Inland Geotechnical
6 Jones St (PO Box 6118)
Wagga Wagga NSW 2650
t (02) 6931 0511
www.inlandgeo.com.au

19 December 2024

Attention: Nathan Stubberfield
Cabonne Council
99-101 Bank Street
Molong NSW 2866
nathan.stubberfield@cabonne.nsw.gov.au
BY EMAIL

Dear Nathan

Re: Geotechnical Interpretive Report – 255 Casuarina Drive Eugowra NSW 28069

I refer to the written request from yourself to compile a geotechnical interpretive report for a proposed mid-scale solar project at 255 Casuarina Drive Eugowra NSW.

The intended recipient of this report is yourself for use in assessing foundation material for the preliminary design of foundations for the structural and civil work associated with the proposed new mid-scale solar project to be constructed on site. Foundation material is the substrate that supports footings and slabs. It is assumed that third parties will rely on this report for preliminary foundation design, however Inland Geotechnical is required to be consulted if the report is to be used for any other purpose.

Objective and agreed scope

The objective of this geotechnical interpretive report is to document the expressions of professional opinion around the geotechnical characteristics of the site relevant to the project derived from the consideration of relevant available facts, interpretations and analysis and judgement. Geotechnical interpretation is a continuous process and will be updated as more information about the project and ground conditions becomes available.

The agreed scope of works included:

- Where available, review plans and other general related documents provided to us to gain a comprehensive understanding of the site.
- Provide geotechnical interpretation around:
    - Site trafficability.
    - Allowable bearing pressure of foundation material.
    - Unit weight.
    - Cohesion (effective and undrained) of foundation material.
    - Friction angle of foundation material.
    - Skin friction/shaft adhesion of foundation material.
    - Soil aggressivity.

    - Earthworks.
    - Design California bearing ratio.
- Supply a geotechnical interpretive report by reference to the Australian Standard 1726 (2017).

Reference to the data upon which the interpretation has been relied upon

- Geotechnical Data Report (Report 204).
- AS4678 (2002) Earth-retaining structures. (effective internal friction angles and characteristic effective cohesion).
- Look, B.G. (2014). Handbook of Investigation and Design Tables. (2nd Ed). CRC Press. (undrained cohesion, shaft adhesion, skin friction).
- Standards Australia (2009). Piling – Design and Installation (AS2159).
- Standards Australia (2007). Guidelines on earthworks for commercial and residential developments (AS3798).
- Stockwell, M.J. (1977), Determination of Allowable Bearing Pressures Under Small Structures, New Zealand Engineering, Vol. 32, No. 6, Jun 1977: 132-135.

An interpretation of the site geology and the development of the geotechnical model

The site geology generally comprised of the following:

- Brown-red low plasticity silty clay topsoil (stony).
- A colluvial moist to wet red low to medium plasticity soft to firm clay with sand.
- A colluvial moist to dry red low to medium plasticity stiff to very stiff clay with sand.
- A residual dry red to brown-yellow low to medium plasticity very stiff to hard clay with sand.

Groundwater was not encountered in bore holes during the investigation.

An existing monitoring bore was identified downslope of the existing sewage treatment plant pond (east of BH07). A standing water level (SWL) of 8.4m below top of casing (BTOC) was observed at the time of the investigation. The casing stickup height was measured at 0.66m above ground level and the total bore depth was 17.4m BTOC. Bore construction details are unknown. From these observations, it is considered unlikely that groundwater will be encountered during construction.

A summary of the geotechnical properties of the ground applicable to the project

Based on laboratory results of this project the following interpretations can be made.

- All topsoil is unsuitable as foundation material which has a high percentage of silt organic content which has a low wet strength.
- The underlying wet colluvial clay is considered unsuitable or use as founding materials owing to a low wet bearing strength.
- The underlying dry colluvial and residual clay material is suitable to be used as foundation material. Based on laboratory results and interpretation, this soil is assessed to have a moderate reactivity, 20-40mm in movement due to moisture variation given foundations are founded into clay material with adequate bearing pressure.
- Bearing pressure of the colluvial and residual clay material increases with depth (see below table).

- The underlying dry colluvial and residual clay is assessed to be suitable for pavement subgrade with a conservative design California bearing ratio of **5** given potential geotechnical risks associated with the project are considered by the design engineer. This includes management of materials that are unsuitable due to existing moisture conditions, these materials may become suitable following moisture conditioning.

An engineering interpretation of the implications of the ground conditions for the project

Based on the field assessment, laboratory data, data interpretation, and assumptions therein, the following preliminary geotechnical parameters can be provided for soils in the site geology.

Strata	Allowable Bearing Pressure	Unit Weight, γ	Undrained cohesion, c_u	Effective cohesion, c'	Effective friction Angle, ϕ'	Shaft Adhesion	
						Bored*	Driven^
	(kPa)	(kN/m^3)	(kPa)	(kPa)	(deg)	(kPa)	(kPa)
CLAY – Soft to firm	36-100	18	25-50	0-5	17-25	11-22.5	25-50
CLAY – Stiff to very stiff	100-150	19	50-100	0-5	17-25	22.5-45	37.5-75
CLAY – Very stiff to hard	150-200	20	100-200	0-5	17-25	45-90	25-50

*Assumes non-fissured soils.

^Conservative values are recommended due to wet soft clays over hard clays due to smear effects for drag down.

Soil Aggressivity:

By reference to AS2159 (2009), results of soil chemical analysis for soil aggressivity to steel and concrete structures indicate:

- Soils tested are mild to non-aggressive to concrete.
- Soils tested are mild to non-aggressive to steel.

Site trafficability:

At the time of the field investigation trafficability of the site was good with a 4WD and trailer mounted drilling rig, noting that heavier equipment may have proven difficult to manoeuvre owing to upper soil layers being saturate.

Trafficking problems may arise for construction traffic and heavy machinery following prolonged and significant precipitation events and may remain poor for extended periods of time. Removal of vegetation and ground cover, disturbance of surface and near surface soils and excavation for construction purposes may all contribute to further decline in trafficability on site.

On site trafficability may be improved by:

- Controlling water seepage/drainage by diverting runoff away from the construction area.
- Adequate compaction of fill materials placed following excavation, especially trenching.
- Providing all weather construction access tracks and limiting construction traffic to those tracks. Tracks and working surfaces may consist of crushed concrete type materials, larger size gravels and/or imported sub-base materials.

Earthworks:

Natural subgrade materials and imported fill materials for the preparation of pavement subgrade should be placed, compacted and tested to an engineering specification in general accordance with recommendations outlined in AS3798-2007, 'Guidelines on Earthworks for Commercial and Residential Developments' or to Council specification. As following is a general summary of AS3798-2207 for site preparation and the placement of controlled fill:

- Remove existing topsoil, uncontrolled fill, vegetation, root affected or other potentially deleterious materials from proposed fill area.
- Earthworks are ideally carried out in dry weather conditions where possible.
- Provisions are made for effective surface water diversion away from outside the pavement works site.
- It is possible that site preparation could expose wet subgrade material, particularly if excavation is carried out after a prolonged period of rainfall. Trafficability in the medium plasticity clay material for wheeled vehicles can be expected to be slightly difficult during and following rainfall. If material wets up during construction, it should be scarified, dried and re-compacted.
- The exposed natural soils should then be scarified to a depth of about 200mm, moisture conditioned to within ±2% of Standard Optimum Moisture Content (SOMC) and then re-compacted to a standard maximum dry density (SMDD) of 98% in accordance with AS1289 5.1.1, 5.4.1 or 5.7.1 or to Council specifications.
- Any soft or weak areas identified during the compaction process that do not respond to further compaction should be removed and replaced with suitable site materials in layers not exceeding 250mm thickness and should be compacted to the above criteria.
- If required, the subgrade should be stabilised as recommended.
- Subsequent layers of pavement materials should be placed in uniform layers as specified, moisture conditioned and compacted to a minimum of 98% SMDD for structural fill under proposed sheds. Compaction criteria for pavement should be adopted as recommended below. The compacted layers are to be tested by a relevant NATA accredited facility.

An assessment of potential geotechnical risk to the project

- Foundation materials may be encountered on site outside of the tested areas that are different to that encountered at the tested locations. If any unconsolidated or saturated foundation materials are encountered during excavation, or conditions that are not alike the above description, the site supervisor should be informed, the work stopped, and this office be contacted immediately for further evaluation.
- There is a risk that bearing pressure is mischaracterised with terms often used interchangeably without being fully understood. Therefore, in this report the allowable bearing pressure has been provided. It is defined as the maximum allowable loading that allows for shear effects (not settlement) with a safety factor of three, for one and two storey buildings, portal framed buildings, and water towers, Stockwell (1997). The allowable bearing pressure is based on a visual and tactile assessment of the soil as well as in situ penetration testing. It is well established that penetration tests are not repeatable and are preferably used to establish the changes in strength of the soil profile rather than as an absolute measure from which the allowable bearing capacity may be characterised. The bearing pressure reported is the likely range under normal soil moisture conditions (those caused by seasonal and regular climatic effects, effect of the building and subdivision, and normal garden conditions without abnormal moisture conditions), noting that cohesive soils gain strength as they dry out and lose strength as they saturate. This data is preliminary in nature and can be updated with further investigation and assessment once the design is suitably advanced.
- There is a risk that cohesion is mischaracterised with terms often used interchangeably without being fully understood. Therefore, in this report the characteristic effective cohesion of a soil (c') and undrained cohesion (c_u) have been provided (Table D4 AS 4678-2002 and Table 2.16 of Look (2014)). The cohesion is based on a visual and tactile assessment of the soil, the Atterberg limits, as well as in situ penetration testing. The cohesion provided in this report is preliminary in nature and can be updated with further laboratory testing (triaxial shear) and assessment once the building design is suitably advanced.
- In this report, the effective friction angle (ϕ') has been provided (Table D4 AS 4678-2002). The effective friction angle is based on a visual and tactile assessment of soil, Atterberg limits, as well as in situ penetration testing. Effective friction angles have been provided as a range and the lower bound should be used unless higher values can be substantiated by further laboratory testing.
- If earthworks on site are not conducted to the Australian Standard 3798 (2011) Guidelines on Earthworks for Commercial and Residential Developments, there is the risk of compromising the suitability of the soil found on site for foundations.
- The information contained in this report has been extracted from sources believed to be reliable and accurate. Inland Geotechnical will not assume any responsibility for the misinterpretation of information supplied in this report. The accuracy and reliability of recommendations identified in this report need to be evaluated with due care according to individual circumstances. The results of the assessment undertaken are an overall representation of the conditions encountered. It should be noted that the recommendations and findings in this report are based solely upon the said site location and the ground level conditions at the time of testing. The properties of the soil within the location may change due to variations in ground conditions outside of the tested area. The author has no control or liability over site variability that may warrant further investigation that may lead to significant design changes.

If you have any queries about the contents of this geotechnical data report, please contact the undersigned.

Yours sincerely

Alexander Rudd BSc
Certified Professional Soil Scientist
MAGS MEIANZ MSSA

Inland Geotechnical
6 Jones St (PO Box 6118)
Wagga Wagga NSW 2650
t (02) 6931 0511
www.inlandgeo.com.au

19 December 2024

Attention: Nathan Stubberfield
Cabonne Council
99-101 Bank Street
Molong NSW 2866
Nathan.stubberfield@cabonne.nsw.gov.au
BY EMAIL

Dear Nathan

Re: Geotechnical Data Report – 255 Casuarina Drive Eugowra NSW 2806

I refer to the written request from yourself to compile a geotechnical data report for a proposed new mid-scale solar project at 255 Casuarina Drive Eugowra NSW. A site location map and plan of the proposed development can be seen in **Attachment A**.

The intended recipient of this report is yourself for use in the preliminary design of foundations for the structural and civil work associated with the proposed new mid-scale solar project to be constructed on site. It is assumed that third parties will rely on this report for preliminary foundation design, however Inland Geotechnical is required to be consulted if the report is to be used for any other purpose.

Objective and agreed scope

The objective of this geotechnical data report is to document the procedures employed and the data collected, and despite the fact that soil and rock logging has an interpretive nature attached to it, this geotechnical data report is considered predominantly factual.

The agreed scope of works included:

- Where available, review plans and other general related documents provided to us to gain a comprehensive understanding of the site.
- Drill seven boreholes to 2.5m depth (or refusal) at locations determined by yourself and undertake a visual and tactile assessment of investigated locations by reference to the Australian Standard 1726 (2017) Geotechnical Site Investigations.
- Test representative soil samples for moisture content, soil aggressivity, field electrical resistivity, Atterberg limits, maximum dry density, and California bearing ratio in a NATA accredited laboratory to the relevant Australian Standards and Transport for NSW test methods.
- Supply a geotechnical data report by reference to the Australian Standard 1726 (2017).

Location and description of the project site and its history

The project site consists of a 4ha (approx.) solar array and a 1ha laydown area (approx.) within a land parcel with a real property description of Lot 85 DP 870963. From a review of available historical aerial photography and satellite imagery (1965-2023), the project site appears to be an undeveloped agricultural land. The Eugowra sewage treatment ponds were constructed to the north-east of the project site sometime between 1993 and 2005(**Attachment B**).

Plan showing investigation locations

A plan of the investigation locations can be seen in **Attachment C**.

Description of the regional and local geology

The regional geology is undulating to occasionally rolling rises of Devonian Eugowra granite lying above the alluvial plains and terraces of the Lachlan River and associated tributaries. The local geology consists of deep colluvial, and residual soils derived from upslope and underlying Devonian Eugowra granites.

Records of fieldwork, including methods and results

Seven boreholes were drilled using a power auger approximately within the project site, five within the prosed solar array and two within the proposed hardstand. Grab samples were taken at depths of 0.3-0.4m and 0.9-1.0m and bulk disturbed samples were taken from 0.4-1.0m below ground level in accordance with sampling method AS1289.1.2.1 (1998) Methods of testing soils for engineering purposes, sampling and preparation of soils, disturbed samples, standard method.

Field electrical resistivity testing (ERT) was undertaken at one location in accordance with the 4-Pin Wenner Array method. Field electrical resistivity measurements were undertaken at six probe spacings being 0.5, 1, 2, 4, 8, 16 & 32m at in the N-S and E-W directions.

The log sheets including the visual and tactile assessment of the surface and subsurface can be seen in **Attachment D**. Photographs of the site and soil can be seen in **Attachment E**.

Laboratory testing and summary of results

Tabulated laboratory results can be seen in **Attachment F**.

Records of the field ERT can be seen in **Attachment G**.

Laboratory reports can be seen in **Attachment G**.

If you have any queries about the contents of this geotechnical data report, please contact the undersigned.

Yours sincerely

Alexander Rudd BSc
Certified Professional Soil Scientist
MAGS MEIANZ MSSA

Disclaimer

The information contained in this report has been extracted from sources believed to be reliable and accurate. Inland Geotechnical will not assume any responsibility for the misinterpretation of information supplied in this report. The accuracy and reliability of recommendations identified in this report need to be evaluated with due care according to individual circumstances. The results of the assessment undertaken are an overall representation of the conditions encountered. It should be noted that the recommendations and findings in this report are based solely upon the said site location and the ground level conditions at the time of testing. The properties of the soil within the location may change due to variations in ground conditions outside of the tested area. The author has no control or liability over site variability that may warrant further investigation that may lead to significant design changes.

Notice of Copyright

Attachments

A. Site location map and development plan
B. Aerial photography and satellite imagery
C. Plan of the investigation locations
D. Log sheets
E. Photographs
F. Tabulated results
G. Laboratory and field test reports

Attachment A : *Site location and development plan*

255 Casuarina Drive Eugowra NSW 2806

Geotechnical Data Report
Report No. 204
December 2024
Google Earth Pro image 2023

Legend

Project site

Escort Way
Broad St
Eugowra
Pye St
Nanima St
Nangar Rd
Nangar Rd
Casuarina Dr
Paytens Bridge Rd
Paytens Bridge Rd
Casuarina Dr
Casuarina Dr

Google Earth
Image © 2024 Airbus

N

1 km

255 Casuarina Drive Eugowra NSW 2806

Geotechnical Data Report
Report No. 204
December 2024
Google Earth Pro image 2023

Legend

Project site

Casuarina Dr

Hardstand

Solar array

Paytens Bridge Rd

Casuarina Dr

Google Earth

Image © 2024 Airbus

N

200 m

Mid-scale Solar Project Eugowra NSW

Write a description for your map.

Legend

- Feature 1
- New OH span & UGOH
- Private GMK recloser
- tree screening
- Untitled Path
- Water

Water

Mandagery Creek

0812 041

70-60491

0811 041

Private GMK recloser

0805 041

Paytens Bridge Rd

tens Bridge Rd

Casuarina Dr

Google Earth

Image © 2024 Airbus

N

300 m

Attachment B : *Aerial photographs and satellite imagery*

255 Casuarina Drive Eugowra NSW 2806

Geotechnical Data Report
Report No. 204
December 2024
Aerial photograph 1993

Legend

Project site

Casuarina Dr

Paytens Bridge Rd

Casuarina Dr

Google Earth

Image © 2024 Airbus

N

200 m

255 Casuarina Drive Eugowra NSW 2806

Geotechnical Data Report
Report No. 204
December 2024
Google Earth Pro image 2005

Legend

Project site

Casuarina Dr

Paytens Bridge Rd

Casuarina Dr

Google Earth

Image © 2024 Airbus

N

200 m

Attachment C : *Plan of the investigation locations*

255 Casuarina Drive Eugowra NSW 2806

Geotechnical Data Report
Report No. 204
December 2024
Google Earth Pro image 2023

Legend

- Investigation location
- Project site

Casuarina Dr

BH01
BH02
BH03
BH04
BH05
BH06
BH07

Paytens Bridge Rd

Casuarina Dr

Google Earth

Image © 2024 Airbus

N

200 m

Attachment D : *Log sheets*

Inland Geotechnical
6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH01

UTM	: 55H	Drill Rig	: Christie (3.1m Mast)	Job Number	: 204
Easting (m)	: 626,702.00	Driller Supplier	: Inland Geo	Client	: Cabonne Council
Northing (m)	: 6,298,031.00	Logged By	: A.Rudd	Project	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	Reviewed By	: A.Rudd	Location	: 255 Casuarina Drive, Eugowra NSW 2806
Total Depth	: 2.5 m BGL	Date	: 02/12/2024	Loc Comment	:

Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows per 100mm
100mm SFA (Carbide Tip)	0.3	Topsoil	CL: Silty CLAY, brown red, low plasticity, soft, organic, w > pl to w ≈ ll, trace fine to medium grained sand.		1
					2
					1
	0.50	Colluvium	CL-CI: CLAY, red, low to medium plasticity, stiff to very stiff, inorganic, w ≈ pl to w < pl, with medium to coarse grained sand.	A	2
					9
					13
					11
					11
					15
	1			B	20
	1.1	Residual	CL-CI: CLAY, red, low to medium plasticity, very stiff to hard, inorganic, w < pl, trace medium to coarse grained sand.		
	1.50				
	1.8		CL-CI: CLAY, brown yellow, low to medium plasticity, very stiff to hard, inorganic, w < pl, with medium to coarse grained sand.		
	2				
	3		**BH01 Terminated at 2.5m**		

DCP Graph

0 5 10 15 20 25

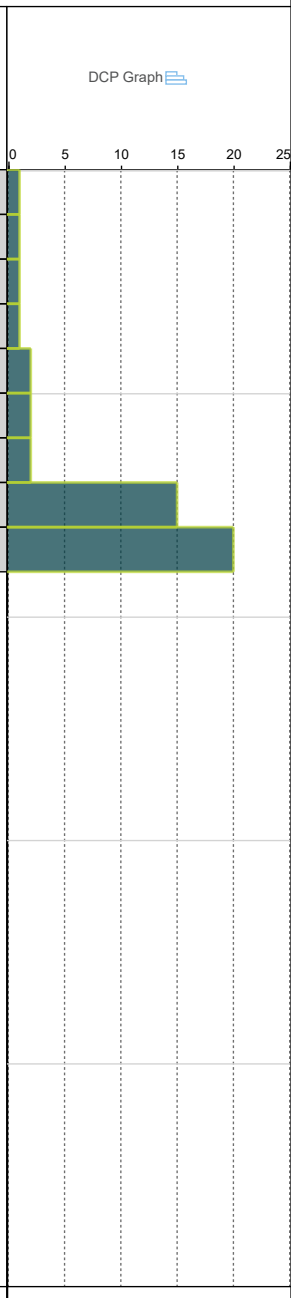
Inland Geotechnical
6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH02

UTM	: 55H	**Drill Rig**	: Christie (3.1m Mast)	**Job Number**	: 204
Easting (m)	: 626,821.00	**Driller Supplier**	: Inland Geo	**Client**	: Cabonne Council
Northing (m)	: 6,298,033.00	**Logged By**	: A.Rudd	**Project**	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	**Reviewed By**	: A.Rudd	**Location**	: 255 Casuarina Drive, Eugowra NSW 2806
Total Depth	: 2.5 m BGL	**Date**	: 02/12/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows per 100mm
100mm SFA (Carbide Tip)	0.3	Topsoil	CL: Silty CLAY, brown red, low plasticity, soft, organic, w > pl to w ≈ ll, trace fine to medium grained sand.		1 1 1
	0.6	Colluvium	CL-CI: CLAY, brown red, low to medium plasticity, soft to firm, inorganic, w ≈ pl to w < pl to w > pl, with medium to coarse grained sand.	C	1
			As above, red, stiff to very stiff, w ≈ pl to w < pl to w < pl.		2 2 2 15 20
	1.1	Residual	CL-CI: CLAY, yellow red, low to medium plasticity, very stiff to hard, inorganic, w < pl, trace medium to coarse grained sand.	D	
	1.8		CL-CI: CLAY, brown yellow, low to medium plasticity, very stiff to hard, inorganic, w < pl, with medium to coarse grained sand.		
			BH02 Terminated at 2.5m		



Inland Geotechnical

6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH03

UTM	: 55H	Drill Rig	: Christie (3.1m Mast)	Job Number	: 204
Easting (m)	: 626,759.00	Driller Supplier	: Inland Geo	Client	: Cabonne Council
Northing (m)	: 6,297,978.00	Logged By	: A.Rudd	Project	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	Reviewed By	: A.Rudd	Location	: 255 Casuarina Drive, Eugowra NSW 2806
Total Depth	: 2.5 m BGL	Date	: 02/12/2024	Loc Comment	:

Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows per 100mm
100mm SFA (Carbide Tip)	0.3	Topsoil	CL: Silty CLAY, brown red, low plasticity, soft, organic, w > pl to w ≈ ll, trace fine to medium grained sand.		1
					1
					1
	0.6	Colluvium	CL-CI: CLAY, brown red, low to medium plasticity, soft to firm, inorganic, w < pl to w > pl, with medium to coarse grained sand.	E	1
					1
					1
			As above, red, stiff to very stiff, w ≈ pl to w < pl to w < pl.		3
					11
					12
	1.1			F	14
		Residual	CL-CI: CLAY, red, low to medium plasticity, very stiff to hard, inorganic, w < pl, trace medium to coarse grained sand.		
	1.8		CL-CI: CLAY, brown yellow, low to medium plasticity, very stiff to hard, inorganic, w < pl, with medium to coarse grained sand.		
			BH03 Terminated at 2.5m		

DCP Graph: 0, 5, 10, 15, 20, 25

0.50, 1, 1.50, 2, 3

Inland Geotechnical
6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH04

UTM	: 55H	**Drill Rig**	: Christie (3.1m Mast)	**Job Number**	: 204
Easting (m)	: 626,699.00	**Driller Supplier**	: Inland Geo	**Client**	: Cabonne Council
Northing (m)	: 6,297,922.00	**Logged By**	: A.Rudd	**Project**	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	**Reviewed By**	: A.Rudd	**Location**	: 255 Casuarina Drive, Eugowra NSW 2806
Total Depth	: 2.5 m BGL	**Date**	: 02/12/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows per 100mm
100mm SFA (Carbide Tip)	0.3	Topsoil	CL: Silty CLAY, brown red, low plasticity, soft, organic, w > pl to w ≈ ll, trace fine to medium grained sand.		1 1 2
	0.6	Colluvium	CL-CI: CLAY, brown red, low to medium plasticity, soft to firm, inorganic, w < pl to w > pl, with medium to coarse grained sand.	G	1 1
			As above, red, stiff to very stiff, w ≈ pl to w < pl to w < pl.		3 3 5 20
	1.1	Residual	CL-CI: CLAY, red, low to medium plasticity, very stiff to hard, inorganic, w < pl, trace medium to coarse grained sand.	H	
	2.3		CL-CI: CLAY, brown yellow, low to medium plasticity, very stiff to hard, inorganic, w < pl, with medium to coarse grained sand.		
			BH04 Terminated at 2.5m		

DCP Graph

0 5 10 15 20 25

Inland Geotechnical

6 Jones St, Wagga Wagga

Phone: 02 6931 0511

Geotechnical Log - Borehole

BH05

UTM	: 55H	Drill Rig	: Christie (3.1m Mast)	Job Number	: 204
Easting (m)	: 626,823.00	Driller Supplier	: Inland Geo	Client	: Cabonne Council
Northing (m)	: 6,297,923.00	Logged By	: A.Rudd	Project	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	Reviewed By	: A.Rudd	Location	: 255 Casuarina Drive, Eugowra NSW 2806
Total Depth	: 2.5 m BGL	Date	: 02/12/2024	Loc Comment	:

Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows per 100mm
100mm SFA (Carbide Tip)	0.3	Topsoil	CL: Silty CLAY, brown red, low plasticity, soft, organic, w > pl to w ≈ ll, trace fine to medium grained sand.		1
					1
					1
	0.6	Colluvium	CL-Cl: CLAY, brown red, low to medium plasticity, soft to firm, inorganic, w < pl to w > pl, with medium to coarse grained sand.	I	1
					2
					2
			As above, red, stiff to very stiff, w ≈ pl to w < pl.		6
					8
					10
				J	12
	1.1				20
		Residual	CL-Cl: CLAY, red, low to medium plasticity, very stiff to hard, inorganic, w < pl, trace medium to coarse grained sand.		
	2.3		CL-Cl: CLAY, brown yellow, low to medium plasticity, very stiff to hard, inorganic, w < pl, with medium to coarse grained sand.		
			BH05 Terminated at 2.5m		

DCP Graph

0 5 10 15 20 25

0.50 1 1.50 2 3

Inland Geotechnical
6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH06

UTM	: 55H	**Drill Rig**	: Christie (3.1m Mast)	**Job Number**	: 204
Easting (m)	: 626,936.00	**Driller Supplier**	: Inland Geo	**Client**	: Cabonne Council
Northing (m)	: 6,298,096.00	**Logged By**	: A.Rudd	**Project**	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	**Reviewed By**	: A.Rudd	**Location**	: 255 Casuarina Drive, Eugowra NSW 2806
Total Depth	: 2.5 m BGL	**Date**	: 02/12/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows per 100mm
100mm SFA (Carbide Tip)	0.3	Topsoil	CL: Silty CLAY, brown red, low plasticity, soft, organic, w > pl to w ≈ ll, trace fine to medium grained sand.		1
					1
					1
	0.50	Colluvium	CL-CI: CLAY, brown red, low to medium plasticity, soft to firm, inorganic, w ≈ pl to w < pl to w > pl, with medium to coarse grained sand.		1
	0.6		As above, red, stiff to very stiff, w ≈ pl to w < pl to w < pl.	K	1
	1				3
					4
					12
	1.1	Residual	CL-CI: CLAY, yellow red, low to medium plasticity, very stiff to hard, inorganic, w < pl, trace medium to coarse grained sand.		16
	1.50				
	1.8		CL-CI: CLAY, red yellow, low to medium plasticity, very stiff to hard, inorganic, w < pl, with medium to coarse grained sand.		
	2				
			BH06 Terminated at 2.5m		
	3				

DCP Graph: 0 5 10 15 20 25

Inland Geotechnical
6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH07

UTM	: 55H	**Drill Rig**	: Christie (3.1m Mast)	**Job Number**	: 204
Easting (m)	: 626,978.00	**Driller Supplier**	: Inland Geo	**Client**	: Cabonne Council
Northing (m)	: 6,298,049.00	**Logged By**	: A.Rudd	**Project**	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	**Reviewed By**	: A.Rudd	**Location**	: 255 Casuarina Drive, Eugowra NSW 2806
Total Depth	: 2.5 m BGL	**Date**	: 02/12/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows per 100mm
100mm SFA (Carbide Tip)	0.3	Topsoil	CL: Silty CLAY, brown red, low plasticity, soft, organic, w > pl to w ≈ ll, trace fine to medium grained sand.		1 1 1
	0.6	Colluvium	CL-CI: CLAY, brown red, low to medium plasticity, soft to firm, inorganic, w ≈ pl to w < pl to w > pl, with medium to coarse grained sand.	L	1 15 20
	1.1		As above, red, stiff to very stiff, w ≈ pl to w < pl to w < pl.		
	1.8	Residual	CL-CI: CLAY, yellow red, low to medium plasticity, very stiff to hard, inorganic, w < pl, trace medium to coarse grained sand.		
			CL-CI: CLAY, red yellow, low to medium plasticity, very stiff to hard, inorganic, w < pl, with medium to coarse grained sand.		
			BH07 Terminated at 2.5m		

DCP Graph: 0 5 10 15 20 25

Attachment E : *Site photographs*

Photograph 1: The site. Photograph of the proposed solar array location taken facing east from northwest corner of proposed solar array.

Photograph 2: The site. Photograph of the proposed solar array location taken facing south southeast from northwest corner of proposed solar array.

Photograph 3: The site. Photograph of the proposed hardstand area taken facing northwest from groundwater monitoring bore. Location of BH07 shown.

Photograph 4: Groundwater bore to the northwest (downslope) of the existing sewer treatment plant. Photograph facing southeast toward pond wall.

Photograph 5: The sampling method used on site – Power auger.

Photograph 6: The general soil profile on site to 2.5m.

Photograph 7: General arrangement of field electrical resistivity testing.

Attachment F : *Tabulated results*

Page: 1 of 1
Job number: 204
Project: Geotechnical data report - 255 Casuarina Drive Eugowra NSW

	Sample date	2/12/24	2/12/24	2/12/24	2/12/24	2/12/24	2/12/24	2/12/24	2/12/24	2/12/24	2/12/24	2/12/24	2/12/24						
	Sample location	BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04	BH05	BH05	BH06	BH07						
	Sample ID	2067A	2067B	2067C	2067D	2067E	2067F	2067G	2067H	2067I	2067J	2067K	2067L						
	Sample depth (m)	0.3-0.4	0.9-1.0	0.3-0.4	0.9-1.0	0.3-0.4	0.9-1.0	0.3-0.4	0.9-1.0	0.3-0.4	0.9-1.0	0.4-1.0	0.4-1.0						
Test	**Unit**	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Moisture content	%	13.3	13.1	14.7	10.2	14.3	10.1	16.6	13.4	14.1	11.3	9.2	11.1	-	-	-	-	-	-
Liquid limit	%	32	42	31	39	30	34	36	46	30	40	39	36	-	-	-	-	-	-
Plastic limit	%	10	16	12	14	11	14	11	15	9	15	12	12	-	-	-	-	-	-
Plasticity index	%	22	26	19	25	19	20	25	31	21	25	27	24	-	-	-	-	-	-
Linear shrinkage	%	11.0	13.0	11.0	12.5	11.0	11.0	12.5	14.5	10.0	13.0	-	-	-	-	-	-	-	-
Shrink swell index	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum dry density	t/m^3	-	-	-	-	-	-	-	-	-	-	1.94	1.86	-	-	-	-	-	-
Optimum moisture content	%	-	-	-	-	-	-	-	-	-	-	11.5	13.5	-	-	-	-	-	-
California bearing ratio	%	-	-	-	-	-	-	-	-	-	-	9	9	-	-	-	-	-	-
California bearing ratio (swell)	%	-	-	-	-	-	-	-	-	-	-	0.0	0.0	-	-	-	-	-	-
19mm passing	%	100	100	100	100	100	100	100	100	100	100	-	-	-	-	-	-	-	-
13.2mm passing	%	100	100	100	100	100	100	100	100	100	100	-	-	-	-	-	-	-	-
9.5mm passing	%	100	100	100	100	100	100	100	100	100	100	-	-	-	-	-	-	-	-
6.7mm passing	%	100	100	100	100	100	100	100	100	100	100	-	-	-	-	-	-	-	-
4.75mm passing	%	100	100	100	99	100	100	100	100	100	99	-	-	-	-	-	-	-	-
2.36mm passing	%	99	98	98	95	99	97	99	98	99	96	-	-	-	-	-	-	-	-
0.425mm passing	%	86	85	76	71	81	75	86	86	79	76	-	-	-	-	-	-	-	-
0.075mm passing	%	74	72	64	61	67	60	74	76	66	64	-	-	-	-	-	-	-	-
0.0135mm passing	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Emerson class number	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Falling Head Permeability	m/sec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	-	6.5	7.4	6.1	6.4	6.2	6.5	6.3	7.1	6.7	7.9			-	-	-	-	-	-
EC (1:2)	µS/cm	28	130	27	46	19	74	39	56	31	230			-	-	-	-	-	-
Resistivity (1:2)	ohm cm	35000	7700	37000	22000	52000	14000	26000	18000	32000	4400			-	-	-	-	-	-
Chloride	mg/kg	1.7	<0.25	2.0	3.6	1.5	6.6	3.0	1.1	1.3	0.96			-	-	-	-	-	-
Sulphate	mg/kg	9.5	1.2	9.2	18.0	3.7	24.0	3.1	6.9	2.0	3.8	-	-	-	-	-	-	-	-

Attachment G : *Laboratory and field test reports*

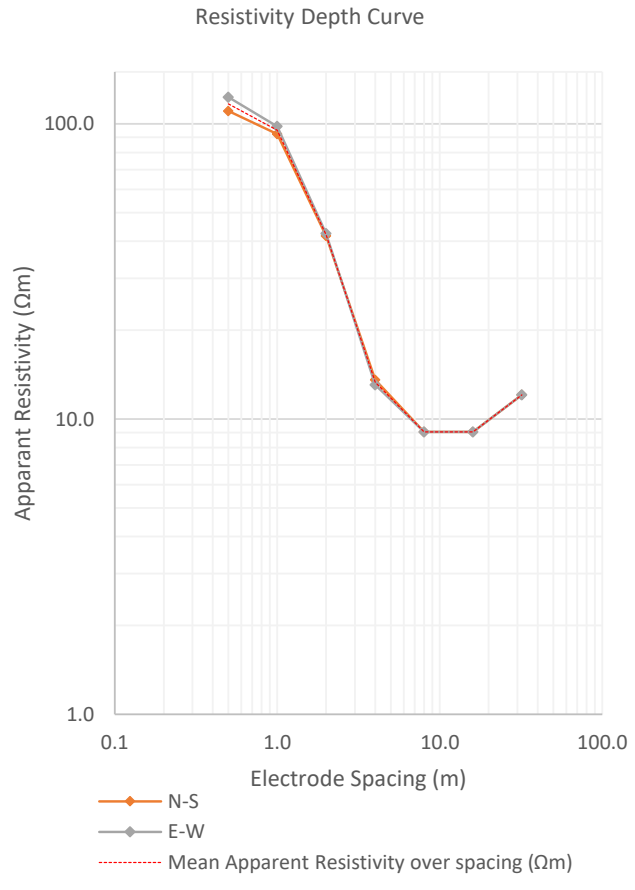
Inland Geotechnical Pty Ltd
PO Box 6118
6 Jones St, Wagga Wagga NSW 2650
Ph: (02) 69 310 511
e: admin@inlandgeo.com.au

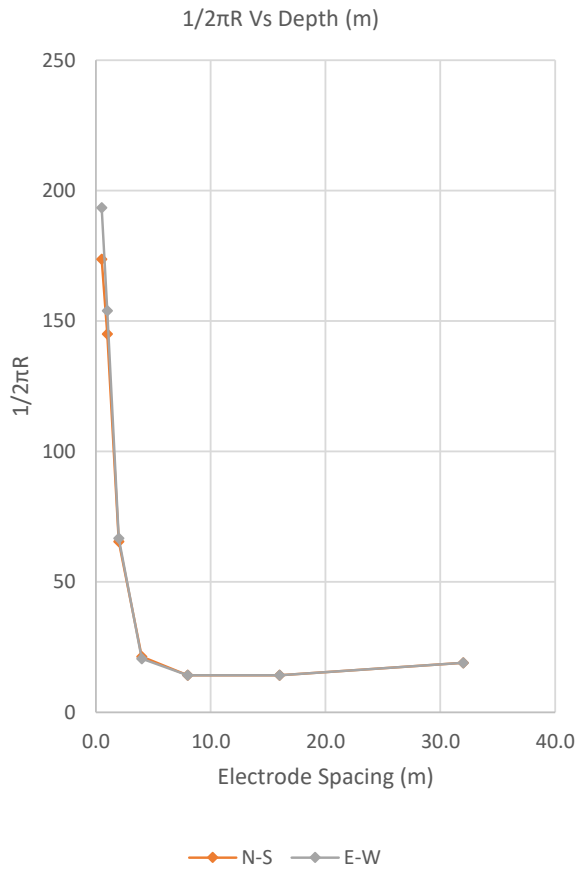
A. Rudd
18/12/2024

Job Number:	204	**Test ID:**		204-1
Client:	Cabonne Council	**Centrepoint Location: (MGAGD94 z55H)**	**Easting:**	626759
Project:	255 Casuarina Drive		**Northing:**	6297978
Test Equipment Used		**Environmental Conditions**		
Instrument	Earth Resistance Tester	**Weather Conditions**		Sunny
Model/Asset Number	AEMC 6471	**Soil Moisture Condition**		Moist
Serial Number	30559	**Soil Type**		Clay

Apparent Resistivity (Ωm)

Electrode spacing = a (m)	N-S	N-S*	E-W	E-W*	NE-SW	NE-SW*	NW-SE	NW-SE*	Mean Apparent Resistivity over spacing (Ωm)
	R = ρ (Ωm)	R* = ρ (Ωm)	R = ρ (Ωm)	R* = ρ (Ωm)	R = ρ (Ωm)	R* = ρ (Ωm)	R = ρ (Ωm)	R* = ρ (Ωm)	
0.5	110.6	-	123.2	-	-	-	-	-	116.87
1.0	92.4	-	98.0	-	-	-	-	-	95.19
2.0	41.7	-	42.5	-	-	-	-	-	42.10
4.0	13.6	-	13.1	-	-	-	-	-	13.32
8.0	9.0	-	9.0	-	-	-	-	-	9.05
16.0	9.0	-	9.0	-	-	-	-	-	9.05
32.0	12.1	-	12.1	-	-	-	-	-	12.06
Mean Apparent Resistivity (Ωm)	41.20	-	43.84	-	-	-	-	-	-





Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067A
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 13/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH01, Depth: 0.3-0.4m**
Material: CLAY with sand
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

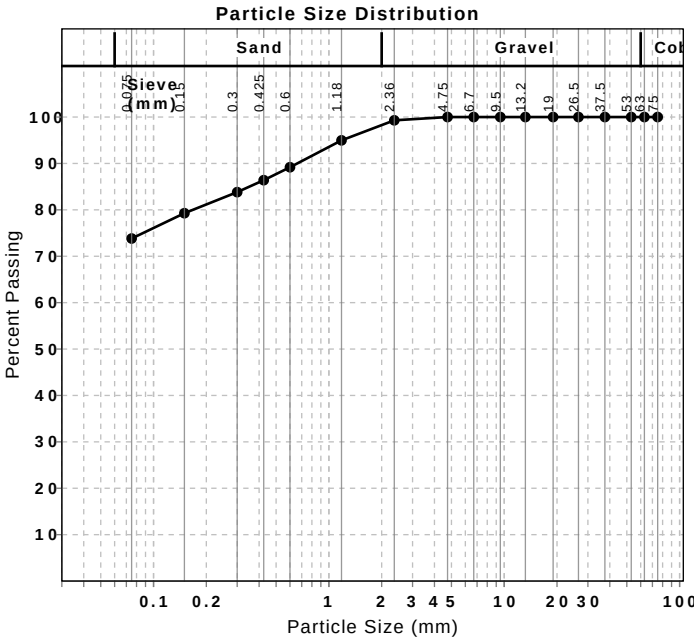
Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**99**			1		
1.18 mm	**95**			4		
0.6 mm	**89**			6		
0.425 mm	**86**			3		
0.3 mm	**84**			3		
0.15 mm	**79**			5		
0.075 mm	**74**			5		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	32		
Plastic Limit (%)	10		
Plasticity Index (%)	**22**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**11.0**		
Cracking Crumbling Curling	None		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	13.3		



Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067B
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 13/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH01, Depth: 0.9-1.0m**
Material: CLAY with sand
Material Source: In-situ

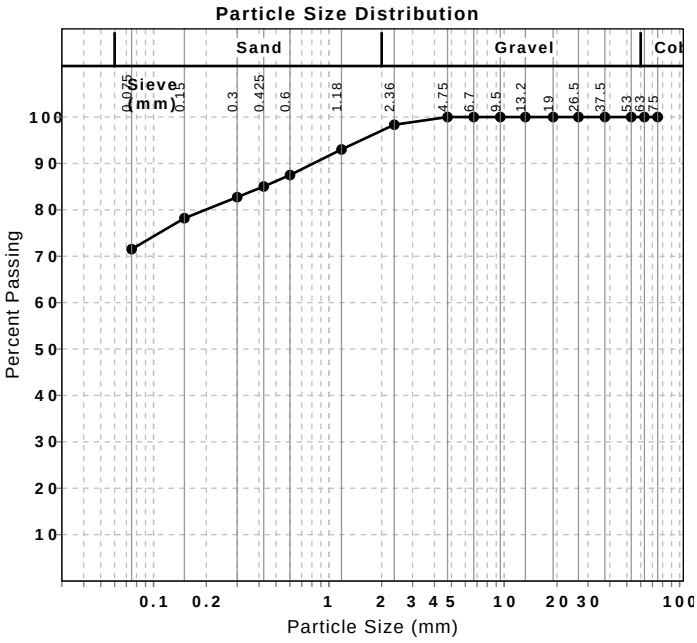
Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

WORLD RECOGNISED ACCREDITATION

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**98**			2		
1.18 mm	**93**			5		
0.6 mm	**87**			6		
0.425 mm	**85**			2		
0.3 mm	**83**			2		
0.15 mm	**78**			5		
0.075 mm	**72**			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 (%)	42		
Plastic Limit (%)	16		
Plasticity Index (%)	**26**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**13.0**		
Cracking Crumbling Curling	None		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	13.1		

Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067C
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 13/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH02, Depth: 0.3-0.4m**
Material: Sandy CLAY
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

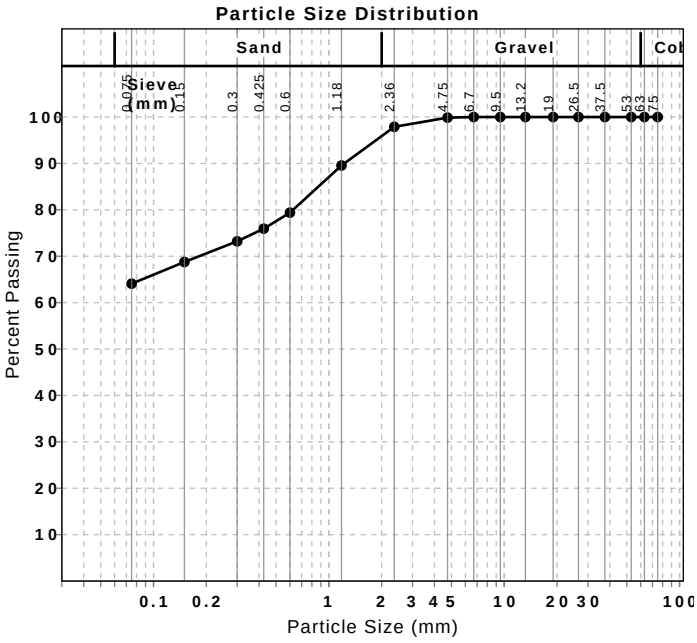
Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**98**			2		
1.18 mm	**90**			8		
0.6 mm	**79**			10		
0.425 mm	**76**			3		
0.3 mm	**73**			3		
0.15 mm	**69**			4		
0.075 mm	**64**			5		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	31		
Plastic Limit (%)	12		
Plasticity Index (%)	**19**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**11.0**		
Cracking Crumbling Curling	Cracking		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	14.7		



Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067D
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 13/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH02, Depth: 0.9-1.0m**
Material: Sandy CLAY
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

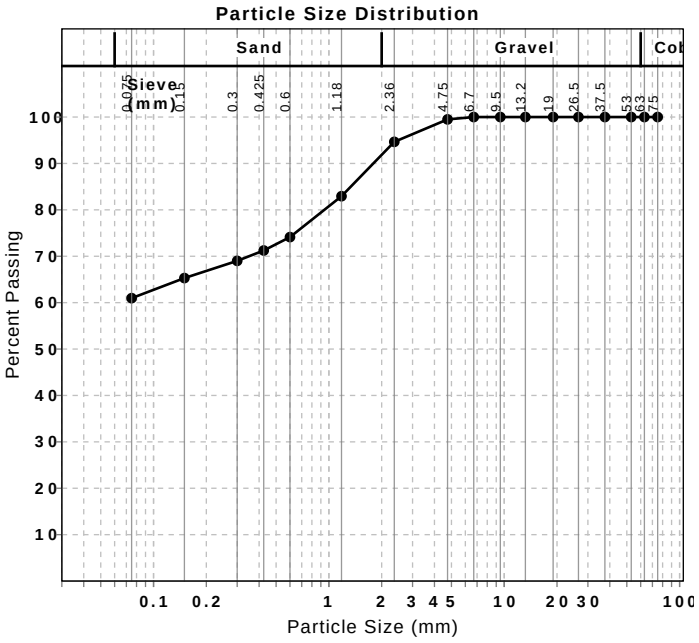
Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**99**			1		
2.36 mm	**95**			5		
1.18 mm	**83**			12		
0.6 mm	**74**			9		
0.425 mm	**71**			3		
0.3 mm	**69**			2		
0.15 mm	**65**			4		
0.075 mm	**61**			4		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	39		
Plastic Limit (%)	14		
Plasticity Index (%)	**25**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**12.5**		
Cracking Crumbling Curling	Cracking		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	10.2		



Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067E
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 13/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH03, Depth: 0.3-0.4m**
Material: Sandy CLAY
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

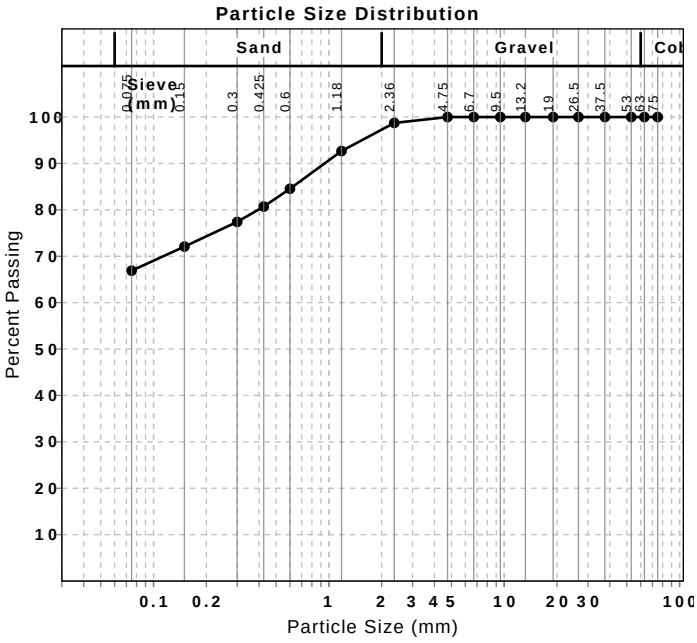
Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**99**			1		
1.18 mm	**93**			6		
0.6 mm	**85**			8		
0.425 mm	**81**			4		
0.3 mm	**77**			3		
0.15 mm	**72**			5		
0.075 mm	**67**			5		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Air Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	30		
Plastic Limit (%)	11		
Plasticity Index (%)	**19**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**11.0**		
Cracking Crumbling Curling	Cracking		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	14.3		



Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

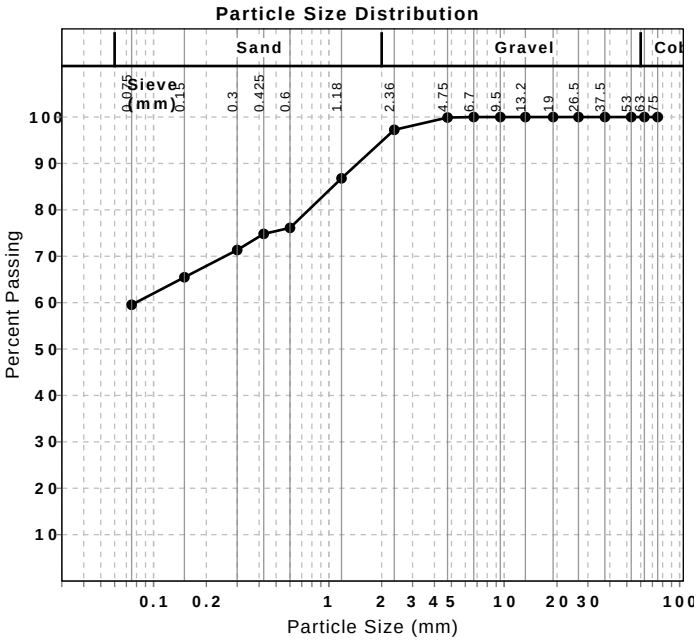
Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067F
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 17/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH03, Depth: 0.9-1.0m**
Material: Sandy CLAY
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**97**			3		
1.18 mm	**87**			10		
0.6 mm	**76**			11		
0.425 mm	**75**			1		
0.3 mm	**71**			3		
0.15 mm	**65**			6		
0.075 mm	**60**			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 (%)	34		
Plastic Limit (%)	14		
Plasticity Index (%)	**20**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**11.0**		
Cracking Crumbling Curling	None		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	10.1		

Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

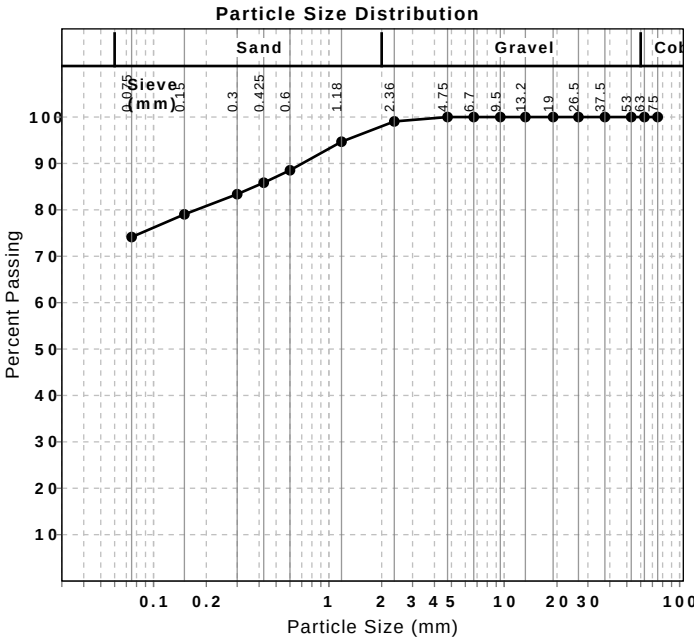
Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067G
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 13/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH04, Depth: 0.3-0.4m**
Material: CLAY with sand
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**99**			1		
1.18 mm	**95**			4		
0.6 mm	**89**			6		
0.425 mm	**86**			3		
0.3 mm	**83**			2		
0.15 mm	**79**			4		
0.075 mm	**74**			5		



Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	36		
Plastic Limit (%)	11		
Plasticity Index (%)	**25**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**12.5**		
Cracking Crumbling Curling	Cracking		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	16.6		

Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067H
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 13/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH04, Depth: 0.9-1.0m**
Material: CLAY with sand
Material Source: In-situ

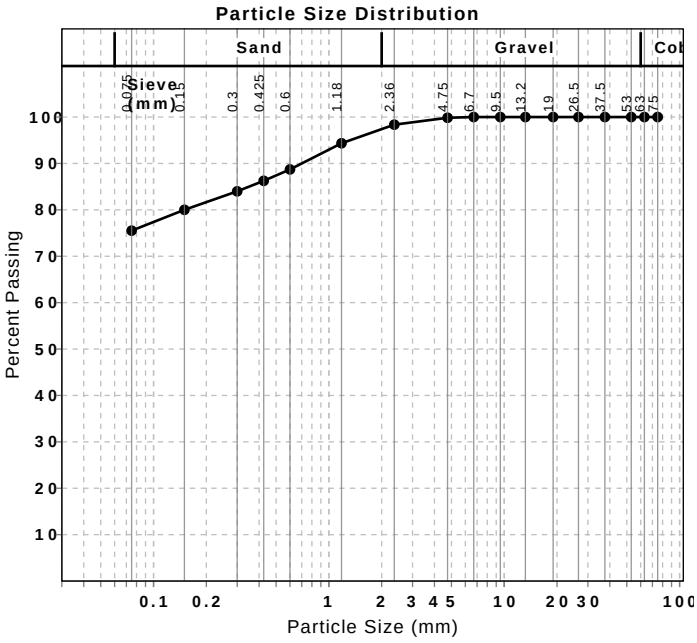
Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

WORLD RECOGNISED ACCREDITATION

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**98**			1		
1.18 mm	**94**			4		
0.6 mm	**89**			6		
0.425 mm	**86**			2		
0.3 mm	**84**			2		
0.15 mm	**80**			4		
0.075 mm	**76**			4		



Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	46		
Plastic Limit (%)	15		
Plasticity Index (%)	**31**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**14.5**		
Cracking Crumbling Curling	None		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	13.4		

Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

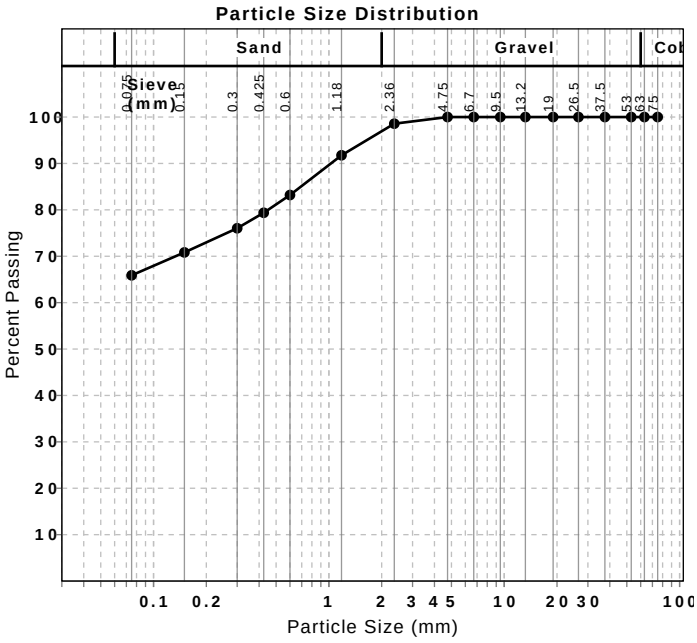
Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067I
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 13/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH05, Depth: 0.3-0.4m**
Material: Sandy CLAY
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**99**			1		
1.18 mm	**92**			7		
0.6 mm	**83**			9		
0.425 mm	**79**			4		
0.3 mm	**76**			3		
0.15 mm	**71**			5		
0.075 mm	**66**			5		



Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	30		
Plastic Limit (%)	9		
Plasticity Index (%)	**21**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**10.0**		
Cracking Crumbling Curling	None		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	14.1		

Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067J
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 17/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH05, Depth: 0.9-1.0m**
Material: Sandy CLAY
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

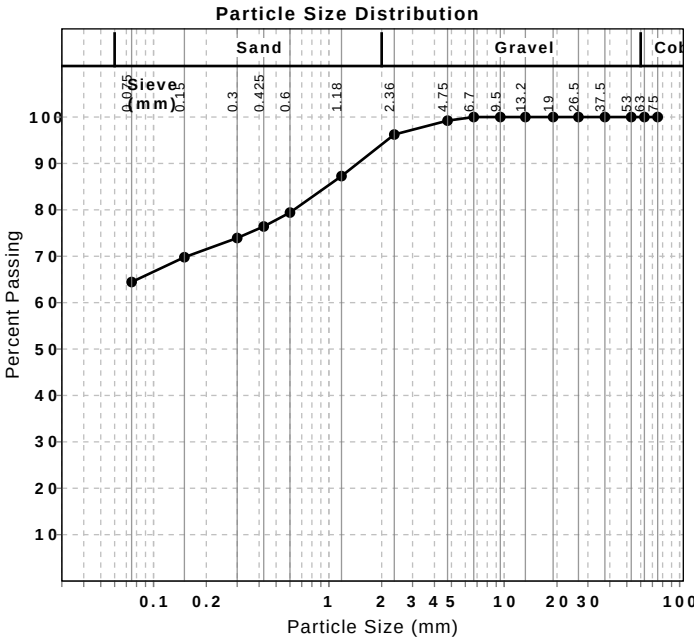
Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**99**			1		
2.36 mm	**96**			3		
1.18 mm	**87**			9		
0.6 mm	**79**			8		
0.425 mm	**76**			3		
0.3 mm	**74**			2		
0.15 mm	**70**			4		
0.075 mm	**64**			5		

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**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**13.0**		
Cracking Crumbling Curling	Cracking		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	11.3		



Material Test Report

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

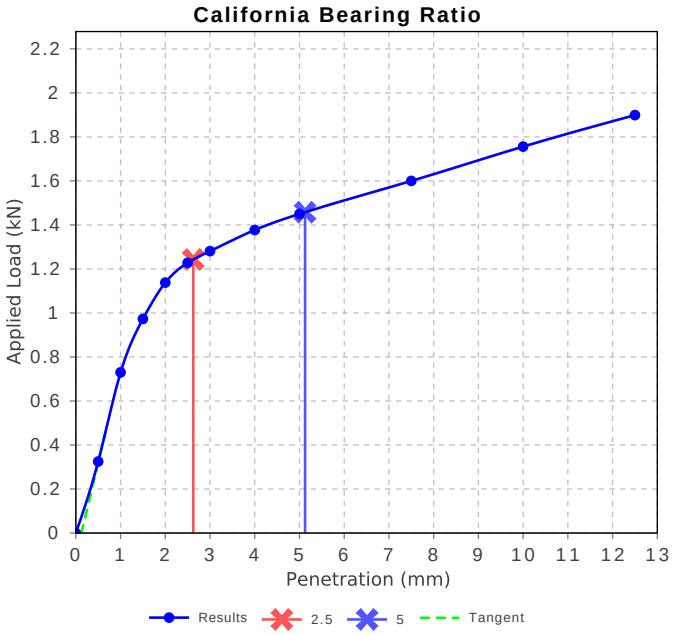
Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067K
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 11/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH06, Depth: 0.4-1.0m**
Material: CLAY
Material Source: In-situ

Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)		Min	Max
Mould Type	1 LITRE MOULD A		
Compaction	Standard		
Maximum Dry Density (t/m^3)	1.94		
Optimum Moisture Content (%)	11.5		
Oversize Sieve (mm)	19.0		
Oversize Material Wet (%)	0		
Method used to Determine Plasticity	AS 1289.3.1.2 & 3.2.1 & 3.3.1		
Curing Hours (h)	48.0		

Moisture Content (AS 1289 2.1.1)	
Moisture Content (%)	9.2

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**9**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	AS 1289.3.1.2 & 3.2.1 & 3.3.1		
Maximum Dry Density (t/m^3)	1.94		
Optimum Moisture Content (%)	11.5		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	100.5		
Dry Density after Soaking (t/m^3)	1.90		
Field Moisture Content (%)	9.2		
Moisture Content at Placement (%)	11.7		
Moisture Content Top 30mm (%)	14.4		
Moisture Content Rest of Sample (%)	12.9		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours (h)	48.0		
Swell (%)	0.0		
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 (%)	39		
Plastic Limit (%)	12		
Plasticity Index (%)	**27**		

Material Test Report

Report Number: **204-1**
Issue Number: 1
Date Issued: 17/12/2024
Client: Cabonne Council

Project Number: 204
Project Name: Geotechnical Investigation
Project Location: 255 Casuarina Drive Eugowra NSW 2806
Work Request: 2067
Sample Number: 2067L
Date Sampled: 02/12/2024
Dates Tested: 02/12/2024 - 11/12/2024
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH07, Depth: 0.4-1.0m**
Material: CLAY
Material Source: In-situ

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

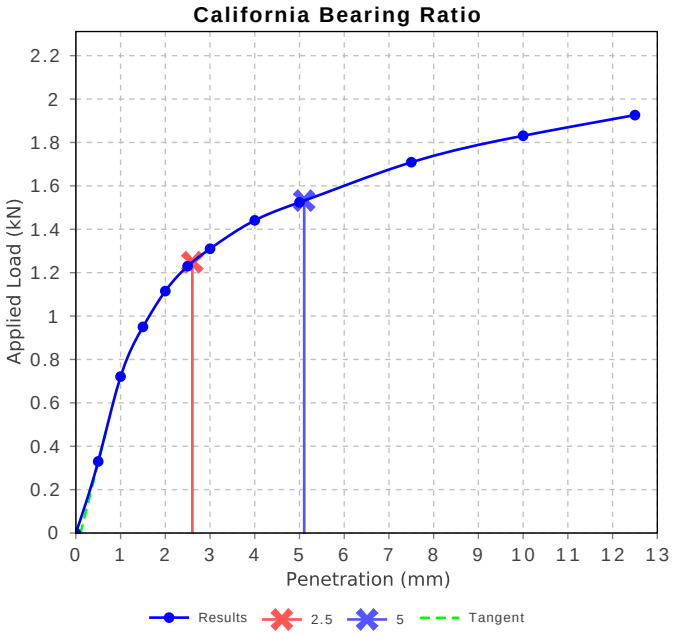
Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)		Min	Max
Mould Type	1 LITRE MOULD A		
Compaction	Standard		
Maximum Dry Density (t/m^3)	1.86		
Optimum Moisture Content (%)	13.5		
Oversize Sieve (mm)	19.0		
Oversize Material Wet (%)	0		
Method used to Determine Plasticity	AS 1289.3.1.2 & 3.2.1 & 3.3.1		
Curing Hours (h)	48.0		

Moisture Content (AS 1289 2.1.1)	
Moisture Content (%)	11.1

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**9**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	AS 1289.3.1.2 & 3.2.1 & 3.3.1		
Maximum Dry Density (t/m^3)	1.86		
Optimum Moisture Content (%)	13.5		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	99.5		
Dry Density after Soaking (t/m^3)	1.82		
Field Moisture Content (%)	11.1		
Moisture Content at Placement (%)	13.7		
Moisture Content Top 30mm (%)	15.3		
Moisture Content Rest of Sample (%)	14.9		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours (h)	48.0		
Swell (%)	0.0		
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 (%)	36		
Plastic Limit (%)	12		
Plasticity Index (%)	**24**		

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Admin
Client	INLAND GEOTECHNICAL PTY LTD
Address	PO BOX 6118 WAGGA WAGGA NSW 2650
Telephone	61 2 69 310 511
Facsimile	(Not specified)
Email	admin@inlandgeo.com.au
Project	**204 Cabonne Council**
Order Number	**204**
Samples	10

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE275165 R0**
Date Received	3/12/2024
Date Reported	18/12/2024

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Shane MCDERMOTT
Laboratory Manager

pH in soil (1:2) [AN101] Tested: 6/12/2024

PARAMETER	UOM	LOR	204/A SOIL - 2/12/2024 SE275165.001	204/B SOIL - 2/12/2024 SE275165.002	204/C SOIL - 2/12/2024 SE275165.003	204/D SOIL - 2/12/2024 SE275165.004	204/E SOIL - 2/12/2024 SE275165.005
pH (1:2)	pH Units	-	6.5	7.4	6.1	6.4	6.2

PARAMETER	UOM	LOR	204/F SOIL - 2/12/2024 SE275165.006	204/G SOIL - 2/12/2024 SE275165.007	204/H SOIL - 2/12/2024 SE275165.008	204/I SOIL - 2/12/2024 SE275165.009	204/J SOIL - 2/12/2024 SE275165.010
pH (1:2)	pH Units	-	6.5	6.3	7.1	6.7	7.9

Conductivity (1:2) in soil [AN106] Tested: 6/12/2024

PARAMETER	UOM	LOR	204/A SOIL - 2/12/2024 SE275165.001	204/B SOIL - 2/12/2024 SE275165.002	204/C SOIL - 2/12/2024 SE275165.003	204/D SOIL - 2/12/2024 SE275165.004	204/E SOIL - 2/12/2024 SE275165.005
Conductivity (1:2) @25 C*	µS/cm	1	28	130	27	46	19
Resistivity (1:2)*	ohm cm	-	35000	7700	37000	22000	52000

PARAMETER	UOM	LOR	204/F SOIL - 2/12/2024 SE275165.006	204/G SOIL - 2/12/2024 SE275165.007	204/H SOIL - 2/12/2024 SE275165.008	204/I SOIL - 2/12/2024 SE275165.009	204/J SOIL - 2/12/2024 SE275165.010
Conductivity (1:2) @25 C*	µS/cm	1	74	39	56	31	230
Resistivity (1:2)*	ohm cm	-	14000	26000	18000	32000	4400

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography [AN245] Tested: 6/12/2024

PARAMETER	UOM	LOR	204/A SOIL - 2/12/2024 SE275165.001	204/B SOIL - 2/12/2024 SE275165.002	204/C SOIL - 2/12/2024 SE275165.003	204/D SOIL - 2/12/2024 SE275165.004	204/E SOIL - 2/12/2024 SE275165.005
Chloride	mg/kg	0.25	1.7	<0.25	2.0	3.6	1.5
Sulfate	mg/kg	0.5	9.5	1.2	9.2	18	3.7

PARAMETER	UOM	LOR	204/F SOIL - 2/12/2024 SE275165.006	204/G SOIL - 2/12/2024 SE275165.007	204/H SOIL - 2/12/2024 SE275165.008	204/I SOIL - 2/12/2024 SE275165.009	204/J SOIL - 2/12/2024 SE275165.010
Chloride	mg/kg	0.25	6.6	3.0	1.1	1.3	0.96
Sulfate	mg/kg	0.5	24	3.1	6.9	2.0	3.8

Moisture Content [AN002] Tested: 5/12/2024

PARAMETER	UOM	LOR	204/A SOIL - 2/12/2024 SE275165.001	204/B SOIL - 2/12/2024 SE275165.002	204/C SOIL - 2/12/2024 SE275165.003	204/D SOIL - 2/12/2024 SE275165.004	204/E SOIL - 2/12/2024 SE275165.005
% Moisture	%w/w	1	10.2	11.3	10.5	8.4	11.2

PARAMETER	UOM	LOR	204/F SOIL - 2/12/2024 SE275165.006	204/G SOIL - 2/12/2024 SE275165.007	204/H SOIL - 2/12/2024 SE275165.008	204/I SOIL - 2/12/2024 SE275165.009	204/J SOIL - 2/12/2024 SE275165.010
% Moisture	%w/w	1	8.7	14.0	12.0	12.1	10.2

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:2 and the pH determined and reported on the extract after 1 hour extraction (pH 1:2) or after 1 hour extraction and overnight aging (pH (1:2) aged). Reference APHA 4500-H+.
AN106	Conductivity : Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract of as received sample with water is made at a ratio of 1:2 and the EC determined and reported on the extract basis after the 1 hour extraction (EC(1:2)) or after the 1 hour extraction and overnight aging (EC(1:2) aged). Reference APHA 2510 B.
AN106	Resistivity of the extract is reported on the extract basis and is the reciprocal of conductivity. Salinity and TDS can be calculated from the extract conductivity and is reported back to the soil basis.
AN245	Anions by Ion Chromatography: A water sample or extract is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO2, NO3 and SO4 are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		
***	Indicates that both * and ** apply.				

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.