

26 October 2023

Reg. No.: GS23-347

Wormtech Pty Ltd  
PO Box 526  
Yenda, NSW 2681

**Attention: Mr. Thomas Dewing – Commercial Development Manager**

Dear Sir,

**PRELIMINARY GEOTECHNICAL INVESTIGATION - EXISTING VERMICULTURE FACILITY,  
LOT 487, No. 224 WOOD ROAD, YENDA, NSW**

Further to your request in response to our quotation, Q23-459B dated 13 September 2023; we have carried out preliminary geotechnical field investigation at the existing vermiculture facility on the vermiculture pad at the above subject site on 19 September 2023.

The purpose of the investigation was to determine the nature of the subsurface soils and groundwater conditions by augering, testing and sampling across the proposed site. Based upon the information obtained, comments and recommendations for the existing vermiculture pad are to be made.

**It should be noted that additional boreholes were recommended to be drilled across the site with additional laboratory testing (refer to ARTL quote Q23-459, dated 14 August 2023).**

## **1.0 SITE DESCRIPTION**

The site of the existing vermiculture facility is located at Lot 487, No. 224 Wood Road, Yenda, NSW, approximately 2.8km south-east of the town center. The subject site of the existing vermiculture pad is located at the eastern side of the site directly west of the Martin Road, directly south of Wood Road and directly north of the existing leachate dam (refer to attached borehole location plan).

The existing vermiculture pad was noted to have been constructed by stripping the pre-existing topsoil and preparing the pad with sections of shallow clay-based fill (cut to fill) and noted to be generally flat with a slight slope towards the leachate pad to the south as noted at the time of the

investigation. It should also be noted that windrows or vermiculture were witnessed across the subject site of the existing vermiculture pad as witnessed at the time of the investigation (refer to attached site photo).

## **2.0 SITE GEOLOGY**

The general topography of the area is flat, gently undulating low tablelands. The subject site in the Yenda area is underlain by alluvial flood plain deposits of black and red clayey silt, sand and gravel soils of Quaternary Deposit of Cainozoic Age in accordance with 1:250,000 Scale "Metallogenic Series Sheet SI/55-10 for Narrandera".

## **3.0 INVESTIGATION PROCEDURE**

### **3.1 Fieldwork**

The fieldwork for the investigation consisted of logging and sampling of three (3) boreholes (BH1 to BH3) across the existing vermiculture pad as requested by the client and they were augered with our trailer-mounted drilling rig to the depths of 2.0m at the locations as shown in the attached borehole, DCP and DIS test location plan with small and bulk samples recovered at various depths from the boreholes for relevant laboratory testing.

Dynamic Cone Penetrometer (DCP) and Density In-situ (DIS) tests were carried out at each borehole location (BH1 to BH3) to assess the strength and compaction of the underlying material. It should be noted that GPS readings at each borehole location are given in the respective borehole logs. It should also be noted that DIS was undertaken adjacent to each borehole location and the GPS readings are given in the DIS test report (refer to ARTL report No. GD23-436, dated 18 October 2023).

The fieldwork was carried out on 19 September 2023 by our Geotechnician of Aitken Rowe Testing Laboratories Pty Ltd of Griffith, NSW, who nominated the sampling and prepared engineering logs of the boreholes. The borehole logs with explanatory note and DCP test reports are herewith attached. The DIS test report (refer to ARTL report No. GD23-436) is also herewith attached.

### **3.2 Laboratory Testing**

To confirm and evaluate the results of the fieldwork, laboratory tests were carried out on the representative samples of the subsoil obtained from the boreholes. The relevant laboratory testing included Particle Size Distribution (PSD) test (hydrometer test method), Atterberg Limit test, Shrink Swell Index (Iss) test, Standard Maximum Dry Density (SMDD) test and permeability test on the recovered samples, which were undertaken at our NATA accredited testing laboratory in Griffith and Wagga Wagga, NSW.

The samples for permeability tests were compacted at 95% and 100% of SMDD and at nearest 100% of Standard Optimum Moisture Content (SOMC). The laboratory test reports for Particle Size

Distribution, Atterberg Limit, SMDD, SOMC and permeability tests are herewith attached. The test results for Iss and SOMC are incorporated in the respective borehole logs.

#### **4.0 SUBSURFACE CONDITIONS**

The borehole investigation across the existing vermiculture pad revealed that the site is generally underlain by fill material (in BH2 & BH3 only) comprising high plasticity silty clay (in BH2 only) to 0.2 in BH2 and low plasticity sandy silty clay (in BH3 only) to 0.1m in BH3 overlying natural medium to high and high plasticity silty clay and low plasticity sandy silty clay (in BH3 only), extending to the borehole termination depth at 2.0m in BH1 to BH3. The fill material encountered at the borehole locations (BH2 & BH3 only) appeared to have been placed “uncontrolled” and “moderately to well compacted”.

The moisture condition of the underlying clay-based fill material was generally less than plastic limit throughout the tested fill profile in BH2 and BH3 and the underlying natural clay-based material was generally greater than plastic limit throughout the investigation depth at the time of the investigation. No groundwater or seepage was encountered in the boreholes and the boreholes were found dry on completion at the time of the investigation. However, it should be noted that variations to the water table level could fluctuate with changes to the season, temperature and rainfall.

As per the DCP test result and visual observation of the resistance by auger TC bit, the underlying fill material (in BH2 & BH3 only) is assessed to be generally very stiff consistency throughout the tested fill profile and the underlying natural clay-based material is assessed to be generally stiff consistency in the upper profile then increasing to very stiff consistency throughout the investigated depth in BH1, generally firm consistency in the upper profile then increasing to stiff and very stiff consistency with depth throughout the investigated depth in BH2 and generally firm to stiff consistency in the upper profile then increasing to very stiff consistency throughout the investigated depth in BH3 at the time of the investigation.

The density in-situ tests performed at the existing surface level (DIS No. 2, 4 & 6) and at 300mm below the existing surface level (DIS No. 1, 3 & 5) across the existing vermiculture pad showed relative density results ranging from 89.0% to 105.5% SMDD at the surface level and 95.5% to 101.5% SMDD at the depth of 300mm below the existing surface level at the time of the investigation (refer to ARTL report No. GD23-436, dated 18 October 2023).

The borehole logs with explanatory note, DCP and DIS test reports are herewith attached.

#### **5.0 SUITABILITY OF SUBSURFACE MATERIALS FOR COMPOSTING OPERATION PAD**

The laboratory tests carried out on the natural clay material recovered from BH1 indicated that the material generally contains 0 to 9% gravel, 13 to 19% sand, 32% silt and 45 to 49% clay content with Plasticity Index (PI) of 28 to 42%. The material is generally classified as “CH – Silty CLAY; high

plasticity, with fine to coarse sand” and “CH – Silty CLAY; high plasticity, trace fine to coarse sand, trace fine gravel” in accordance with “AS1726 -2017 Geotechnical Site Investigations”.

The permeability test carried out on the natural clay-based material from BH1 indicates the permeability of  $8 \times 10^{-10}$  m/sec on high plasticity silty clay, which was compacted at 100% of SMDD at nearest 100% of SOMC. The dispersion (Emerson Class) tests carried out on the same samples showed “Emerson Class 4” and therefore the clay-based materials are considered “potentially slightly dispersive”. The laboratory test reports are attached.

The laboratory tests carried out on the fill and natural silty clay material recovered from BH3 indicated that the material generally contains 0 % gravel, 31 to 34% sand, 31 to 32% silt and 34 to 38% clay content with Plasticity Index (PI) of 17 to 18%. The material is generally classified as “CL – Sandy Silty CLAY; low plasticity, fine to coarse sand” in accordance with “AS1726 -2017 Geotechnical Site Investigations”.

The permeability test carried out on the natural clay-based material from BH3 indicates the permeability of  $9 \times 10^{-9}$  m/sec on low plasticity sandy silty clay, which was compacted at 95% of SMDD at nearest 100% of SOMC. The dispersion (Emerson Class) tests carried out on the same sample showed “Emerson Class 3” and therefore the clay-based materials are considered “potentially moderately dispersive”. The laboratory test reports are attached.

These results were found to be within the Department of Environment and Conservation (NSW) environmental guidelines for “Composting and Related Organics Processing Facilities ( $1.0 \times 10^{-7}$  m/sec) for composting pads provided the subgrade material is compacted to 98% SMDD at nearest 100% of SOMC.

As stated above the density tests in-situ performed across the existing vermiculture pad showed relative density results ranging from 89.0% to 105.5% SMDD at the surface level and 95.5% to 101.5% SMDD at the depth of 300mm below the existing surface level at the time of the investigation (refer to ARTL report No. GD23-436).

It is our professional opinion that the fill and natural impermeable clay-based material encountered across the existing vermiculture pad is considered an adequate and suitable natural geological barrier between the groundwater, soil and substrata and the vermiculture across the site. It should however be noted the DCP and DIS tests at the location of BH2 (DCP2), BH3 (DCP3), DIS 3 and DIS 6 showed either poorly compacted fill or firm and firm consistency natural material to depths of 0.5m to 0.7m below the existing surface level which is considered “unsuitable” and therefore “reworking” of the surface material is highly recommended to a minimum depth 0.5m to 0.7m across the existing vermiculture pad in order to achieve the required compaction of 98% SMDD with the permeability requirements.

## 6.0 SITE PREPARATION FOR COMPOST PAD

The following site preparation is required across the existing vermiculture pad site prior to any composting activities in order to confirm to the permeability requirements.

- Remove topsoil, if any, and fill to a minimum depth of 0.5m to 0.7m and stockpile for later use for landscaping and fill as appropriate.
- Remove any unsuitable material encountered at the time of the construction as required.
- Once the topsoil, fill and unsuitable materials, if any, are removed as required, the exposed fill or natural material should then be scarified to a depth of about 200mm; moisture conditioned to within 0 to -2% of SOMC and compacted to a minimum of 98% of SMDD.
- Proof roll the exposed subgrade using a minimum of 10 passes of 12 tonne dead weight roller to detect any soft, loose or heaving areas.
- Any soft, loose or heave areas, if detected during the process, should be excavated down and backfilled with appropriate approved materials, compacted in 150mm thick layers to the equivalent density of minimum 98% of SMDD.
- Any area of exposed subgrade, which exhibits shrinkage cracking and does not require re-compaction, should be watered and rolled until the shrinkage cracks do not reappear. During this undertaking, care should be exercised to ensure the surface does not become soft.
- Monitor in dry conditions. If cracks appear then immediately apply water until cracking has ceased. Alternatively, a thin layer (minimum of 0.1m) of granular material (ie sand) can be applied over the surface to protect from cracking.

## 7.0 GENERAL COMMENT

**It should be noted that the comments and recommendations given in this report are based on a limited geotechnical investigation.** The subsurface soil conditions between the completed boreholes may be found different (or may be interpreted to be different) from those expected. This can also occur with groundwater conditions, especially after climatic changes. If such differences appear to exist, we recommend that you immediately contact us.

Yours truly,



**Jarrod Gornall**  
**Senior Geotechnical Engineer**



**Tin Maung**  
**Principal Geotechnical Engineer**

Attachments:

- Addendum
- Plan showing Borehole, DCP & DIS Locations
- Borehole logs with explanatory note
- Dynamic Cone Penetrometer test reports
- In-situ Density test report (ARTL Report No. GD23-436)
- Laboratory test reports
- Site Photo

## **ADDENDUM**

### **LIMITS OF INVESTIGATION**

The recommendations made in this report are based on the assumption that the test results are representative of the overall subsurface conditions. However, it should be noted that even under optimum circumstances, actual conditions in some parts of the building site may differ from those said to exist, because no geotechnical engineer, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal all that is hidden by earth, rock and time.

The client should also be aware that our recommendations refer only to our test site locations and the ground level at the time of testing.

The recommendations in this report are based on the following: -

- a) The information gained from our investigation.
- b) The present "state of the art" in testing and design.
- c) The building type and site treatment conveyed to us by the client.
- d) Historical information.

Should the client or their agent have omitted to supply us with the correct relevant information, or make significant changes to the building type and/or building envelope, our report may not take responsibility for any consequences and we reserve the right to make an additional charge if more testing is necessary.

Notwithstanding the recommendations made in this report, we also recommend that whenever footings are close to any excavations or easements, that consideration should be given to deepening the footings.

Unless otherwise stated in our commission, any dimensions or slope direction and magnitude should not be used for any building costing calculations and/or positioning. Any sketch supplied should be considered as only an approximate pictorial evidence of our work.





**Aitken Rowe Testing Laboratories Pty Ltd**

**Registration Number: GS23-347**

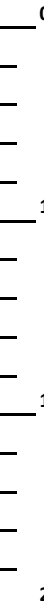

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**Client:** WORMTECH PTY LTD – YENDA, NSW  
**Project:** PRELIMINARY GEOTECHNICAL INVESTIGATION  
 EXISTING VERMICULTURE FACILITY,  
 LOT 487, No. 224 WOOD ROAD, YENDA, NSW  
 BOREHOLE, DCP & DIS TEST LOCATION PLAN



Dry on completion



USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample		Lab. Test L.S % -425µm	Remarks & Field Records	
					Type	No.			
CL	FILL: Sandy Silty CLAY; low plasticity, fine to coarse sand, red brown		MC<PL	VSt.	D	3A	12.5	FILL: Appears moderately to well compacted 'Uncontrolled'	
CI-CH	Silty CLAY; medium to high plasticity, with fine to coarse sand, red brown		MC>PL	F-St.	U50	3B		NATURAL Iss = 2.59 1-2% >OMC	
CL	Sandy Silty CLAY; low plasticity, fine to coarse sand, yellow orange				VSt.	D		3C	SOMC = 20.1%  2-3% >OMC
									Slight Seepage @ 1.4m to 1.6m
CI-CH	Silty CLAY; medium to high plasticity, with fine to coarse sand, yellow brown							End of Seepage	
	End of Borehole (BH3) @ 2.0m								
<div>Registration No.: GS23-347 Location: Preliminary Geotechnical Investigation - Existing Vermiculture Facility, Lot 487, No. 224 Wood Road, Yenda, NSW Client: Wormtech Pty Ltd - Yenda, NSW</div>								<div>Logged By: M.S Scale: As shown Seepage @ 1.4m to 1.6m</div>	



# AITKEN ROWE TESTING LABORATORIES PTY LTD

## LOG SYMBOLS

LOG COLUMN	SYMBOL	DEFINITION		
Groundwater Record		Standing water level. Time delay following completion of drilling may be shown.		
		Groundwater seepage into borehole or excavation noted during drilling or excavation.		
Samples	D	Disturbed bag sample taken between the depths indicated by lines.		
	U	Undisturbed 50mm diameter tube sample taken between the depths indicated by lines		
Field Tests	4, 7, 10 N=17	Standard Penetration Test (S.P.T.) performed between depths indicated by lines. Individual figures show blows per 150mm penetration driven by SPT hammer.		
	5	Dynamic Cone Penetration Test performed between depths indicated by lines. Individual figures show blows per 100mm penetration for 60 degree solid cone driven by 9 kg hammer.		
	7			
	3			
Moisture Condition (Silt or Clay based)	MC<PL	Moisture content estimated to be less than plastic limit.		
	MC=PL	Moisture content estimated to be approx. equal to plastic limit.		
	MC>PL	Moisture content estimated to be greater than plastic limit.		
Moisture Condition (Gravel or Sand based)	D	DRY – runs freely through fingers.		
	M	MOIST – does not run freely but no free water visible on soil surface.		
	W	WET – free water visible on soil surface.		
Consistency (Silt or Clay based)	VS	VERY SOFT – unconfined compressive strength less than 25kPa.		
	S	SOFT – unconfined compressive strength 25-50 kPa.		
	F	FIRM – unconfined compressive strength 50-100kPa.		
	St.	STIFF – unconfined compressive strength 100-200kPa.		
	VSt.	VERY STIFF – unconfined compressive strength 200-400kPa.		
	H	HARD – unconfined compressive strength greater than 400kPa.		
Relative Density (Gravel or Sand based)		Description	Density Index Range %	'N' Value Range Blows/300mm
	VL	VERY LOOSE	<15	0-5
	L	LOOSE	15-35	6-10
	MD	MEDIUM DENSE	35-65	11-30
	D	DENSE	65-85	31-60
	VD	VERY DENSE	>85	>60
Hand Penetrometer Readings	300 250 280	Numbers indicate individual test results in kPa on representative undisturbed material.		
Laboratory Test	L.S. %	Linear Shrinkage (As per TfNSW Method T113)		
	M.C. %	Field Moisture Content (As per Australian Standard AS1289.2.1.1 or TfNSW Method T120)		
	Iss	Shrink-Swell Index (As per Australian Standard AS1289.7.1.1)		
Piezometer Construction	Fill		Piezometer	
		Bentonite		Solid Pipe
		Washed Fine Graded Gravel		Slotted Screen
Remarks	'V' bit	Hardened steel 'V' shaped bit.		
	'TC' bit	Tungsten Carbide wing bit.		

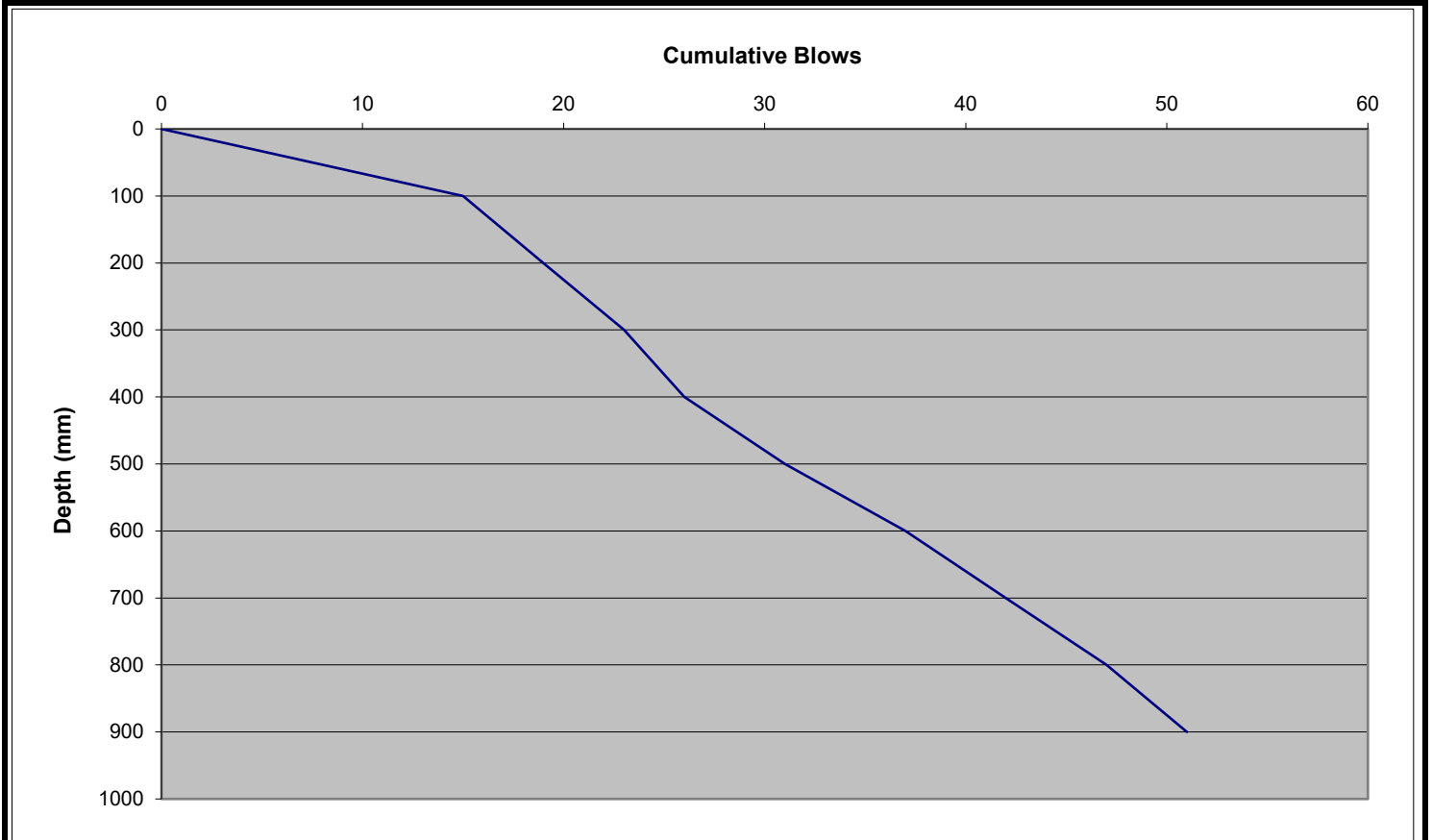
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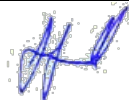
ARTL Griffith: 17b Battista Street, Griffith NSW 2680

## DYNAMIC CONE PENETROMETER REPORT

CLIENT: WORMTECH PTY LTD - YENDA, NSW	PAGE: 1 OF: 3 <b>DCP: 1 (BH1)</b>
PROJECT: PRELIMINARY GEOTECHNICAL INVESTIGATION	REGISTRATION NO: <b>GS23-347</b>
EXISTING VERMICULTURE FACILITY	DATE OF TEST: 19/09/2023
LOCATION: LOT 487, No. 224 WOOD ROAD, YENDA, NSW	DEPTH BELOW ESL (mm): NIL
SOIL DESCRIPTION: REFER TO BOREHOLE LOGS	MOISTURE CONDITION: REFER TO LOGS
DEPTH OF GROUND WATER TABLE IF INTERSECTED: N/A	TEST METHOD: AS 1289.6.3.2

Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR
0.0 - 0.1	15	38	1.5 - 1.6	*	*	3.0 - 3.1	*	*	4.5 - 4.6	*	*
0.1 - 0.2	4	7	1.6 - 1.7	*	*	3.1 - 3.2	*	*	4.6 - 4.7	*	*
0.2 - 0.3	4	7	1.7 - 1.8	*	*	3.2 - 3.3	*	*	4.7 - 4.8	*	*
0.3 - 0.4	3	5	1.8 - 1.9	*	*	3.3 - 3.4	*	*	4.8 - 4.9	*	*
0.4 - 0.5	5	9	1.9 - 2.0	*	*	3.4 - 3.5	*	*	4.9 - 5.0	*	*
0.5 - 0.6	6	12	2.0 - 2.1	*	*	3.5 - 3.6	*	*	5.0 - 5.1	*	*
0.6 - 0.7	5	9	2.1 - 2.2	*	*	3.6 - 3.7	*	*	5.1 - 5.2	*	*
0.7 - 0.8	5	9	2.2 - 2.3	*	*	3.7 - 3.8	*	*	5.2 - 5.3	*	*
0.8 - 0.9	4	7	2.3 - 2.4	*	*	3.8 - 3.9	*	*	5.3 - 5.4	*	*
0.9 - 1.0	END	*	2.4 - 2.5	*	*	3.9 - 4.0	*	*	5.4 - 5.5	*	*
1.0 - 1.1	*	*	2.5 - 2.6	*	*	4.0 - 4.1	*	*	5.5 - 5.6	*	*
1.1 - 1.2	*	*	2.6 - 2.7	*	*	4.1 - 4.2	*	*	5.6 - 5.7	*	*
1.2 - 1.3	*	*	2.7 - 2.8	*	*	4.2 - 4.3	*	*	5.7 - 5.8	*	*
1.3 - 1.4	*	*	2.8 - 2.9	*	*	4.3 - 4.4	*	*	5.8 - 5.9	*	*
1.4 - 1.5	*	*	2.9 - 3.0	*	*	4.4 - 4.5	*	*	5.9 - 6.0	*	*



 <p>Accredited for compliance with ISO/IEC 17025 - Testing.</p> <p>ACCREDITATION NUMBER: 4679</p> <p>WORLD RECOGNISED ACCREDITATION</p>	REMARKS:
	<p>APPROVED SIGNATORY:  Jarrod Gornall</p> <p>DATE: 24/10/2023</p>



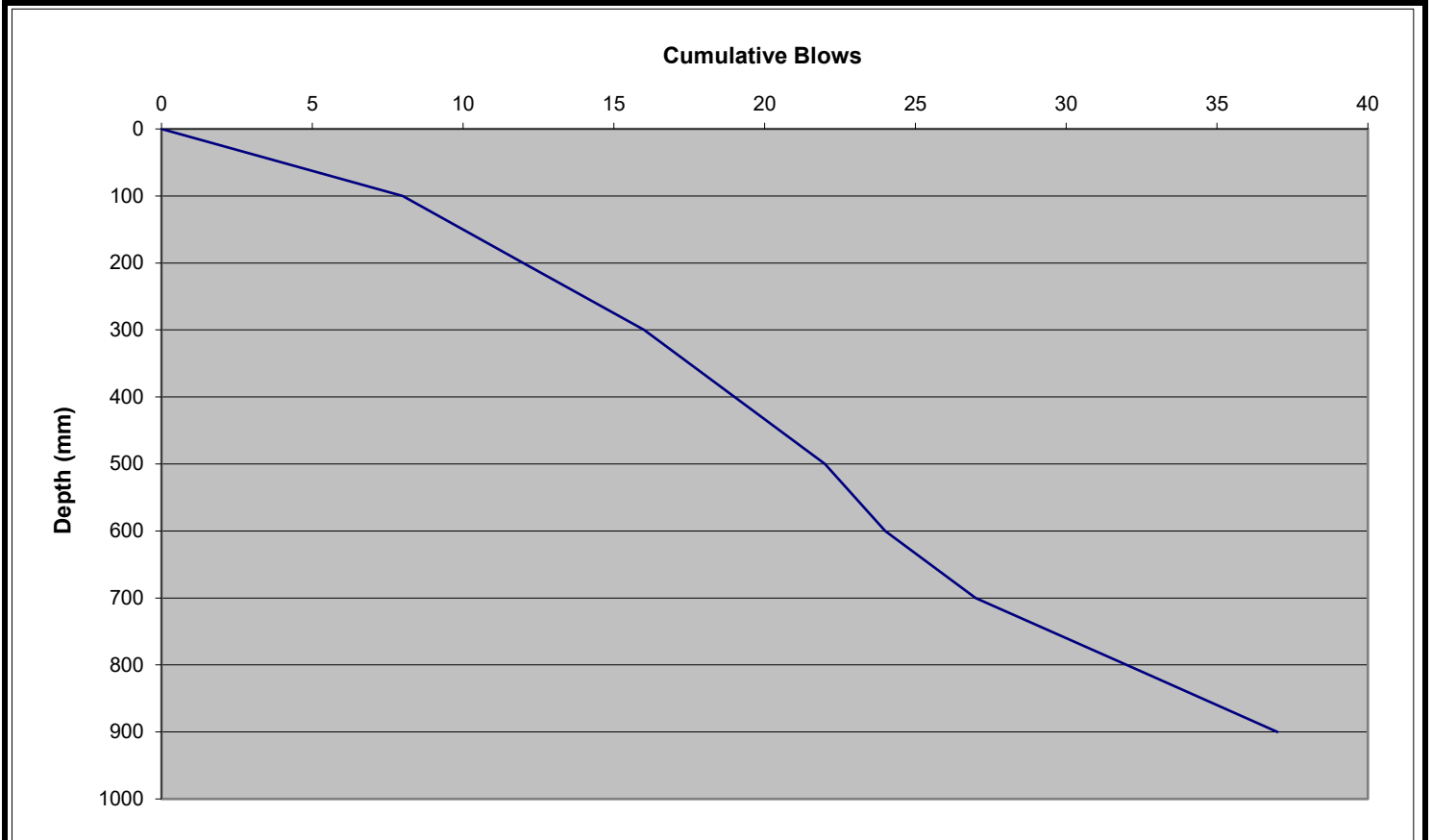
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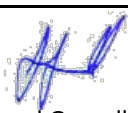
ARTL Griffith: 17b Battista Street, Griffith NSW 2680

## DYNAMIC CONE PENETROMETER REPORT

CLIENT: WORMTECH PTY LTD - YENDA, NSW	PAGE: 2 OF: 3 <b>DCP: 2 (BH2)</b>
PROJECT: PRELIMINARY GEOTECHNICAL INVESTIGATION EXISTING VERMICULTURE FACILITY	REGISTRATION NO: <b>GS23-347</b>
LOCATION: LOT 487, No. 224 WOOD ROAD, YENDA, NSW	DATE OF TEST: 19/09/2023
SOIL DESCRIPTION: REFER TO BOREHOLE LOGS	DEPTH BELOW ESL (mm): NIL
DEPTH OF GROUND WATER TABLE IF INTERSECTED: N/A	MOISTURE CONDITION: REFER TO LOGS
	TEST METHOD: AS 1289.6.3.2

Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR
0.0 - 0.1	8	17	1.5 - 1.6	*	*	3.0 - 3.1	*	*	4.5 - 4.6	*	*
0.1 - 0.2	4	7	1.6 - 1.7	*	*	3.1 - 3.2	*	*	4.6 - 4.7	*	*
0.2 - 0.3	4	7	1.7 - 1.8	*	*	3.2 - 3.3	*	*	4.7 - 4.8	*	*
0.3 - 0.4	3	5	1.8 - 1.9	*	*	3.3 - 3.4	*	*	4.8 - 4.9	*	*
0.4 - 0.5	3	5	1.9 - 2.0	*	*	3.4 - 3.5	*	*	4.9 - 5.0	*	*
0.5 - 0.6	2	3	2.0 - 2.1	*	*	3.5 - 3.6	*	*	5.0 - 5.1	*	*
0.6 - 0.7	3	5	2.1 - 2.2	*	*	3.6 - 3.7	*	*	5.1 - 5.2	*	*
0.7 - 0.8	5	9	2.2 - 2.3	*	*	3.7 - 3.8	*	*	5.2 - 5.3	*	*
0.8 - 0.9	5	9	2.3 - 2.4	*	*	3.8 - 3.9	*	*	5.3 - 5.4	*	*
0.9 - 1.0	END	*	2.4 - 2.5	*	*	3.9 - 4.0	*	*	5.4 - 5.5	*	*
1.0 - 1.1	*	*	2.5 - 2.6	*	*	4.0 - 4.1	*	*	5.5 - 5.6	*	*
1.1 - 1.2	*	*	2.6 - 2.7	*	*	4.1 - 4.2	*	*	5.6 - 5.7	*	*
1.2 - 1.3	*	*	2.7 - 2.8	*	*	4.2 - 4.3	*	*	5.7 - 5.8	*	*
1.3 - 1.4	*	*	2.8 - 2.9	*	*	4.3 - 4.4	*	*	5.8 - 5.9	*	*
1.4 - 1.5	*	*	2.9 - 3.0	*	*	4.4 - 4.5	*	*	5.9 - 6.0	*	*



 <p>Accredited for compliance with ISO/IEC 17025 - Testing.</p> <p>ACCREDITATION NUMBER: 4679</p> <p>WORLD RECOGNISED ACCREDITATION</p>	REMARKS:
	<p style="text-align: center;">APPROVED SIGNATORY:  Jarrod Gornall</p> <p style="text-align: center;">DATE: 24/10/2023</p>

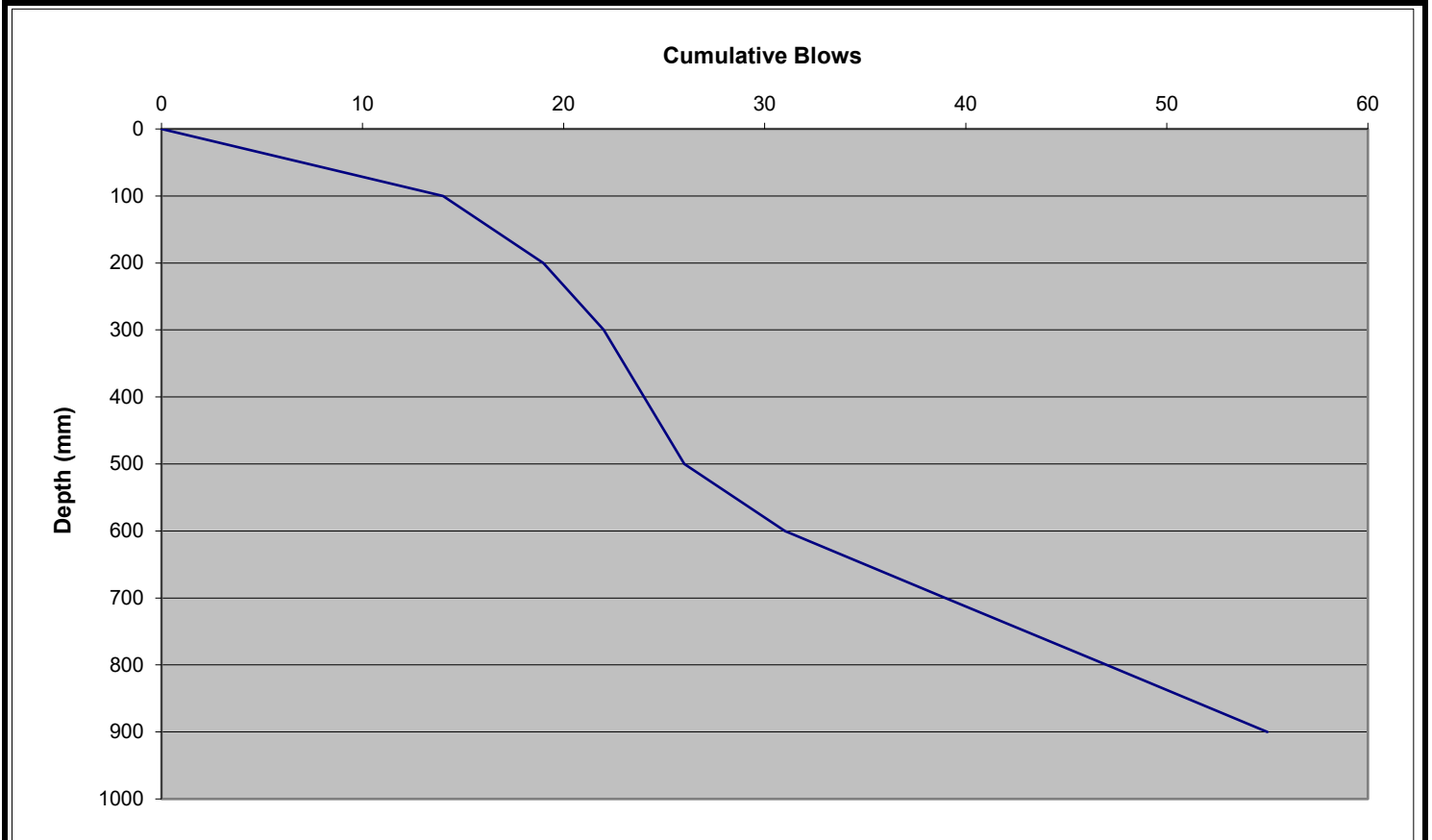
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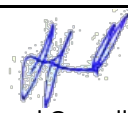
ARTL Griffith: 17b Battista Street, Griffith NSW 2680

## DYNAMIC CONE PENETROMETER REPORT

CLIENT: WORMTECH PTY LTD - YENDA, NSW	PAGE: 3 OF: 3 <b>DCP: 3 (BH3)</b>
PROJECT: PRELIMINARY GEOTECHNICAL INVESTIGATION EXISTING VERMICULTURE FACILITY	REGISTRATION NO: <b>GS23-347</b>
LOCATION: LOT 487, No. 224 WOOD ROAD, YENDA, NSW	DATE OF TEST: 19/09/2023
SOIL DESCRIPTION: REFER TO BOREHOLE LOGS	DEPTH BELOW ESL (mm): NIL
DEPTH OF GROUND WATER TABLE IF INTERSECTED: N/A	MOISTURE CONDITION: REFER TO LOGS
	TEST METHOD: AS 1289.6.3.2

Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR	Depth(m)	Blows	Est. CBR
0.0 - 0.1	14	35	1.5 - 1.6	*	*	3.0 - 3.1	*	*	4.5 - 4.6	*	*
0.1 - 0.2	5	9	1.6 - 1.7	*	*	3.1 - 3.2	*	*	4.6 - 4.7	*	*
0.2 - 0.3	3	5	1.7 - 1.8	*	*	3.2 - 3.3	*	*	4.7 - 4.8	*	*
0.3 - 0.4	2	3	1.8 - 1.9	*	*	3.3 - 3.4	*	*	4.8 - 4.9	*	*
0.4 - 0.5	2	3	1.9 - 2.0	*	*	3.4 - 3.5	*	*	4.9 - 5.0	*	*
0.5 - 0.6	5	9	2.0 - 2.1	*	*	3.5 - 3.6	*	*	5.0 - 5.1	*	*
0.6 - 0.7	8	17	2.1 - 2.2	*	*	3.6 - 3.7	*	*	5.1 - 5.2	*	*
0.7 - 0.8	8	17	2.2 - 2.3	*	*	3.7 - 3.8	*	*	5.2 - 5.3	*	*
0.8 - 0.9	8	17	2.3 - 2.4	*	*	3.8 - 3.9	*	*	5.3 - 5.4	*	*
0.9 - 1.0	END	*	2.4 - 2.5	*	*	3.9 - 4.0	*	*	5.4 - 5.5	*	*
1.0 - 1.1	*	*	2.5 - 2.6	*	*	4.0 - 4.1	*	*	5.5 - 5.6	*	*
1.1 - 1.2	*	*	2.6 - 2.7	*	*	4.1 - 4.2	*	*	5.6 - 5.7	*	*
1.2 - 1.3	*	*	2.7 - 2.8	*	*	4.2 - 4.3	*	*	5.7 - 5.8	*	*
1.3 - 1.4	*	*	2.8 - 2.9	*	*	4.3 - 4.4	*	*	5.8 - 5.9	*	*
1.4 - 1.5	*	*	2.9 - 3.0	*	*	4.4 - 4.5	*	*	5.9 - 6.0	*	*



 <p>Accredited for compliance with ISO/IEC 17025 - Testing.</p> <p>ACCREDITATION NUMBER: 4679</p> <p>WORLD RECOGNISED ACCREDITATION</p>	REMARKS:
	<p>APPROVED SIGNATORY:  Jarrod Gornall</p> <p>DATE: 24/10/2023</p>

**AITKEN ROWE Testing Laboratories Pty Ltd**

ARTL Griffith: 17b Battista Street, Griffith NSW 2680

\*

PAGE: 1

OF: 1

REQUEST NO: \*

ORDER NO: \*

**TEST REPORT - RELATIVE COMPACTION**

CLIENT : WORMTECH PTY LTD - YENDA, NSW

PROJECT : EXISTING VERMICULTURE FACILITY,  
LOT 487, No. 224, WOOD ROAD,  
YENDA, NSW

TEST METHODS : AS1289.2.1.1

AS1289.5.4.1

AS1289.5.7.1

AS1289.5.8.1

SECTIONS REPRESENTED : EXISTING VERMICULTURE PAD

LOT No. : \*

LAYER &amp; MATERIAL : FILL/NATURAL - CLAY

DATE/S OF LAB COMPACTION: 20/09/2023

SAMPLING PROCEDURE: AS1289.1.2.1

CLAUSE: 6.4b

DATE OF SAMPLING (LAB COMP.) 19/09/2023

REGISTRATION No. : R12b **GD23-436**

SAMPLE OR SITE No.	1	2	3	4	5	6
EASTING	428575	428575	428675	428675	428552	428552
NORTHING	6208750	6208750	6208930	6208930	6208881	6208881
DATE OF TEST (FIELD DENSITY)	19/09/23	19/09/23	19/09/23	19/09/23	19/09/23	19/09/23
TIME OF TEST	1320	1330	1340	1400	1410	1420
DEPTH BELOW FINAL LEVEL (mm)	300	0	300	0	300	0
REDUCED LEVEL (m)	*	*	*	*	*	*
TESTED DEPTH (mm)	300	300	300	300	300	300
FIELD DRY DENSITY (0.01 t/m <sup>3</sup> )	1.48	1.75	1.48	1.68	1.71	1.44
FIELD WET DENSITY (0.01 t/m <sup>3</sup> )	1.90	1.99	1.80	1.93	1.89	1.75
PCWD. PEAK CONVERTED WET DENSITY (0.01 t/m <sup>3</sup> )	1.86	1.89	1.88	1.89	1.88	1.97
APCWD. ADJ. PEAK CONVERTED WET DENSITY (0.01 t/m <sup>3</sup> )	*	*	*	*	*	*
MAXIMUM DRY DENSITY (0.01 t/m <sup>3</sup> )	*	*	*	*	*	*
ADJUSTED MAXIMUM DRY DENSITY (0.01 t/m <sup>3</sup> )	*	*	*	*	*	*
OPTIMUM MOISTURE CONTENT (0.5 %)	28.0	18.5	24.0	19.5	16.0	22.0
ADJUSTED OPTIMUM MOISTURE CONTENT (0.5 %)	*	*	*	*	*	*
FIELD MOISTURE VARIATION (0.5 %)	0.0	5.0	2.5	4.5	5.5	0.5
(WET/DRY):	WET	DRY	DRY	DRY	DRY	DRY
CONTENT ACTUAL (0.5 %)	28.0	14.0	22.0	15.0	10.5	21.5
MOISTURE RATIO (0.5 %)	100.5	74.0	90.5	76.5	66.0	97.5
OVERSIZE DETERMINATIONS (as required)	+37.5mm (0.1%)	0.0	0.0	0.0	0.0	0.0
	-37.5 +19.0mm (0.1%)	0.0	0.0	0.0	0.0	0.0
DENSITY OF OVERSIZE (where applicable) (0.01 t/m <sup>3</sup> )	N/A	N/A	N/A	N/A	N/A	N/A
FRACTION TESTED (mm)	-19.0	-19.0	-19.0	-19.0	-19.0	-19.0
COMPACTIVE EFFORT	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD
TIME FROM ADDITION OF ADDITIVE TO LAB. COMPACTION	N/A	N/A	N/A	N/A	N/A	N/A
MD DETERMINATION BEFORE/AFTER COMPACTION	After	After	After	After	After	After
DENSITY RATIO (0.5 %)	101.5	105.5	95.5	102.5	100.5	89.0
SPECIFIED DENSITY RATIO (%)	N/A	N/A	N/A	N/A	N/A	N/A

REMARKS: \*

\*

Accredited for compliance with  
ISO/IEC 17025 - Testing.

ACCREDITATION NUMBER: 4679

APPROVED SIGNATORY: Michael Scremin

DATE: 18/10/2023

**AITKEN ROWE Testing Laboratories Pty Ltd**

ARTL Griffith: 17b Battista Street, Griffith NSW 2680

\*

**TEST REPORT: GEOTECHNICAL INVESTIGATION - SOIL ANALYSIS**

CLIENT : WORMTECH PTY LTD - YENDA, NSW  
 JOB DESCRIPTION : PRELIMINARY GEOTECHNICAL INVESTIGATION  
 EXISTING VERMICULTURE FACILITY,  
 LOT 487, No. 224 WOOD ROAD, YENDA, NSW

PAGE 1 OF 1

SAMPLED BY: ARTL

DATE SAMPLED: 19/09/2023

DATE SUBMITTED: 19/09/2023

SAMPLING METHOD: AS1289.1.2.1

SAMPLING CLAUSE: 6.5.3

DATES TESTED: 21/09/23-26/10/23

ORDER No.: \*

MATERIAL SOURCE : IN-SITU BOREHOLES

PROPOSED USE : DESIGN

MATERIAL TYPE : REFER TO BOREHOLE LOGS

REGISTRATION No : R28 **GS23-347**

SAMPLE NUMBER :		1A	1B	3A	3B	3C	*
SAMPLING LOCATION :		BH1	BH1	BH3	BH3	BH3	*
DEPTHS BETWEEN WHICH SAMPLES TAKEN (mm) :		0-250	250-600	0-100	100-400	400-1500	*
TESTS	TEST ELEMENT	*	*	*	*	*	*
AS1289.3.6.1	PASS 100.0mm SIEVE %	*	*	*	*	*	*
	PASS 75.0mm SIEVE %	*	*	*	*	*	*
	PASS 53.0mm SIEVE %	*	*	*	*	*	*
	PASS 37.5mm SIEVE %	*	*	*	*	*	*
	PASS 26.5mm SIEVE %	*	*	*	*	*	*
	PASS 19.0mm SIEVE %	*	*	*	*	*	*
	PASS 13.2mm SIEVE %	*	*	*	*	*	*
	PASS 9.50mm SIEVE %	*	*	*	*	*	*
	PASS 6.70mm SIEVE %	*	*	*	*	*	*
	PASS 4.75mm SIEVE %	*	*	*	*	*	*
	PASS 2.36mm SIEVE %	*	*	*	*	*	*
AS1289.3.1.2	LIQUID LIMIT %	62	55	33	*	35	*
AS1289.3.2.1	PLASTIC LIMIT %	14	13	16	*	17	*
AS1289.3.3.1	PLASTICITY INDEX	48	42	17	*	18	*
	PREPARATION METHOD	AS1289.1.1-5.3	AS1289.1.1-5.3	AS1289.1.1-5.3	*	AS1289.1.1-5.3	*
AS1289.5.1.1	STANDARD MAX. DRY DENSITY t/m <sup>3</sup>	*	1.50	*	*	1.67	*
(NOT DRY PREPPED)	OPTIMUM MOISTURE CONTENT %	*	27.9	*	*	20.1	*
	OVERSIZE MATERIAL % RETAINED ON 19.0mm	*	0	*	*	0	*
	LL METHOD OF CURING TIME DETERMINATION	*	VISUAL	*	*	VISUAL	*
	CURING DURATION HOURS	*	171	*	*	171	*
AS1289.3.4.1	LINEAR SHRINKAGE %	17.0	*	*	12.5	*	*
(PREP-AIR DRIED)	LENGTH OF MOULD mm	253	*	*	253	*	*
	MOULDING MOISTURE CONDITIONING METHOD	AS1289.3.1.2	*	*	AS1289.3.1.2	*	*
	CRUMBLING (CR) OR CURLING (CU) OCCURRED	CA	*	*	CA	*	*
AS1289.2.1.1	FIELD MOISTURE CONTENT %	*	*	*	*	*	*
AS1289.3.8.1	EMERSON CLASS	4	4	*	3	*	*
(AIR DRIED)	TYPE OF WATER	DISTILLED	DISTILLED	*	DISTILLED	*	*

WORLD RECOGNISED  
ACCREDITATIONAccredited for compliance  
with ISO/IEC 17025 - Testing.ACCREDITATION NUMBER:  
4679\*  
\*  
\*

All samples are oven dried and dry sieved during prep. unless otherwise stated

APPROVED SIGNATORY : .....

Jarrod Gornall

DATE: 26/10/2023



# AITKEN ROWE Testing Laboratories Pty Ltd

ARTL Griffith: 17b Battista Street, Griffith NSW 2680

PAGE 1 OF 1

## TEST REPORT

SOIL REACTIVITY- DETERMINATION OF THE SHRINKAGE INDEX OF A SOIL

### SHRINK SWELL INDEX

CLIENT: WORMTECH PTY LTD - YENDA, NSW

JOB DESCRIPTION PRELIMINARY GEOTECHNICAL INVESTIGATION

EXISTING VERMICULTURE FACILITY,

LOT 487, No. 224 WOOD ROAD, YENDA, NSW

SAMPLED BY: ARTL

DATE SAMPLED: 19/9/2023

DATE SUBMITTED: 19/9/2023

DATE TESTED (from): 25/09/2023

DATE TESTED (to): 4/10/2023

No. OF SAMPLES: 2

TEST METHODS: AS1289.7.1.1

AS1289.2.1.1

REGISTRATION NO: R26 **GS23-347**

SAMPLE No.:	1A	3B	*
BOREHOLE No.:	BH1	BH3	*
DEPTH (mm):	0-250	100-400	*
NATURE OF SPECIMEN (U50/REMOULDED):	U50	U50	*
<b>SHRINK SWELL INDEX (ISS):</b>	<b>3.16</b>	<b>2.59</b>	*
INITIAL SWELL M.C. %:	17.6	16.5	*
FINAL SWELL M.C. %:	24.7	17.2	*
DESCRIPTION OF SOIL:	CLAY	CLAY	*
ESTIMATED PERCENTAGE OF INERT INCLUSIONS:	<2%	<2%	*
EXTENT OF SOIL CRUMBLING DURING SHRINKAGE:	N/A	N/A	*
EXTENT OF CRACKING OF SHRINKAGE SPECIMEN:	MINOR	MINOR	*
(WHERE REMOULDED) SPECIMEN DENSITY (t/m <sup>3</sup> ):	*	*	*
MOISTURE ADDED TO ACHIEVE OMC (%):	*	*	*
COMPACTIVE EFFORT (BLOWS/ LAYER):	*	*	*
SAMPLE No.:	*	*	*
BOREHOLE No.:	*	*	*
DEPTH:	*	*	*
NATURE OF SPECIMEN (U50/REMOULDED):	*	*	*
SHRINK SWELL INDEX (ISS):	*	*	*
INITIAL SWELL M.C. %:	*	*	*
FINAL SWELL M.C. %:	*	*	*
DESCRIPTION OF SOIL:	*	*	*
ESTIMATED PERCENTAGE OF INERT INCLUSIONS:	*	*	*
EXTENT OF SOIL CRUMBLING DURING SHRINKAGE:	*	*	*
EXTENT OF CRACKING OF SHRINKAGE SPECIMEN:	*	*	*
(WHERE REMOULDED) SPECIMEN DENSITY (t/m <sup>3</sup> ):	*	*	*
MOISTURE ADDED TO ACHIEVE OMC (%):	*	*	*
COMPACTIVE EFFORT (BLOWS/ LAYER):	*	*	*



Accredited for compliance with  
ISO/IEC 17025 - Testing.

ACCREDITATION NUMBER: 4679

APPROVED SIGNATORY:

Jarrod Gornall

DATE: 24/10/2023



# Aitken Rowe Testing Laboratories Pty Ltd

ARTL Griffith: 17b Battista Street, Griffith NSW 2680

## PERMEABILITY / DISPERSION REPORT

CLIENT: WORMTECH PTY LTD - YENDA, NSW  
PROJECT: PRELIMINARY GEOTECHNICAL INVESTIGATION  
EXISTING VERMICULTURE FACILITY,  
LOT 487, No. 224 WOOD ROAD, YENDA, NSW

PAGE 1 OF 1

SAMPLED BY: ARTL

DATE SAMPLED: 19/09/2023

DATE SUBMITTED: 19/09/2023

TEST DATE/S: 21/09/23-  
6/10/23

ORDER No.: \*

TEST METHODS: AS1289.6.7.2

AS1289.5.1.1

AS1289.2.1.1

\*

REGISTRATION No: R23 **GS23-347**

MATERIAL TYPE: REFER TO BOREHOLE LOGS  
SOURCE OF MATERIAL: IN-SITU BOREHOLES  
PORTION OF STRUCTURE: EXISTING VERMICULTURE PAD  
SURCHARGES ADDED: 2.65  
PRESSURE APPLIED: 3KPa  
% RETAINED ON NOMINAL SIEVE: NIL  
NOMINAL SIEVE SIZE: -19.0

SAMPLE No.	TEST PIT No.	DEPTH (m)	MAX. DRY DENSITY (t/m <sup>3</sup> )	OPTIMUM MOISTURE (%)	DRY DENSITY OF SPECIMEN (t/m <sup>3</sup> )	MOULDING MOISTURE (%)	ACTUAL % OF MDD	PERMEABILITY m / sec AS1289.6.7.2	EMERSON CLASS AS1289.3.8.1
1B	BH1	250-600	1.50	27.9	1.50	28.0	100	8x10 <sup>-10</sup>	4
3C	BH3	400-1500	1.67	20.1	1.59	20.0	95	9x10 <sup>-9</sup>	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*

REMARKS: \*

\*

APPROVED SIGNATORY:

Jarrod Gornall

DATE: 10/10/2023

**AITKEN ROWE TESTING LABORATORIES PTY LTD**

ARTL Wagga: 4/2 Riedell Street, Wagga Wagga NSW 2650

**TEST REPORT - GRADING/HYDROMETER**

CLIENT: WORMTECH PTY LTD - YENDA, NSW

JOB DESCRIPTION: PRELIMINARY GEOTECHNICAL INVESTIGATION

EXISTING VERMICULTURE FACILITY

LOCATION: LOT 487, No. 224 WOOD ROAD,  
YENDA, NSW

PAGE: 1 OF 4

SAMPLE No.: 1A

SAMPLED BY: ARTL

DATE SAMPLED: 19/09/2023

DATE SUBMITTED: 19/09/2023

TEST METHOD: AS1289.3.6.3  
AS1289.3.6.1

TEST HOLE: BH1

DEPTH: 0-250mm

TEST DATES: 12-14/10/2023

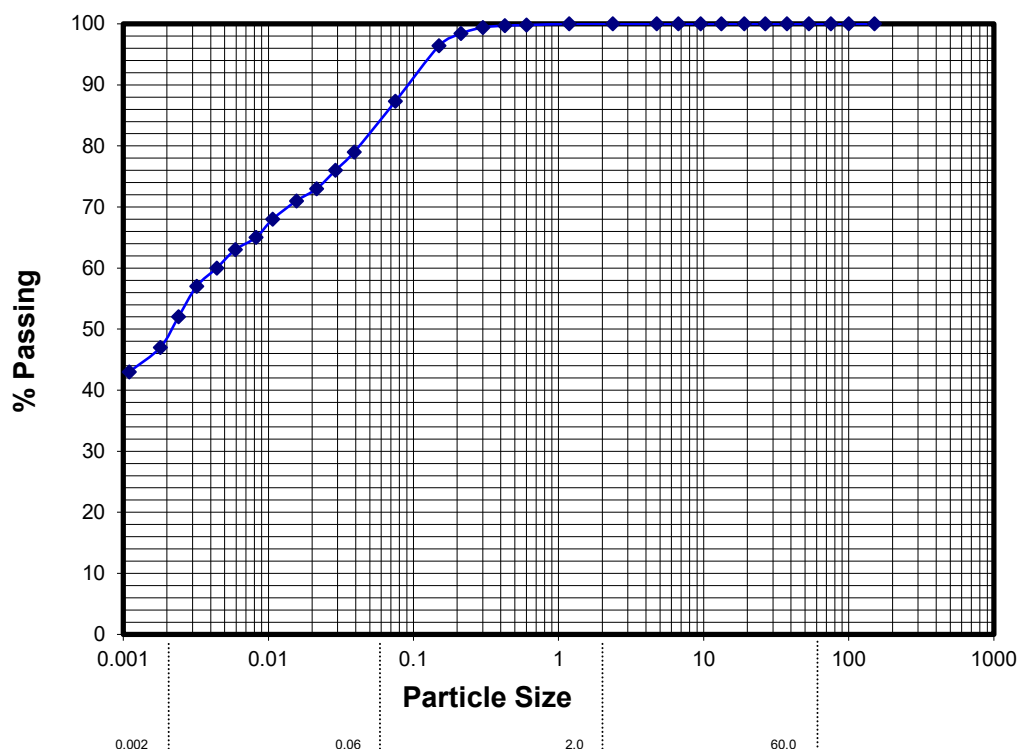
HYDROMETER TYPE: BULB

REGISTRATION No.: R36 **GS23-347****METHOD OF DISPERSION**

- i). AGENT ☒
- ii). MIXER ☒
- iii). HYDROMETER ☒
- CALIBRATED IN g/l

PERCENTAGE LOSS IN PRETREATMENT: NIL

SOIL CLASSIFICATION: Silty CLAY; high plasticity, with fine to coarse sand



Particle Size (mm)	% Passing
150	100
100	100
75	100
53	100
37.5	100
26.5	100
19	100
13.2	100
9.5	100
6.7	100
4.75	100
2.36	100
1.18	100
0.6	99.8
0.425	99.7
0.3	99.4
0.212	98.4
0.15	96.4
0.075	87.3
0.06	80.5
0.02	72.0
0.006	61.9
0.002	48.7

CLAY	SILT 32%			SAND 19%			GRAVEL 0%			COBBLES
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	
49%	13%	10%	9%	12%	7%	1%	0%	0%	0%	0%

Accredited for compliance with ISO/IEC 17025  
- Testing.

ACCREDITATION NUMBER: 4679

APPROVED  
SIGNATORY

Jarrod Gornall

DATE: 23/10/2023

**AITKEN ROWE TESTING LABORATORIES PTY LTD**

ARTL Wagga: 4/2 Riedell Street, Wagga Wagga NSW 2650

**TEST REPORT - GRADING/HYDROMETER**

CLIENT: WORMTECH PTY LTD - YENDA, NSW

JOB DESCRIPTION: PRELIMINARY GEOTECHNICAL INVESTIGATION

EXISTING VERMICULTURE FACILITY

LOCATION: LOT 487, No. 224 WOOD ROAD,  
YENDA, NSW

PAGE: 2 OF 4

SAMPLE No.: 1B

SAMPLED BY: ARTL

DATE SAMPLED: 19/09/2023

DATE SUBMITTED: 19/09/2023

TEST METHOD: AS1289.3.6.3  
AS1289.3.6.1

TEST HOLE: BH1

DEPTH: 250-600mm

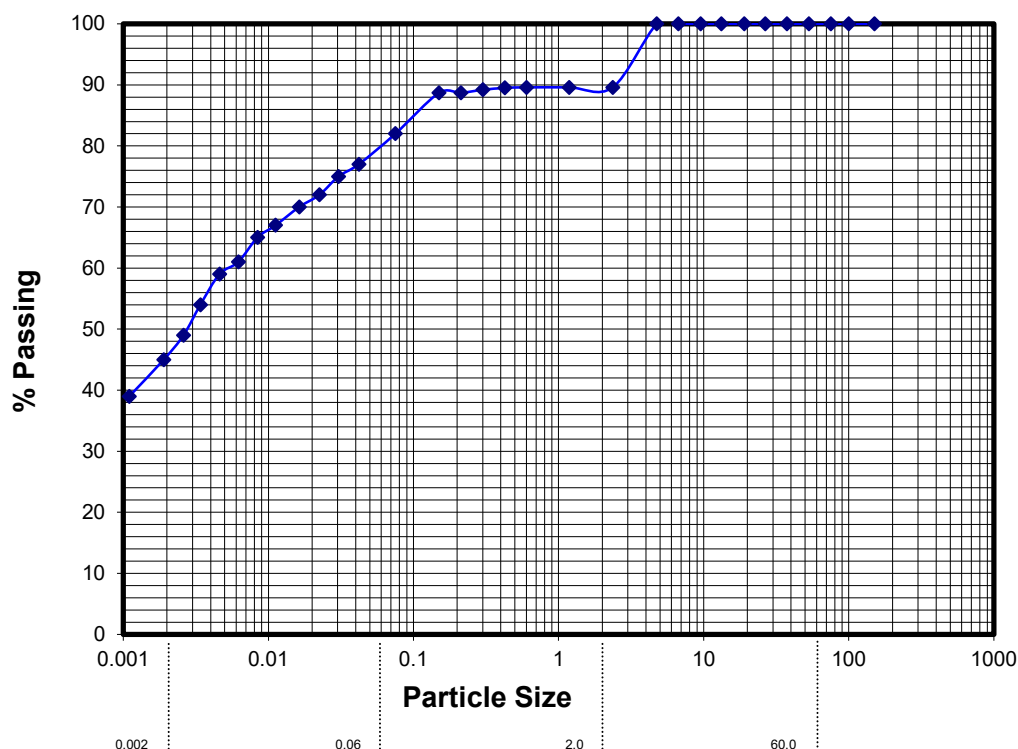
TEST DATES: 12-14/10/2023

HYDROMETER TYPE: BULB

REGISTRATION No.: R36 **GS23-347****METHOD OF DISPERSION**i). AGENT ☒ii). MIXER ☒iii). HYDROMETER ☒

CALIBRATED IN g/l

PERCENTAGE LOSS IN PRETREATMENT: NIL

SOIL CLASSIFICATION: Silty CLAY; high plasticity, trace fine to  
coarse sand, trace fine gravel

Particle Size (mm)	% Passing
150	100
100	100
75	100
53	100
37.5	100
26.5	100
19	100
13.2	100
9.5	100
6.7	100
4.75	100
2.36	89.6
1.18	89.6
0.6	89.6
0.425	89.5
0.3	89.2
0.212	88.7
0.15	88.7
0.075	82
0.06	77.3
0.02	70.5
0.006	60.1
0.002	45.1

CLAY	SILT 32%			SAND 13%			GRAVEL 9%			COBBLES
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	
45%	15%	10%	7%	8%	4%	2%	9%	0%	0%	0%

Accredited for compliance with ISO/IEC 17025  
- Testing.

ACCREDITATION NUMBER: 4679

APPROVED  
SIGNATORY

Jarrod Gornall

DATE: 23/10/2023

**AITKEN ROWE TESTING LABORATORIES PTY LTD**

ARTL Wagga: 4/2 Riedell Street, Wagga Wagga NSW 2650

PAGE: 3 OF 4

SAMPLE No.: 3A

SAMPLED BY: ARTL

DATE SAMPLED: 19/09/2023

DATE SUBMITTED: 19/09/2023

TEST METHOD: AS1289.3.6.3

AS1289.3.6.1

TEST HOLE: BH3

DEPTH: 0-100mm

TEST DATES: 12-14/10/2023

HYDROMETER TYPE: BULB

REGISTRATION No.: R36 **GS23-347****TEST REPORT - GRADING/HYDROMETER**

CLIENT: WORMTECH PTY LTD - YENDA, NSW

JOB DESCRIPTION: PRELIMINARY GEOTECHNICAL INVESTIGATION

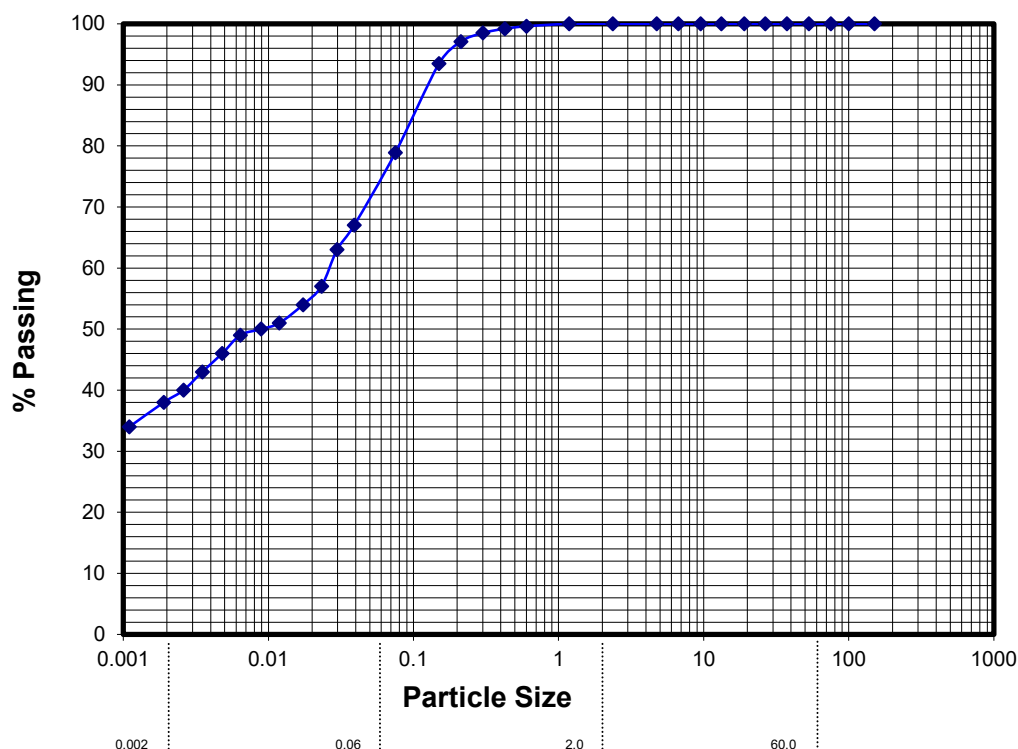
EXISTING VERMICULTURE FACILITY

LOCATION: LOT 487, No. 224 WOOD ROAD,  
YENDA, NSW**METHOD OF DISPERSION**i). AGENT ☒ii). MIXER ☒iii). HYDROMETER ☒

CALIBRATED IN g/l

PERCENTAGE LOSS IN PRETREATMENT: NIL

SOIL CLASSIFICATION: Sandy Silty CLAY; low plasticity, fine to coarse sand



Particle Size (mm)	% Passing
150	100
100	100
75	100
53	100
37.5	100
26.5	100
19	100
13.2	100
9.5	100
6.7	100
4.75	100
2.36	100
1.18	100
0.6	99.6
0.425	99.2
0.3	98.5
0.212	97.1
0.15	93.5
0.075	78.9
0.06	69.0
0.02	56.2
0.006	46.8
0.002	37.7

CLAY	SILT 31%			SAND 31%			GRAVEL 0%			COBBLES
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	
38%	9%	9%	13%	19%	11%	1%	0%	0%	0%	0%

Accredited for compliance with ISO/IEC 17025  
- Testing.

ACCREDITATION NUMBER: 4679

APPROVED  
SIGNATORY

Jarrod Gornall

DATE: 23/10/2023

**AITKEN ROWE TESTING LABORATORIES PTY LTD**

ARTL Wagga: 4/2 Riedell Street, Wagga Wagga NSW 2650

**TEST REPORT - GRADING/HYDROMETER**

CLIENT: WORMTECH PTY LTD - YENDA, NSW

JOB DESCRIPTION: PRELIMINARY GEOTECHNICAL INVESTIGATION

EXISTING VERMICULTURE FACILITY

LOCATION: LOT 487, No. 224 WOOD ROAD,  
YENDA, NSW

PAGE: 4 OF 4

SAMPLE No.: 3C

SAMPLED BY: ARTL

DATE SAMPLED: 19/09/2023

DATE SUBMITTED: 19/09/2023

TEST METHOD: AS1289.3.6.3  
AS1289.3.6.1

TEST HOLE: BH3

DEPTH: 400-1600mm

TEST DATES: 12-14/10/2023

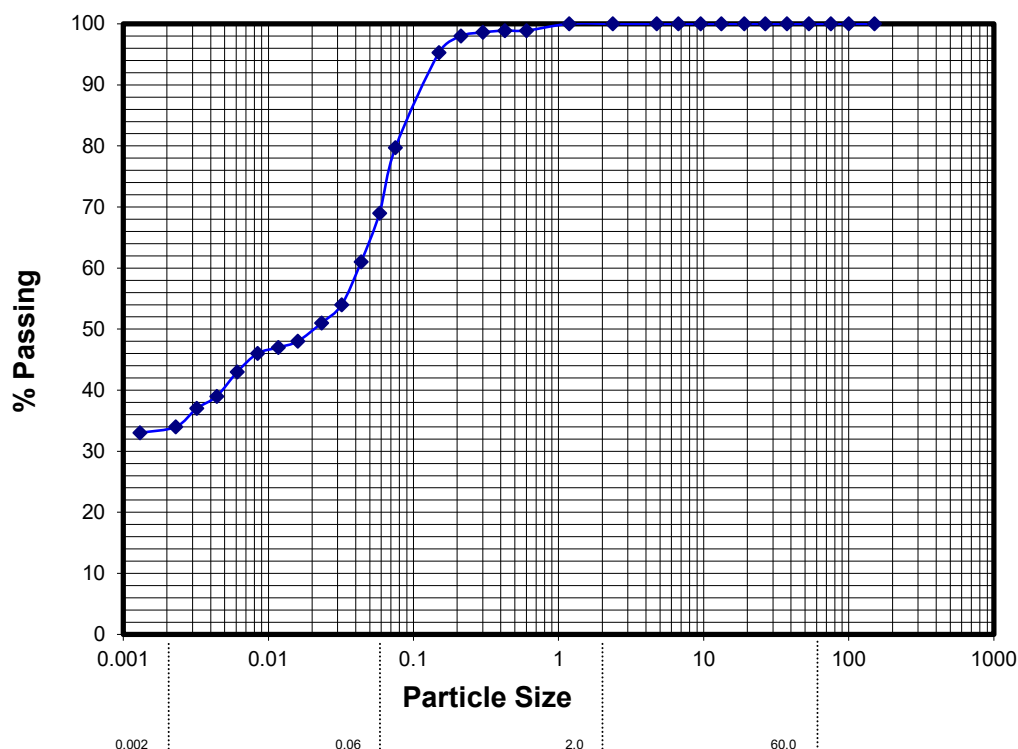
HYDROMETER TYPE: BULB

REGISTRATION No.: R36 **GS23-347****METHOD OF DISPERSION**i). AGENT ☒ii). MIXER ☒iii). HYDROMETER ☒

CALIBRATED IN g/l

PERCENTAGE LOSS IN PRETREATMENT: NIL

SOIL CLASSIFICATION: Sandy Silty CLAY; low plasticity, fine to coarse sand



Particle Size (mm)	% Passing
150	100
100	100
75	100
53	100
37.5	100
26.5	100
19	100
13.2	100
9.5	100
6.7	100
4.75	100
2.36	100
1.18	100
0.6	98.9
0.425	98.9
0.3	98.6
0.212	98
0.15	95.3
0.075	79.7
0.06	66.2
0.02	50.1
0.006	41.5
0.002	34.1

CLAY	SILT 32%			SAND 34%			GRAVEL 0%			COBBLES
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	
34%	7%	9%	16%	22%	10%	1%	0%	0%	0%	0%

Accredited for compliance with ISO/IEC 17025  
- Testing.

ACCREDITATION NUMBER: 4679

APPROVED  
SIGNATORY

Jarrod Gornall

DATE: 23/10/2023





**Aitken Rowe Testing Laboratories Pty Ltd**

**Registration Number: GS23-347**

Page 1 of 1

**Client:** WORMTECH PTY LTD – YENDA, NSW  
**Project:** PRELIMINARY GEOTECHNICAL INVESTIGATION  
EXISTING VERMICULTURE FACILITY,  
LOT 487, No. 224 WOOD ROAD, YENDA, NSW  
SITE PHOTO