian Standards (AS) 2159-2009 Piling – Design and installation. (Pub 4th November 2009)
- Standards Australia, Australian Standards (AS) 3798-2007 Guidelines on earthworks for commercial and residential developments. (Pub 12th March 2007)
- P.J.N. Pells, G. Mostyn and B.F. Walker, Foundations on Sandstone and Shale in the Sydney Region, Australian Geomechanics, December 1998, pp 17-29
- Pells, P.J.N, Douglas D.J, Rodway, B, Thorne C, McManon B.K – Design Loadings for Foundations on Shale and Sandstone in the Sydney Region. Australian Geomechanics Journal, 1978Guide to Residential Slabs and Footings in Saline Environments CCAA T56-2005

7 Limitations

This report has been prepared for use by the Client who has commissioned the works in accordance with the project brief only and has been based on information provided by the Client. The advice herein relates only to this project and all results, conclusions and recommendations made should be reviewed by a competent and experienced person with experience in geotechnical investigations, before being used for any other purpose.

ADE Consulting Group Pty Ltd (ADE) accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced or amended in any away without prior approval by the client or ADE and should not be relied upon by any other party, who should make their own independent inquiries.

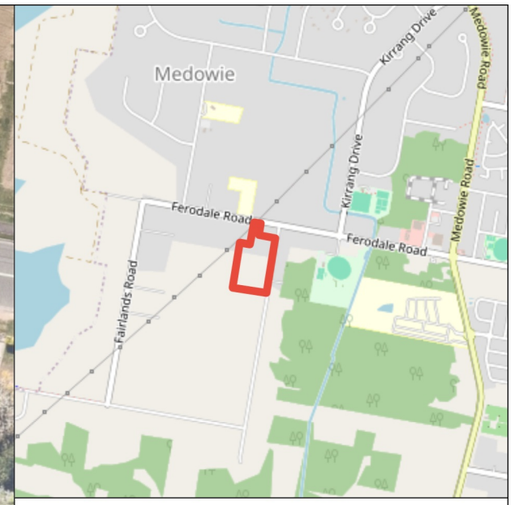
This report does not provide a complete assessment of the geotechnical status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site (e.g., conditions exposed at the site during earthworks varying significantly with the results within this report), ADE reserves the right to review the report in the context of the additional information.

ADE's professional opinions are based upon its professional judgment, experience, training, and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. ADE has limited investigation to the scope agreed upon with its client.

This report has been written with the intent of providing information on the site subsurface to the client for design and construction purposes. Subsurface conditions relevant to the works undertaken by the client should be assessed by a competent contractor who can make their interpretation of the data represented within this report.

Subsurface conditions will always vary within a worksite and the extremes of these variations cannot be defined by exhaustive investigations, and as such, the measurements and values obtained within this result may not be representative of these extremes.

Appendix I – Borehole Location Plan



Legend

- Borehole / Groundwater wells Apr 2024
- Borehole - Nov 2024
- Approximate Site Boundary

0 10 m 20 m

ADE CONSULTING GROUP

Produced by **Datanest.earth**

Title: Geotechnical borehole locations		
Client: SINSW		Size: A3
Project: 24.0124 SINSW Medowie	Drawn: KA	Figure No.: 2
Date: 19-12-2024	Checked: AT	
Proj No: A101024.0124	Scale: 1:1000	Version: draft

Appendix II – Borehole Logs and Explanatory Notes

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH202

FILE / JOB NO :

SHEET : 1 OF 4

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392738.54, N: 6379858.34 (MGA2020-56) SURFACE ELEVATION : 15.10 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 19/11/2024 DATE COMPLETED : 20/11/2024 DATE LOGGED : 20/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
				ES-1 0.20m	0.0 15.1			<TOPSOIL> Silty CLAY: black, with rootlets. 0.20m			TOPSOIL
							CL-CI	Silty CLAY: low to medium plasticity, red-brown. 1.00m			RESIDUAL SOIL
				SPT 4,7,9 N=16 1.45m	1.0 14.1		CL-CI	Silty CLAY: low to medium plasticity, orange-brown, with ironstone gravels. 2.50m	D	VSt	1.00: PP =300 - 350 kPa
				SPT 5,8,9 N=17 2.95m	2.0 13.1 3.0 12.1		CI-CH	Silty CLAY: medium to high plasticity, orange-brown mottled red, trace ironstone gravels. 4.00m	M		2.50: PP =350 - 380 kPa
AS		F	▶	SPT 8,14,19 N=33 4.45m	4.0 11.1 5.0 10.1		CL-CI	Sandy CLAY: low to medium plasticity, orange-brown mottled red-brown, fine to medium grained. 5.50m		VSt	
				SPT 5,10,10 N=20 5.95m	6.0 9.1		CL-CI	Silty Sandy CLAY: low to medium plasticity, pale grey mottled orange-red. 7.00m	w≈LL	VSt	
				SPT 5,9,17 N=26 7.45m	7.0 8.1		CL-CI	Sandy CLAY: low to medium plasticity, pale grey mottled orange, iron indurated bands.	w≈PL		
					8.0 7.1						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH202

FILE / JOB NO :

SHEET : 2 OF 4

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392738.54, N: 6379858.34 (MGA2020-56) SURFACE ELEVATION : 15.10 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 19/11/2024 DATE COMPLETED : 20/11/2024 DATE LOGGED : 20/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					8.0 7.1		CL-CI	Sandy CLAY: low to medium plasticity, pale grey mottled orange, iron indurated bands. *(continued)*			RESIDUAL SOIL
				SPT 6,11,15 N=26 8.95m				8.50m Silty CLAY: medium to high plasticity, pale grey mottled purple-red, with iron indurated bands.			
AS					9.0 6.1		CI-CH		w≈PL	VSt	
								10.00m			
				SPT 8,21 HB N=R 10.30m	10.0 5.1		SC	Clayey SAND: fine to coarse grained, pale grey mottled red, with iron indurated bands, with quartz gravels.	W	MD	
								10.30m Sandy CLAY: low to medium plasticity, orange-brown, fine to coarse grained.			
					11.0 4.1		CL-CI				
								11.60m Silty CLAY: low to medium plasticity, pale grey mottled red-brown, with ironstone gravels.			
		F			12.0 3.1		CL-CI				
								12.90m Sandy CLAY: low to medium plasticity, orange-brown, fine to coarse grained.			
WB					13.0 2.1				w≈PL	St	
					14.0 1.1		CL-CI				
					15.0 0.1						
					16.0 -0.9						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : **BH202**
FILE / JOB NO :
SHEET : 3 OF 4

CLIENT : SINSW
PROJECT : Medowie High School Geotechnical Investigation
LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392738.54, N: 6379858.34 (MGA2020-56) SURFACE ELEVATION : 15.10 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 19/11/2024 DATE COMPLETED : 20/11/2024 DATE LOGGED : 20/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING					MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					16.0 -0.9		CL-Cl	Sandy CLAY: low to medium plasticity, orange-brown, fine to coarse grained. *(continued)*			RESIDUAL SOIL
								16.30m Silty CLAY: low to medium plasticity, grey mottled orange-brown.			
					17.0 -1.9						
					18.0 -2.9		CL-Cl		w≈PL	St	
					19.0 -3.9						
WB		F			20.0 -4.9			20.20m			
							CL-Cl	20.40m Gravelly CLAY: lot to medium plasticity, orange-brown, fine to coarse grained.			
							CL-Cl	Silty CLAY: low to medium plasticity, grey mottled orange-brown.			
					21.0 -5.9			20.90m			
							GC	Clayey GRAVEL: fine to coarse grained, subrounded to rounded, orange-brown, low to medium plasticity.	W	MD	
								21.65m Silty CLAY: low to medium plasticity, grey mottled orange-brown.			
					22.0 -6.9		CL-Cl				
								22.20m Silty CLAY: low to medium plasticity, pale grey.			
					23.0 -7.9				w≈PL	VSt	
							CL-Cl				
					24.0 -8.9			24.00m			

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH202

FILE / JOB NO :

SHEET : 4 OF 4

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392738.54, N: 6379858.34 (MGA2020-56) SURFACE ELEVATION : 15.10 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 19/11/2024 DATE COMPLETED : 20/11/2024 DATE LOGGED : 20/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					24.0 -8.9		GC	Clayey GRAVEL: fine to coarse grained, subrounded to rounded, orange-brown, low to medium plasticity.	W		RESIDUAL SOIL
								24.50m			
WB		F			25.0 -9.9		CL-CI	Silty CLAY: low to medium plasticity, pale grey.			
								25.80m			
					26.0 -10.9		SC	Sandy CLAY: low plasticity, pale grey, fine to medium grained.	w≈PL	H	
								26.25m			
							CI-CH	Silty CLAY: medium to high plasticity, pale grey mottled orange-brown.			
					27.0 -11.9			27.20m			
								Hole Terminated at 27.20 m			
					28.0 -12.9						
					29.0 -13.9						
					30.0 -14.9						
					31.0 -15.9						
					32.0 -16.9						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH203

FILE / JOB NO :

SHEET : 1 OF 2

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392738.77, N: 6376875.94 (MGA2020-56) SURFACE ELEVATION : 15.10 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 20/11/2024 DATE COMPLETED : 20/11/2024 DATE LOGGED : 20/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AS		F		ES-2 0.10m	0.0 15.1			<TOPSOIL> Silty CLAY: black, with rootlets.	M		TOPSOIL
					0.20m			Silty CLAY: low to medium plasticity, orange-brown, with trace ironstone gravels.			RESIDUAL SOIL
				SPT 3,6,7 N=13 1.45m	1.0 14.1		CL-CI		M	St	
					2.0 13.1						
				SPT 6,8,11 N=19 2.95m	2.50m			Silty CLAY: low to medium plasticity, orange-brown mottled red-brown, with ironstone gravels.	D		
					3.0 12.1		CL-CI				
				SPT 6,11,14 N=25 4.45m	4.00m			Silty CLAY: low to medium plasticity, red-brown mottled pale grey, with ironstone gravels.	M	VSt	
					5.0 10.1						
				SPT 6,18,23 N=41 5.95m	6.0 9.1		CL-CI				
				SPT 6,8,13 N=21 7.45m	7.00m			Silty CLAY: medium to high plasticity, pale grey mottled red-brown, with iron indurated bands.	w≈PL	VSt	
					8.0 7.1		CI-CH				

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH203

FILE / JOB NO :

SHEET : 2 OF 2

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392738.77, N: 6376875.94 (MGA2020-56) SURFACE ELEVATION : 15.10 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 20/11/2024 DATE COMPLETED : 20/11/2024 DATE LOGGED : 20/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					8.0 7.1		CI-CH	Silty CLAY: medium to high plasticity, pale grey mottled red-brown, with iron indurated bands. *(continued)*			RESIDUAL SOIL
				SPT 6,9,11 N=20				8.50m Silty CLAY: low to medium plasticity, pale grey mottled red-brown, with iron indurated bands.			
				8.95m	9.0 6.1		CL-CI			VSt	
								10.00m			
				SPT 10,8,6 N=14	10.0 5.1		CI-CH	Sandy CLAY: medium to high plasticity, red-brown mottled pale grey, fine to coarse grained, with gravel.	w≈PL		
				10.45m							
AS		F			11.0 4.1			11.50m Sandy CLAY: medium to high plasticity, pale grey mottled yellow brown, fine to coarse grained.		St	
				SPT 5,8,11 N=19							
				11.95m	12.0 3.1		CI-CH				
								12.80m			
							SC	13.00m Clayey SAND: fine to coarse grained, pale grey mottled orange-brown, medium to high plasticity.	W	MD	
				SPT 4,5,7 N=12	13.0 2.1			Silty Sandy CLAY: medium to high plasticity, orange-brown mottled pale grey, fine grained.			
				13.45m							
					14.0 1.1		CI-CH		w≈PL	St	
				SPT 4,9,12 N=21							
				14.95m				14.95m			
					15.0 0.1			Hole Terminated at 14.95 m			
					16.0 -0.9						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH205

FILE / JOB NO :
SHEET : 1 OF 8

CLIENT : SINSW
PROJECT : Medowie High School Geotechnical Investigation
LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392786.00, N: 6379899.00 (MGA2020-56) SURFACE ELEVATION : 14.61 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 25/11/2024 DATE COMPLETED : 27/11/2024 DATE LOGGED : 27/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AS		F		ES-3	0.0 14.6			<TOPSOIL> Silty Clay: brown-black, with rootlets. 0.20m	D		TOPSOIL
				0.40m 0.80m ES-4 1.00m SPT 5,7,9 N=16 1.45m	1.0 13.6		CL-CI	Silty CLAY: low to medium plasticity, orange-brown mottled red-brown, trace ironstone gravels.		VSt	RESIDUAL SOIL
				SPT 6,6,9 N=15 2.95m	2.0 12.6 3.0 11.6		CL-CI	2.50m Silty CLAY: low to medium plasticity, orange-brown mottled yellow-brown, red-brown, with ironstone gravels. 4.00m		St	
				SPT 8,12,16 N=28 4.45m	4.0 10.6		CL-CI	Silty CLAY: low to medium plasticity, pale grey mottled red-brown, with ironstone gravels. 5.50m	M		
				SPT 7,16,14 N=30 5.95m	5.0 9.6 6.0 8.6		CL-CI	Silty CLAY: low to medium plasticity, pale grey mottled red-brown, with iron indurated bands. 7.00m		VSt	
				SPT 8,11,14 N=25 7.45m	7.0 7.6		CL-CI	Silty CLAY: low to medium plasticity, pale grey mottled pale red, with iron indurated bands. 8.00m			
					8.0 6.6						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH205

FILE / JOB NO :

SHEET : 2 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392786.00, N: 6379899.00 (MGA2020-56) SURFACE ELEVATION : 14.61 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 25/11/2024 DATE COMPLETED : 27/11/2024 DATE LOGGED : 27/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					8.0 6.6		SM	Silty SAND: fine grained, red.	M	MD	RESIDUAL SOIL
				SPT 5,7,9 N=16 8.95m				8.50m Silty CLAY: medium to high plasticity, pale grey mottled red, with iron indurated bands.			
AS		F			9.0 5.6				W		
				SPT 7,10,10 N=20 10.45m	10.0 4.6		CI-CH				
					11.0 3.6			11.50m Silty CLAY: medium to high plasticity, pale grey mottled red-brown.			
				SPT 4,6,9 N=15 11.95m	12.0 2.6		CI-CH			VSt	
WB		F		SPT 5,8,11 N=19 13.45m	13.0 1.6			13.00m Silty CLAY: medium to high plasticity, yellow-brown mottled pale grey.	w≈PL		
					14.0 0.6		CI-CH	14.50m Silty CLAY: medium to high plasticity, pale red mottled pale grey, with sand, fine grained			
				SPT 4,8,9 N=17 14.95m	15.0 -0.4						
					16.0 -1.4		CI-CH	16.00m			

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH205

FILE / JOB NO :

SHEET : 3 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392786.00, N: 6379899.00 (MGA2020-56) SURFACE ELEVATION : 14.61 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 25/11/2024 DATE COMPLETED : 27/11/2024 DATE LOGGED : 27/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
WB		F		SPT 5,6,8 N=14 16.45m	16.0 -1.4		CI-CH	Silty CLAY: medium to high plasticity, pale grey mottled yellow-brown.			RESIDUAL SOIL
				SPT 5,6,8 N=14 17.95m	17.0 -2.4			17.50m		St	
				SPT 14,19,10/70mm HB N=R 19.37m	18.0 -3.4		CI-CH	Silty CLAY: medium to high plasticity, orange-brown mottled pale grey, with gravel, with extremely weathered clay bands.	w≈PL		
					19.0 -4.4			19.50m			
				SPT 6,11,15 N=26 20.95m	20.0 -5.4		CL-CI	Sandy CLAY: low to medium plasticity, pale grey, medium to coarse grained, with river gravel.		VSt	
					21.0 -6.4						
				SPT 7,8,11 N=19 22.45m	22.0 -7.4		SC	22.00m Clayey SAND: fine to coarse grained, pale grey, low to medium plasticity, with subangular gravel.	W	MD	
					23.0 -8.4			23.50m			
				SPT 6,7,9 N=16 23.95m	24.0 -9.4		CH	Silty CLAY: high plasticity, pale grey-pale yellow, with trace gravels.	w≈PL	VSt	

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH205

FILE / JOB NO :

SHEET : 4 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392786.00, N: 6379899.00 (MGA2020-56) SURFACE ELEVATION : 14.61 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 25/11/2024 DATE COMPLETED : 27/11/2024 DATE LOGGED : 27/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					24.0 -9.4		CH	Silty CLAY: high plasticity, pale grey-pale yellow, with trace gravels. *(continued)*			RESIDUAL SOIL
				SPT 6,9,11 N=20 25.45m	25.0 -10.4		CL-CI	Silty CLAY: low to medium plasticity, pale grey mottled yellow brown 25.00m			
				SPT 7,10,14 N=24 26.95m	26.0 -11.4			Silty CLAY: low to medium plasticity, pale grey mottled red-brown. 26.50m			
WB		F			27.0 -12.4						
				SPT 5,8,10 N=18 28.45m	28.0 -13.4				w≈PL	VSt	28.00: PP =400 - 350 kPa
					29.0 -14.4		CL-CI				
				SPT 7,8,13 N=21 29.95m							29.50: PP =500 - 550 kPa
		H			30.0 -15.4						
					31.0 -16.4						
					32.0 -17.4						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH205

FILE / JOB NO :

SHEET : 5 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392786.00, N: 6379899.00 (MGA2020-56) SURFACE ELEVATION : 14.61 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 25/11/2024 DATE COMPLETED : 27/11/2024 DATE LOGGED : 27/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					32.0 -17.4			Silty CLAY: low to medium plasticity, pale grey mottled red-brown. *(continued)*			RESIDUAL SOIL
					33.0 -18.4		CL-CI			VSt	
					34.0 -19.4						
					35.0 -20.4			35.00m			
				SPT 10,16,23 N=39				Silty CLAY: low to medium plasticity, brown, extremely weathered siltstone vertical bands.			
				35.45m							
WB		H			36.0 -21.4				w≈PL		
					37.0 -22.4		CL-CI			H	
					38.0 -23.4						
					39.0 -24.4						
					40.0 -25.4						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH205

FILE / JOB NO :

SHEET : 6 OF 8

CLIENT : SINSW PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392786.00, N: 6379899.00 (MGA2020-56) SURFACE ELEVATION : 14.61 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 25/11/2024 DATE COMPLETED : 27/11/2024 DATE LOGGED : 27/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
WB		H		SPT 13,21,17/40mm HB N=R 40.34m	40.0 -25.4		CL-Cl	Silty CLAY: low to medium plasticity, brown, extremely weathered siltstone vertical bands. *(continued)*	w≈PL	H	RESIDUAL SOIL
					41.0 -26.4						
					42.0 -27.4						
					43.0 -28.4						
					44.0 -29.4						
					45.0 -30.4						
					46.0 -31.4			46.73m			
								Continued as Cored Drill Hole			
					47.0 -32.4						
					48.0 -33.4						

See Explanatory Notes for details of abbreviations & basis of descriptions.

CORED DRILL HOLE LOG

HOLE NO : BH205

CLIENT : SINSW
PROJECT : Medowie High School Geotechnical Investigation
LOCATION : 6 Abundance Road, Medowie NSW 2318
FILE / JOB NO :
SHEET : 7 OF 8

POSITION : E: 392786.00, N: 6379899.00 (MGA2020-56) SURFACE ELEVATION : 14.61 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 25/11/2024 DATE COMPLETED : 27/11/2024 DATE LOGGED : 27/11/2024 LOGGED BY : CH CHECKED BY :

CASING DIAMETER : BARREL (Length) : BIT : BIT CONDITION :

DRILLING						MATERIAL				FRACTURES		
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	WEATHERING	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral EL VL L M H VH EH -0.03 -0.1 -0.3 -1 -3 -10	NATURAL FRACTURE (mm) 20 40 100 300 1000	VISUAL	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					40.0							
					41.0							
					42.0							
					43.0							
					44.0							
					45.0							
					46.0							
							46.73m START CORING AT 46.73m					
HQ3			27.47	Is(50) A=0.290 MPa Is(50) D=0.190 MPa	47.0		MUDSTONE: brown, low strength, highly weathered.	HW				EW Seam, clay JT, 0°, CN, UN, RF JT, 85°, clay CN, PR, VR EW Seam, clay EW Seam, clay JT, 40°, EW Rock CN, IR, RF JT, 45°, EW Rock CN, IR, VR JTEW Rock, 90°, clay CN, PR, RF DB
		47.64					47.67m					
			80	Is(50) A=0.280 MPa Is(50)	48.0		MUDSTONE: dark grey, low to medium strength, highly weathered to moderately weathered.	HW to MW				

See Explanatory Notes for details of abbreviations & basis of descriptions.

CORED DRILL HOLE LOG

HOLE NO : BH205

FILE / JOB NO :

SHEET : 8 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392786.00, N: 6379899.00 (MGA2020-56) SURFACE ELEVATION : 14.61 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 25/11/2024 DATE COMPLETED : 27/11/2024 DATE LOGGED : 27/11/2024 LOGGED BY : CH CHECKED BY :

CASING DIAMETER : BARREL (Length) : BIT : BIT CONDITION :

DRILLING						MATERIAL				FRACTURES		
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	WEATHERING	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral (EL, VL, L, M, H, VH, EH)	NATURAL FRACTURE (mm)	VISUAL	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
HQ3			80	D=0.220 MPa	48.0		MUDSTONE: dark grey, low to medium strength, highly weathered to moderately weathered. *(continued)*	HW to MW				DB
												DB
				Is(50) D=0.210 MPa Is(50) A=0.160 MPa	49.0							DB JT, 5°, CN, PR, RF
												DB JT, 30°, Pl, RF
				Is(50) D=0.420 MPa Is(50) A=0.490 MPa								DB
		49.74					49.74m					JT, 30°, clay, Pl, RF
					50.0		Hole Terminated at 49.74 m					
					51.0							
					52.0							
					53.0							
					54.0							
					55.0							
					56.0							

See Explanatory Notes for details of abbreviations & basis of descriptions.

ADE CONSULTINGGROUP
SOLUTIONS THROUGH INNOVATION

Project: New Medowie High School Geotech Investigation

Job No: A201024.0124.00

Borehole No: BH205

Depth: 46.73-49.74m

Date: 27/11/24.

0(m) 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

A201024.0124.00 BH205 START 46.73m

47

48

49

END BH49.74

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH206

FILE / JOB NO :

SHEET : 1 OF 2

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392813.00, N: 6376896.00 (MGA2020-56) SURFACE ELEVATION : 14.34 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 20/11/2024 DATE COMPLETED : 20/11/2024 DATE LOGGED : 20/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AS		F	▶	ES-5	0.0 14.3			<TOPSOIL> Silty CLAY: black, with rootlets. 0.20m	D		TOPSOIL
				0.50m				Silty CLAY: low to medium plasticity, red-brown.			RESIDUAL SOIL
				0.80m ES-6 1.00m SPT 4,6,11 N=17	1.0 13.3		CL-CI		D		
				1.45m							
					2.0 12.3			2.50m			
				SPT 5,8,12 N=20				Silty CLAY: low to medium plasticity, orange-brown mottled red-brown, with ironstone gravels.			
				2.95m	3.0 11.3		CL-CI				
				SPT 2,7,12 N=19	4.0 10.3			4.00m Silty CLAY: medium to high plasticity, red-brown mottled orange-brown, with ironstone gravels.		VSt	4.00: PP =210 - 250 kPa
				4.45m			CI-CH		M		
					5.0 9.3			5.50m			
				SPT 6,9,13 N=22				Silty CLAY: low to medium plasticity, pale grey mottled red-orange, with sand, with quartz gravels.			5.50: PP =500 - 550 kPa
				5.95m	6.0 8.3		CL-CI				
								7.00m			
				SPT 8,7,11 N=18	7.0 7.3			Silty CLAY: low to medium plasticity, grey mottled red-brown, with fine to medium grained sand.			7.00: PP =410 - 410 kPa
				7.45m			CL-CI				
					8.0 6.3						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH206

FILE / JOB NO :

SHEET : 2 OF 2

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392813.00, N: 6376896.00 (MGA2020-56) SURFACE ELEVATION : 14.34 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 20/11/2024 DATE COMPLETED : 20/11/2024 DATE LOGGED : 20/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					8.0 6.3		CL-CI	Silty CLAY: low to medium plasticity, grey mottled red-brown, with fine to medium grained sand. *(continued)*			RESIDUAL SOIL
				SPT 3,5,10 N=15 8.95m				8.50m Silty CLAY: medium to high plasticity, red-brown mottled grey, with ironstone gravels.			
					9.0 5.3		CI-CH		M		
				SPT 4,6,10 N=16 10.45m	10.0 4.3			10.00m Silty CLAY: medium to high plasticity, pale red mottled pale grey, with ironstone gravels.			10.00: PP =400 - 300 kPa
AS		F			11.0 3.3		CI-CH	11.50m		VSt	
				SPT 5,7,12 N=19 11.95m				Silty CLAY: medium to high plasticity, pale grey mottled orange-brown.			
					12.0 2.3		CI-CH	13.00m			
				SPT 6,7,10 N=17 13.45m	13.0 1.3			Silty CLAY: low to medium plasticity, pale grey mottled orange-brown.	w≈PL		13.00: PP =400 - 350 kPa
					14.0 0.3		CL-CI				
				SPT 4,7,9 N=16 14.95m				14.95m			
					15.0 -0.7			Hole Terminated at 14.95 m			
					16.0 -1.7						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH208

FILE / JOB NO :

SHEET : 1 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392818.98, N: 6376848.76 (MGA2020-56) SURFACE ELEVATION : 14.25 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 21/11/2024 DATE COMPLETED : 25/11/2024 DATE LOGGED : 25/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AS					0.0 14.3			<TOPSOIL> Silty CLAY: black, with rootlets.	D		TOPSOIL
					0.20m						
				0.40m ES-7 0.50m				Silty CLAY: low to medium plasticity, brown-orange.			RESIDUAL SOIL
				SPT 4,5,5 N=10	1.0 13.3						
				1.45m			CL-Cl		D	St	
					2.0 12.3						
					2.50m						
				SPT 3,8,11 N=19				Silty CLAY: low to medium plasticity, orange-brown mottled red-brown, with ironstone gravels.			
				2.95m	3.0 11.3		CL-Cl				
					4.00m						
		E		SPT 3,8,11 N=19	4.0 10.3			Silty CLAY: low to medium plasticity, pale grey mottled red-brown, with ironstone gravels.			
				4.45m							
					5.0 9.3				M	VSt	
				SPT 7,11,16 N=27							
				5.95m	6.0 8.3		CL-Cl				
				SPT 6,8,11 N=19	7.0 7.3						
				7.45m							
					8.0 6.3						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH208

FILE / JOB NO :

SHEET : 2 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392818.98, N: 6376848.76 (MGA2020-56) SURFACE ELEVATION : 14.25 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 21/11/2024 DATE COMPLETED : 25/11/2024 DATE LOGGED : 25/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					8.0 6.3		CL-CI	Silty CLAY: low to medium plasticity, pale grey mottled red-brown, with ironstone gravels. *(continued)*			RESIDUAL SOIL
				SPT 10,17,19 N=36 8.95m				8.50m Silty CLAY: low to medium plasticity, pale grey mottled red-brown, with iron indurated bands.			
AS		E			9.0 5.3		CL-CI		M		
								10.00m			
				SPT 4,8,11 N=19 10.45m	10.0 4.3			Silty CLAY: low to medium plasticity, pale grey mottled pale red-brown.			10.00: PP =450 - 550 kPa
					11.0 3.3		CL-CI			VSt	
								11.50m			
				SPT 4,7,9 N=16 11.95m				Silty CLAY: medium to high plasticity, pale grey mottled red-brown, with sand.			11.50: PP =300 - 350 kPa
					12.0 2.3		CI-CH				
								13.00m			
	WB	F		SPT 3,5,8 N=13 13.45m	13.0 1.3			Sandy CLAY: medium to high plasticity, red-brown, fine to coarse grained, with silt, with river gravels.	w≈PL		
					14.0 0.3		CI-CH			St	
								14.50m			
				SPT 5,8,11 N=19 14.95m				Silty CLAY: medium to high plasticity, yellow-brown.			14.50: PP =300 - 400 kPa
					15.0 -0.8		CI-CH			VSt	
					16.0 -1.8						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : **BH208**
FILE / JOB NO :
SHEET : 3 OF 8

CLIENT : SINSW
PROJECT : Medowie High School Geotechnical Investigation
LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392818.98, N: 6376848.76 (MGA2020-56) SURFACE ELEVATION : 14.25 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 21/11/2024 DATE COMPLETED : 25/11/2024 DATE LOGGED : 25/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					16.0 -1.8			Silty CLAY: medium to high plasticity, yellow-brown. *(continued)*			RESIDUAL SOIL 16.00: PP =300 - 400 kPa
				SPT 5,7,11 N=18 16.45m			CI-CH				
								16.50m Silty CLAY: medium to high plasticity, pale grey.			
					17.0 -2.8						
				SPT 5,7,10 N=17 17.95m							17.50: PP =300 - 350 kPa
					18.0 -3.8		CI-CH				
				SPT 4,7,8 N=15 19.45m	19.0 -4.8						19.00: PP =250 - 250 kPa
WB		F			20.0 -5.8				w≈PL	VSt	
								20.50m Silty CLAY: medium to high plasticity, grey mottled yellow-brown.			
				SPT 5,9,12 N=21 20.95m							20.50: PP =550 - 450 kPa
					21.0 -6.8						
				SPT 8,12,17 N=29 22.45m	22.0 -7.8		CI-CH				
					23.0 -8.8						
								23.50m Silty CLAY: medium to high plasticity, pale grey.			
				SPT 3,8,11 N=19 23.95m			CI-CH				23.50: PP =400 - 350 kPa
					24.0 -9.8						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH208

FILE / JOB NO :

SHEET : 4 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392818.98, N: 6376848.76 (MGA2020-56) SURFACE ELEVATION : 14.25 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 21/11/2024 DATE COMPLETED : 25/11/2024 DATE LOGGED : 25/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
		F			24.0 -9.8		CI-CH	Silty CLAY: medium to high plasticity, pale grey. *(continued)*		VSt	RESIDUAL SOIL
					25.00m						
WB		H		SPT 8,13,17 N=30 25.45m	25.0 -10.8		CL-CI	Silty CLAY: low to medium plasticity, pale grey mottled orange-brown.	w≈PL	H	25.00: PP =600 - 550 kPa
				SPT 8,16,18 N=34 26.95m	26.0 -11.8						26.50: PP >600 - >600 kPa
				SPT 12,17,20 N=37 28.45m	27.0 -12.8						28.00: PP >600 - >600 kPa
				SPT 12,18,22 N=40 29.95m	28.0 -13.8						
					29.0 -14.8						
					30.0 -15.8						
					31.0 -16.8						
					32.0 -17.8						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH208

FILE / JOB NO :

SHEET : 5 OF 8

CLIENT : SINSW PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392818.98, N: 6376848.76 (MGA2020-56) SURFACE ELEVATION : 14.25 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 21/11/2024 DATE COMPLETED : 25/11/2024 DATE LOGGED : 25/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					32.0 -17.8		CL-Cl	Silty CLAY: low to medium plasticity, pale grey mottled orange-brown. *(continued)*	w≈PL	H	RESIDUAL SOIL
								32.50m			
					33.0 -18.8		GC	Clayey GRAVEL: fine to coarse grained, subrounded, pale grey, low to medium plasticity.	W	VD	
								34.00m			
					34.0 -19.8			Silty CLAY: low to medium plasticity, pale grey mottled orange-brown.			
WB		H			35.0 -20.8						
					36.0 -21.8						
					37.0 -22.8		CL-Cl		w≈PL	H	
					38.0 -23.8						
					39.0 -24.8						
					40.0 -25.8						

See Explanatory Notes for details of abbreviations & basis of descriptions.

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH208

FILE / JOB NO :

SHEET : 6 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392818.98, N: 6376848.76 (MGA2020-56) SURFACE ELEVATION : 14.25 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 21/11/2024 DATE COMPLETED : 25/11/2024 DATE LOGGED : 25/11/2024 LOGGED BY : CH CHECKED BY :

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
WB		H			40.0 -25.8		CL-CI	Silty CLAY: low to medium plasticity, pale grey mottled orange-brown. *(continued)*	w~PL	H	RESIDUAL SOIL
					41.0 -26.8						
					42.0 -27.8						
					43.0 -28.8			43.90m			
					44.0 -29.8		SC	Clayey SAND: fine to coarse grained, grey, low to medium plasticity.	W	VD	
								44.60m			
								Continued as Cored Drill Hole			
					45.0 -30.8						
					46.0 -31.8						
					47.0 -32.8						
					48.0 -33.8						

See Explanatory Notes for details of abbreviations & basis of descriptions.

CORED DRILL HOLE LOG

HOLE NO : BH208

FILE / JOB NO :

SHEET : 7 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392818.98, N: 6376848.76 (MGA2020-56) SURFACE ELEVATION : 14.25 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 21/11/2024 DATE COMPLETED : 25/11/2024 DATE LOGGED : 25/11/2024 LOGGED BY : CH CHECKED BY :

CASING DIAMETER : BARREL (Length) : BIT : BIT CONDITION :

DRILLING						MATERIAL				FRACTURES		
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	WEATHERING	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral EL 0.03 VL 0.1 L 0.3 M 1 H 3 VH 10 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	VISUAL	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					40.0							
					41.0							
					42.0							
					43.0							
					44.0		44.60m START CORING AT 44.60m					
HQ3			0		45.0		MUDSTONE: grey-brown					
							45.51m					EWZ
			0				NO CORE 0.36m (45.51-45.87) CORE LOSS					
		45.87 45.94					45.87m					
			44		46.0		MUDSTONE: grey-brown					
							46.31m					
				Is(50) A=0.0400 MPa Is(50) D=0.0400 MPa Is(50) A=0.0400 MPa Is(50) D=0.0500 MPa			MUDSTONE: dark grey.					JT, 10°, clay CN, PR, RF JT, 20°, rock CN, PR, RF JT, 20°, clay CN, PR, RF JT, 20°, rock CN, PR, RF JT, 20°, rock CN, PR, RF CZ JT, 10°, rock CN, PR, RF DB JT, 80°, rock, clay CN, UN, RF
		47.70		Is(50) A=0.160 MPa Is(50) D=0.0600 MPa	47.0							JT, 30°, rock CN, PR, RF JT, 0°, rock CN, PR, RF JT, 10°, rock CN, PR, VR JT, 10°, clay CN, PR, VR CZ JT, 20°, clay CN, UN, RF JT, 0°, clay CN, PR, RF
			93.7	Is(50) A=0.230 MPa	48.0							

See Explanatory Notes for details of abbreviations & basis of descriptions.

CORED DRILL HOLE LOG

HOLE NO : BH208

FILE / JOB NO :

SHEET : 8 OF 8

CLIENT : SINSW

PROJECT : Medowie High School Geotechnical Investigation

LOCATION : 6 Abundance Road, Medowie NSW 2318

POSITION : E: 392818.98, N: 6376848.76 (MGA2020-56) SURFACE ELEVATION : 14.25 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MC 450 MOUNTING : Track CONTRACTOR : Terratest DRILLER : Toby

DATE STARTED : 21/11/2024 DATE COMPLETED : 25/11/2024 DATE LOGGED : 25/11/2024 LOGGED BY : CH CHECKED BY :

CASING DIAMETER : BARREL (Length) : BIT : BIT CONDITION :

DRILLING						MATERIAL				FRACTURES		
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	WEATHERING	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral EL -0.03 VL -0.1 L -0.3 M -1 H -3 VH -10 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	VISUAL	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
HQ3		48.34	93.7	Is(50) D=0.330 MPa Is(50) A=0.280 MPa Is(50) D=0.330 MPa	48.0		MUDSTONE: dark grey. *(continued)* 48.40m Hole Terminated at 48.40 m					DB JT, 0°, clay CN, PR, RF JT, 45°, Fe CN, PR, RF
					49.0							
					50.0							
					51.0							
					52.0							
					53.0							
					54.0							
					55.0							
					56.0							

See Explanatory Notes for details of abbreviations & basis of descriptions.

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Project: New Medowie High School Geotech Investigation
Job No: A201024.0124.00
Borehole No: BH208
Depth: 44.6-48.0m
Date: 25/11/24.

0(m) 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

A201024.0124.00 BH208 START CORING 44.6m

45 Coreloss

46

47

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Project: New Medowie High School Geotech Investigation

Job No: A201024.0124.00

Borehole No: BH208

Depth: 48.00 - 48.40m

Date: 25/11/24.

0(m) | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1

48

END OF BOREHOLE @ 48.40m

EXPLANATORY NOTES

Soil and rock descriptions on the logs are generally in accordance with the recommendations of AS1726-2017 Geotechnical Site Investigation.

The order in which descriptions are provided on the logs is as follows:

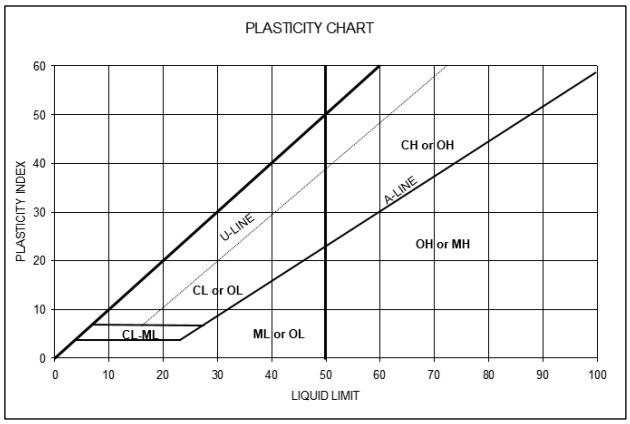
1. SOIL NAME AND GROUP SYMBOLS

Major Divisions		Symbol	Description
COARSE GRAINED SOILS More than 65% of soil excluding oversized fraction is greater than 0.075mm	**GRAVEL** More than 50% of coarse fraction is >2.36mm	GW	Well-graded gravels, gravel-sand mixtures, wide range in grain size and substantial amounts of all intermediate sizes, little or no fines
		GP	Poorly graded gravels, gravel-sand mixtures, predominantly one size or range of sizes with some intermediate sizes missing, little or no fines
		GM	With appreciable amount of non-plastic fines, zero to medium dry strength (gravel-sand-silt mixtures)
		GC	With appreciable amount of plastic fines, medium to high dry strength (gravel-sand-clay mixtures)
	SAND More than 50% of coarse fraction is <2.36mm	SW	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength (Well graded sands, gravelly sands, little or no fines)
		SP	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength (Poorly graded sands and gravelly sands; little or no fines, uniform sands)
		SM	With appreciable amount of non-plastic fines, zero to medium dry strength (silty sands, sand-silt mixtures)
		SC	With appreciable amount of plastic fines, medium to high dry strength (clayey sands, sand-clay mixtures)
FINE GRAINED SOILS More than 35% of soil excluding oversized fraction is less than 0.075mm	Liquid Limit <50%	ML	Inorganic silts of low plasticity (very fine sands, rock flour, sandy clays, silty clays)
		CL, CI	Inorganic clays of low to medium plasticity (gravelly clays, sandy clays, silty clays)
		OL	Organic silts and organic silty clays of low plasticity
	Liquid Limit >50%	MH	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity
		OH	Organic clays of medium to high plasticity
	Highly organic soil	PT	Peat muck and other highly organic soils

2. PARTICLE SIZE CHARACTERISTICS

Fraction	Components	Sub Division	Size (mm)
	Boulders		>200
	Cobbles		63 - 200
Coarse grained soil	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
Fine grained soil	Silt		0.002 - 0.075
	Clay		<0.002

3. PLASTICITY PROPERTIES



4. MINOR COMPONENTS

Coarse Grained Soils		Fine Grained Soils	
% Fines	Modifier	% Coarse	Modifier
<5	Omit or use 'trace'	<15	Omit or use 'trace'
5 - 12	Describe as 'with clay/silt' as applicable	15 - 30	Describe as 'with sand/gravel' as applicable
>12	Prefix soil as 'silty/clayey' as applicable	>30	Prefix soil as 'sandy/gravelly' as applicable

5. MOISTURE CONDITION

Field Identification			
Symbol	**Cohesive soils**	**Symbol**	**Granular soils**
w<PL	Hard and friable – Moisture Content of soils is less than the plastic limit	D	No Cohesion, dry to the touch and free running
w=PL	Feels cool, darkened in colour, can be moulded – Moisture Content is equal to plastic limit	M	Feels cool, darkened in colour, no visible water, tends to cohere
w>PL	Feels cool, darkened in colour, usually soft – Moisture Content is greater than plastic limit	W	Feels cool, darkened in colour, tend to cohere, and visible free water. Usually from below water table

Moisture content of cohesive soils shall be described in relation to plastic limit (PL) for the soils with dry of PL (w<PL); near PL (w=PL); and wet of PL (w>PL). Moisture content of non-cohesive (granular) soils shall be described as dry (D), moist (M), wet (w)

6. DENSITY

Term	Very Loose	Loose	Medium Dense	Dense	Very Dense
Symbol	VL	L	MD	D	VD
SPT (N)	0 - 4	4 - 10	10 - 30	30 - 50	>50
DCP	0 - 1	1 - 3	3 - 8	8 - 15	>15
Density Index (%)	<15	15 - 35	35 - 65	65 - 85	>85

7. CONSISTENCY

Term	Very Soft	Soft	Firm	Stiff	Very Stiff	Hard
Symbol	VS	S	F	St	Vst	H
SPT (N)	0 - 2	2 - 4	4 - 8	8 - 15	15 - 30	>30
DCP	0 - 1	1 - 2	2 - 3	3 - 7	7 - 12	>12
Undrained Shear Strength (kPa)	<12	12 - 25	25 - 50	50 - 100	100 - 200	>200

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ROCK DESCRIPTION - EXPLANATORY NOTES

1. STRENGTH

Term	Log Symbol	Point Load Index IS_{50} (MPa)	Field Guide
Very Low	VL	0.03 - 0.1	Material crumbles under firm blows with sharp end of pick; can be pealed with a knife; too hard to cut a triaxial sample by hand. SPT will refuse. Pieces up to 3 cm thick can be broken by finger pressure. Sandstone is 'sugary' and friable
Low	L	0.1 - 0.3	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150 m long x 40 mm Φ may be broken by hand. Sharp edges of core may be friable and break during handling
Medium	M	0.3 - 1	Readily scored with a knife; piece of core 150 mm long x 50mm Φ can be broken by hand with difficulty
High	H	1 - 3	Can be slightly scratched with a knife. A piece of core 150 mm long x 50 mm Φ cannot be broken by unaided hands but can be broken with a single blow, rock rings under hammer
Very High	VH	3 - 10	Cannot scratch with a knife. Hand specimen breaks with pick after more than one blow, rock rings under hammer
Extremely High	EH	>10	Specimen requires many blows with geo-pick to break through intact material, rock rings under hammer

2. WEATHERING

Classification	Symbol	Description
Residual Soil	RS	Soil derived from the weathering of rock; the mass structure and substance fabric are no longer evident; the soil has not been significantly transported.
Extremely Weathered	XW	Rock is weathered to such an extent that it has 'soil' properties, that is, it either disintegrates or can be remoulded, in water. Fabric of original rock still visible.
Distinctly Weathered	HW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually be iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathering products in pores. In some environments it is convenient to subdivide into Highly Weathered (HW) and Moderately Weathered (MW), with the degree of alteration typically less for MW.
	MW	
Slightly Weathered	SW	Rock is partially discoloured with staining along joints but shows little or no change of strength from fresh rock.
Fresh Rock	FR	Rock shows no sign of decomposition or staining.

3. COMMON DEFECTS IN ROCK MASS

Type	Symbol	Description
Bedding	Be	A surface or crack across which the rock has little or no tensile strength. Parallel or sub-parallel to layering. May be open or closed.
Joint	Jt	A surface or crack with no apparent shear displacement and across which the rock has little or no tensile strength. May be open or closed.
Shear Zone	Sz	Zone of rock material with roughly parallel near planar, curved or undulating boundaries cut by closely spaced joints, shear surface or other defects. Some of the defects are usually curved and intersect to divide the mass into lenticular or wedge-shaped blocks.
Clay Seam	Cs	Seam of soil material with roughly parallel almost planar boundaries, composed of clay.
Crushed Seam Zone	Cz	Seam of material with roughly parallel almost planar boundaries, composed of disorientated, usually angular fragment of the host rock, which may be more weathered than the host rock.
Infilled Seam	Se	Seam of soil material with distinct roughly parallel planar boundaries formed by the migration of soil into an open cavity or joint and must be defined by colour and USC symbols. Infilled seams less than 1 mm thick may be described as a veneer or coating on a joint surface.
Extremely Weathered Seam / Zone	Ewz	Seam of soil material, often with gradational boundaries. Formed by weathering of the rock material in place.

4. DEFECTS SHAPES AND CHARACTERISTICS

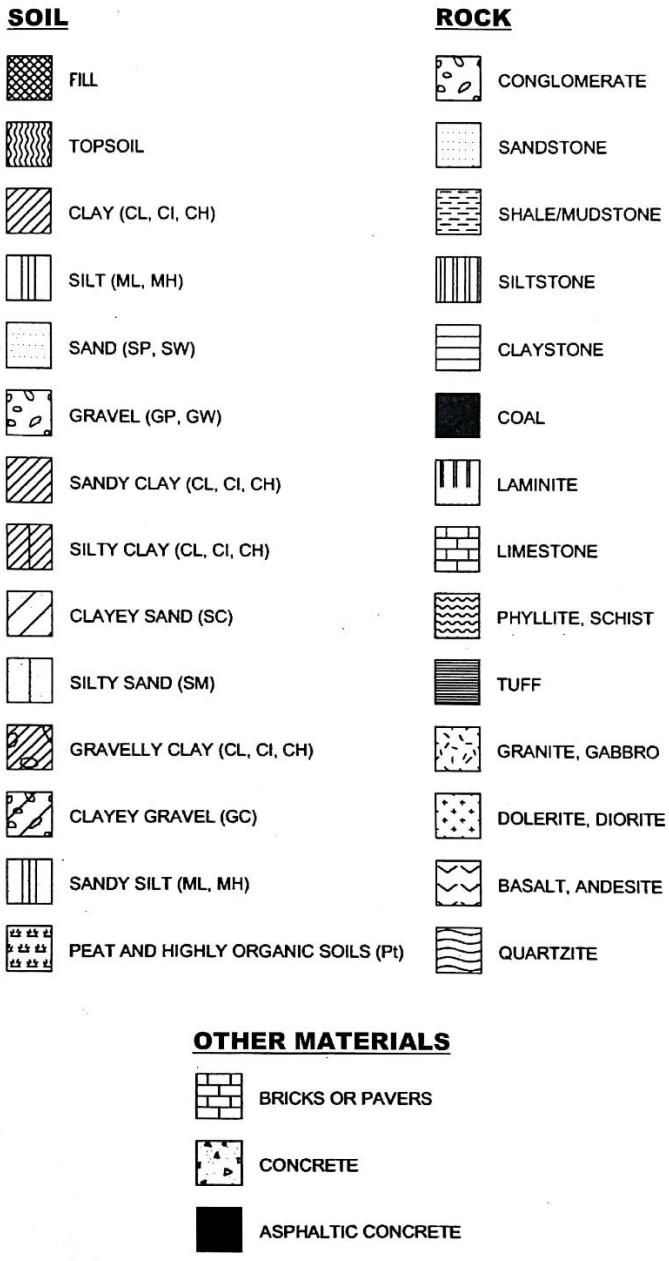
Characteristics	Description
Thickness	Measured in mm normal to the plane of the defect (mm.t).
Inclination	Measured in an exposure as a dip and strike or dip and dip direction. In core measured as an angle from a plane normal to the core axis.
Surface Shape	Described defect surface shape as either: - Planar (Pl) – defect forms a continuous plane without variation in orientation - Curved (Cu) – defect has a gradual change in orientation - Undulating (Un) – a defect has wavy surface - Stepped (St) – a defect has one or more well defined steps. - Irregular (Ir) – a defect with many sharp changes of orientation
Surface Roughness	A description of the defect plane described as: - Rough (Ro)– many small surface irregularities. - Smooth (Sm) – smooth to touch. Few or no surface irregularities. - Polished (Po) – shiny or sheen smooth surface inconsistent with parent rock - Slickensided (Sl) – Grooved or striated surface, usually polished.
Coating	Described defect coating as either: - Clean (Cl) – no visible coating - Stained (St) – no visible coating but surfaces are discoloured - Veneer (Ve) – a visible coating soil or mineral substance, but usually unable to be measured (usually <1 mm), may be called patchy veneer. - Coating (Co) – a visible coating of soil or mineral up to 1mm thick. Thicker soil materials shall be described using appropriate defect terms (e.g. in-filled seam). Thicker rock strength material shall be described as a vein.
Spacing	Measurement of the distance between defects of the same set.

LOG SYMBOLS AND ABREVIATIONS

1. DRILLING AND EXCAVATION METHODS

HA	Hand Auger	**RAB**	Rotary Air Blast	**NMLC**	Diamound Core: 52mm
DT	Diatube Coring	**RC**	Reverse Circulation	**HQ**	Diamound Core: 63mm
NDD	Non-destructive Digging	**PT**	Push Tube	**HMLC**	Diamound Core: 63mm
AD	Auger Driling (ADV: V-Bit; ADT: TC-Bit)	**CT**	Cable Tool Rig	**BH**	Tractor Mounted Backhoe
ADH	Hollow Auger	**JET**	Jetting	**EX**	Tracked Hydraulic Excavator
RD	Rotary blade or drag bit	**WB**	Washbore or Bailer	**EE**	Existing Excavation
RT	Rotary Tricone bit	**NQ**	Diamound Core: 47mm	**HAND**	Excavated by Hand Methods

2. GRAPHIC SYMBOL LEGENDS FOR SOIL AND ROCK



Appendix III – Laboratory Test Results

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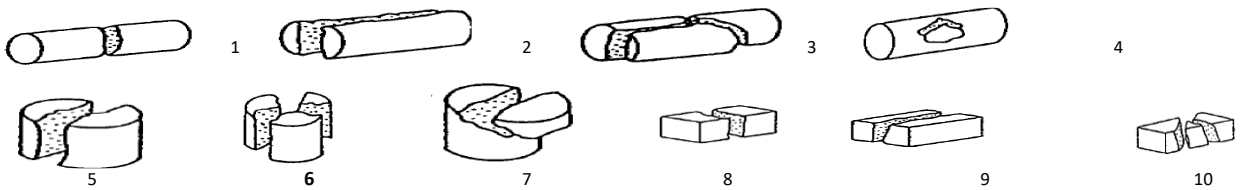
POINT LOAD STRENGTH INDEX REPORT

Client:	SINSW	Job No.	A201024.0124.01
Project:	New Meadowie High School GI	Report No.	A201024.0124.01_A_v1f
Location:	6 Abundance Road, Medowie NSW 2318	Date Tested:	3/12/2024
Moisture Content Condition:	Moist	Storage History:	
Date Sampled:	25/11/2024	Sampled by:	PB
Test Procedure:	☑ AS 4133.4.1 Rock strength tests - Determination of point load strength index		
Sampling:	BH205		
Preparation:	B		

Sample No.	Sample Source (m)	Sample Description	Test Type	Average Width (mm)	Platen Separation (mm)	Failure Load (kN)	Point Load Index Is (Mpa)	Point Load Index $Is_{(50)}$ (Mpa)	Failure Modes
1	46.84	MudStone	Diametral		60.0	0.67	0.19	0.20	1
			Axial	60.0	36.4	0.80	0.29	0.29	5
2	47.84	MudStone	Diametral		60.0	0.80	0.22	0.24	1
			Axial	60.0	36.4	0.77	0.28	0.28	5
3	48.67	MudStone	Diametral		60.0	0.53	0.15	0.16	1
			Axial	60.0	46.8	0.69	0.19	0.21	5
4	49.26	MudStone	Diametral		51.1	1.27	0.49	0.49	1
			Axial	60.0	49.9	1.46	0.38	0.42	5



Notes:

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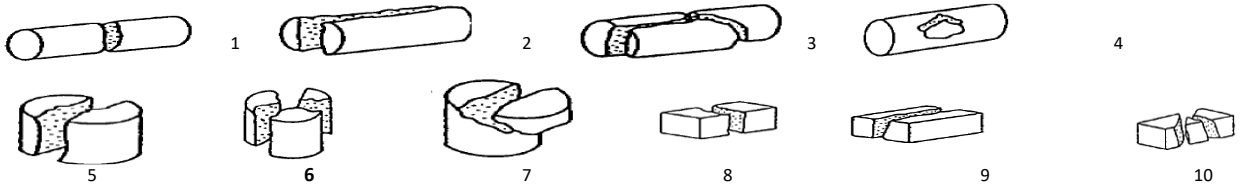
POINT LOAD STRENGTH INDEX REPORT

Client:	SINSW	Job No.	A201024.0124.01
Project:	New Meadowie High School GI	Report No.	A201024.0124.01_A_v1f
Location:	6 Abundance Road, Medowie NSW 2318	Date Tested:	3/12/2024
Moisture Content Condition:	Moist	Storage History:	
Date Sampled:	25/11/2024	Sampled by:	PB
Test Procedure:	☑ AS 4133.4.1 Rock strength tests - Determination of point load strength index		
Sampling:	BH208		
Preparation:	B		

Sample No.	Sample Source (m)	Sample Description	Test Type	Average Width (mm)	Platen Separation (mm)	Failure Load (kN)	Point Load Index Is (Mpa)	Point Load Index $Is_{(50)}$ (Mpa)	Failure Modes
1	46.36	MudStone	Diametral		60.0	0.14	0.04	0.04	1
			Axial	60.0	35.4	0.10	0.04	0.04	6
2	46.69	MudStone	Diametral		60.0	0.16	0.04	0.05	1
			Axial	60.0	40.6	0.11	0.04	0.04	6
3	47.39	MudStone	Diametral		60.0	0.19	0.05	0.06	1
			Axial	60.0	38.5	0.46	0.16	0.16	6
4	47.79	MudStone	Diametral		60.0	1.09	0.30	0.33	1
			Axial	60.0	43.7	0.71	0.21	0.23	5
5	48.05	MudStone	Diametral		60.0	1.11	0.31	0.33	1
			Axial	60.0	43.9	0.89	0.27	0.28	5



Notes:

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