

12 January 2023

# STAGE 2 WOOING TREE SUBDIVISION 64 SHORTCUT ROAD, CROMWELL

# **GEOTECHNICAL COMPLETION REPORT**

Wooing Tree Property Development LP

TGA2022-0063AB Rev1

TGA2022-0063AB										
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22 June 2022	А	Initial draft for internal review								
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#### 1. INTRODUCTION

This Geotechnical Completion Report (GCR) has been prepared for Wooing Tree Property Development LP as part of the documentation to be submitted to Central Otago District Council (CODC) following residential subdivision development in accordance with the consent granted through the Covid-19 Recovery Act 2020 (ref FTC000029).

This report covers the earthworks construction for Stage 2 located within the Wooing Tree Estate development, as shown on the appended Site Location Plan (*Drawing 01*). This report is intended to be used for geotechnical certification purposes for 127 new residential lots numbered from 200 to 515 created from existing Lot 200 DP 560535.

It provides a review of existing geotechnical investigations, relevant earthfill quality control data together with as-built plans provided by Paterson Pitts Group (PPG) and Veros Ltd (Veros).

### 2. DESCRIPTION OF SUBDIVISION

The contour of the original landform, prior to development earthworks, is similar to that of the as-built contour presented on the PPG plans in *Appendix A*, and depicts level topography at approximately RL 212m.

As depicted on the appended Cut Fill Contour Plan (refer *Appendix A*), the ground levels have been modified slightly by earthworks typically involving a shallow cut across the subdivision of up to 1m to create level building platforms and provide fill for the backfill of an irrigation pond in the northeast. Fill depths within the pond were up to 4.5m.

Access to Stage 2 is via Magnum Drive through the completed Stage 1, Wooing Tree Development. Stage 2 consists of 127 flat residential lots ranging from 252m<sup>2</sup> to 731m<sup>2</sup>, 3 roads named Magnum Drive, Road 4 and Road 5 and green spaces. Individual lots are accessible from the roads and 6 shared accessways.

Wastewater and concentrated stormwater flows will connect to Council reticulation via the developments network currently under construction.

## 3. DESCRIPTION OF EARTHWORKS

Bulk earthworks were carried out by Civil Construction Ltd (CCL) across Stage 2 from November 2021 to February 2022.

During subdivision earthworks, the original grape vines were pulled out with the roots either excavated or the main organic root ball removed by 'root-raking' with tynes on the back of a bulldozer. Test pits were excavated prior to and following the root-raking, which suggest that the raking process was effective in breaking up and removing the main root ball mass. Roots that did remain appeared to comprise individual small diameter discontinuous root fibres and strands spread throughout the sandy soil profile.

Prior to backfill the irrigation pond, it was first undercut to expose the natural subgrade. Bulk earthworks then commenced, which consisted of root raking a borrow pit area to obtain clean site won material which was placed in 300mm lifts across the decommissioned irrigation pond footprint and compacted.

Earthworks observations and testing were undertaken by Civil Construction Limited and Central Testing Services (CTS) and certified by B F Whitham. A copy of the B F Whitham Quality Assurance Report presenting a summary of observations and test results can be found in *Appendix C*.

Civil works within Stage 2 are currently being undertaken by Benchmark Construction Ltd and are expected to be completed in November 2022.

#### 4. GROUND MODEL

#### 4.1. Published Geology

Published geological maps<sup>1</sup> for the Cromwell area depict the regional geology as comprising Middle Quaternary glacial outwash deposits consisting of silts to sandy gravels associated with the last glacial retreat approximately 11.7k years ago.

Based on the known history of the site and surrounding land levels, some superficial depths of fill could be anticipated as a result of soft landscaping.

#### 4.2. Field Investigations

CMW Geosciences undertook a geotechnical investigation across the Wooing Tree Estate Development in late March 2022 to assess the near surface soil profile. All fieldwork was carried out under the direction of CMW in general accordance with the NZGS guidance<sup>2</sup>. Logging of soils was done by a CMW Engineering Geologist in general accordance with NZGS guidelines<sup>3</sup>.

The scope of work carried out was as follows:

- A walkover survey of the site was undertaken to assess the general landform and site conditions;
- Nine test pits, denoted TP01 to TP09, were excavated using a 20 tonne hydraulic excavator to depths or between 3.0 metres and 3.5 metres below existing ground levels. Engineering Logs and Photographs of the test pits are presented in *Appendix B*;
- Dynamic Cone Penetrometer (DCP) tests were carried out adjacent to the test pits to a maximum depth of 3.8m (refusal). DCP results show that the soils are loose to very dense with values ranging from 2 to 20 blows per 100mm of penetration.

The approximate locations of the respective test pits referred to above are shown on the Geotechnical Investigation Plan (*Drawing 01*)

Following bulk earthworks, post-construction testing within each lot across Stage 2 was undertaken by CTS between 4 and 23 May 2022 and comprised:

• A post-construction hand auger borehole with Dynamic Cone Penetrometer testing within the centre of each lot to a target depth of 2.0m. DCP test results along with a description of the materials encountered in the hand auger boreholes are presented in *Appendix B*.

#### 4.3. Stratigraphic Units

The ground conditions encountered during the investigations are consistent with the published geology for the area. The geological units encountered during the above investigation are summarised in Table 1 below.

Roots and root balls associated with the sites previous land use (vineyard) were encountered during the site investigation to depths of up to 500mm.

<sup>&</sup>lt;sup>1</sup> www.gns.cri.nz

<sup>&</sup>lt;sup>2</sup> NZ Geotechnical Society et al, New Zealand Ground Investigation Specification, Vol 1, April 2017.

<sup>&</sup>lt;sup>3</sup> NZ Geotechnical Society (2005), Field Description of Soil and Rock, Guideline for the field classification and description of soil and rock for engineering purposes.

Table 1: Summary of Soil Stratigraphy									
Unit	Appro depth to	ximate top (m)	Approximate thickness (m)						
	Min	Мах	Min	Max					
Topsoil – Organic SILT *	0.0	0.0	0.0	0.2					
Silty Fine SANDS *	0.0	0.2	0.25	1.4					
Fine to Coarse SANDS & GRAVELS	0.2	0.5	>1.5	>2.0					
Notes: *Unit not found within every test pit.									

#### 4.4. Groundwater

Groundwater was not encountered in any of the investigation holes and test pits. A review of a Cromwell Aquafer Study<sup>4</sup> indicates that the regional groundwater level is located at approximately RL 194m, approximately 17m below the existing ground level which approximately coincides with the water level of nearby Lake Dunstan.

### 5. EVALUATION OF COMPLETED LANDFORM

#### 5.1. Contractors Work

The majority of the construction observations and testing were overseen by others. As such, we have relied on the Contractor's diligence and observations and test records of CCL, B F Whitham and PPG for construction observations to ensure that the works have been carried out in accordance with:

- a) The approved Contract drawings and design details.
- b) The approved Contract specifications.
- c) The conditions of Resource, Earthworks and Building Consents where applicable.
- d) The relevant Geotechnical Investigation reports, recommendations, and site instructions.
- e) That all as-built information and other details provided to the Client and/or CMW Geosciences (NZ) Limited are accurate and correct in all respects.

#### 5.2. Engineered Fill

Earthfill quality control testing and certification was carried out by CCL and overseen by B F Whitham. The Quality Control Report presented in *Appendix C* details that the engineered fill placed across the Stage 3 area has been constructed in accordance with NZS4431:1989 and meets the compaction control criteria of at least 95% of the materials Maximum Dry Density (MDD).

#### 5.3. Liquefaction

Soil liquefaction is a process where typically, granular soils develop excess pore water pressures during cyclic (earthquake) loading. Following the onset of liquefaction, the shear strength and stiffness of the liquefied soil is effectively lost, potentially causing excessive differential settlement of the ground surface, bearing capacity failure and collapse of structures and low angle lateral spreading of slopes in liquefiable soils.

<sup>&</sup>lt;sup>4</sup> Rekker, J. Otago Regional Council. Cromwell Terrace Aquifer Study, 2012.

As detailed in section 4.4, the groundwater is anticipated to be approximately 17m deep, therefore by definition a 17m thick crust of non-liquefiable material mantles the site. As such the risk of liquefaction and surface manifestation is assessed to be low where the consideration of liquefaction effects during the design of foundations within the Stage 2 lots is not considered necessary.

### 5.4. Slope Stability

As depicted on the plans in Appendix A, the as-built landform and surrounding area is flat with no significant slopes within the vicinity of the site. As such, the risk of slope instability is considered low and has not been considered further.

#### 5.5. Foundation Recommendations

Post construction borehole test results suggest the soil below the topsoil layer meets the requirement of "Good Ground" in accordance with NZS3604, and therefore a geotechnical ultimate bearing capacity of 300kPa may be assumed for the construction of shallow strip and pad foundations such as those designed to NZS3604.

Within lots located across the former vineyard, as shown on *Drawing 02*, the following specific foundation options are recommended:

- Over-excavate former vine rows to nominally 0.5m wide x 0.5m deep, fill to subgrade level with suitability compacted fill / proof rolled under the guidance of a Chartered Professional Engineer, adopt standard NZ3604 foundations.
- Proof roll subgrade and adopt standard raft foundation (ie Firth Ribraft) to account for zones of potential lower bearing capacity along former vine rows. The position of the raft should avoid former vine rows being directly beneath external corners or edges of the foundation. Over-excavation and compacted fill replacement along those rows, as described above, would be required in that case.
- Proof roll subgrade and adopt TC2 foundation (ie Firth TC2 Ribraft) regardless of location relative to former vine rows.

As with all residential building construction, it is recommended the building platform be subject to routine foundation inspection by the area building inspector at the time of building construction. Where any isolated lenses of soft or loose soils are encountered during routine foundation construction inspections, they must be over-excavated and replaced with suitably compacted granular filing or footings widened / depend accordingly necessitating the involvement of a Chartered Professional Engineer.

#### 5.6. Settlement

Subject to compliance with the further earfthfill recommendations detailed in Section 5.9 and foundation recommendations in Section 5.5, load induced static settlements are expected be negligible for lightweight timber-framed dwellings.

The grape vine root fibres and strands that remain through the soil profile are generally isolated and mixed with the sandy subgrade and are not considered likely to lead to foundation settlement.

## 5.7. Building Consent Investigations

In accordance with NZS3604:2011 a building with a plan area up to 200m<sup>2</sup> requires a minimum of four tests across the plan area to determine bearing capacity of the soils. One additional test is required for each 100m<sup>2</sup> additional plan area.

The post construction hand augers appended to this report may be used to accompany the findings of future site-specific foundation bearing assessment so long it is consistent with the site-specific testing.

Given the consistency of the sandy soil profile across the site, as determined from the subdivision post construction hand augers, consideration may be given to relaxing the building consent testing frequency.

### 5.8. Strength Reduction Factor

As required by Section B1/VM4 of the New Zealand Building Code Handbook, a strength reduction factor of 0.50 or 0.80 should be applied to all recommended geotechnical ultimate soil capacities in conjunction with their use in factored design load cases for static and earthquake overload conditions respectively.

### 5.9. Seismic Site Subsoil Class

The geological units encountered beneath the site comprise soil strength materials, which with respect to the seismic site subsoil category defined in Section 3.1.4 of NZS1170.5, is defined as having an unconfined compressive strength (UCS) < 1MPa.

Based on these ground conditions encountered within the geotechnical investigation and Rekker. J study, the seismic site subsoil category is assessed as being Class D (deep soil site) in accordance with NZS1170.5.

## 5.10. Cut and Fill Restrictions

The lots are relatively flat to gently sloping and as such it is anticipated that only minor cut to fill earthworks will be required to create level building platforms. Normal topsoil stripping, conditioning and appropriate compaction where applicable for any filling must be in accordance with the requirements of the Central Otago District Council. As stipulated in NZS3604, any filling greater than 0.6m thick shall be deemed appropriate by a Chartered Professional Engineer and subject to routine construction inspections and testing.

## 5.11. Stormwater Controls

In terms of future stormwater management, it is important that due care is paid to the design and construction of appropriate stormwater disposal systems. These systems should collect all runoff from roofs and paved areas, which should connect directly into the public stormwater drainage network or into onsite stormwater attenuation systems (soakage pits/trenches).

It should be noted that any future site owner will become responsible for Erosion and Sediment Control Measures that comply with Regional Council requirements as soon as development works begin on the site. Measures deemed necessary will need to be maintained until the development lot area is re-stabilised and/or stormwater is disposed to reticulation.

## 5.12. Service Trenches

The backfilling and compaction of service trenches on this subdivision were not inspected as part of CMW observations. As is normal on all subdivisions, building developments involving foundations within a 45-degree zone of influence from pipe inverts will require specific design by a Chartered Professional Engineer with a view to piling foundation loads below that zone.

## 5.13. Road Subgrade

All road subgrade preparation, inspections and certification have been completed under the direction of PPG.

#### 6. LIMITATION

This report is provided to CODC and Wooing Tree Property Development LP for their purposes alone on the express condition that it will not be relied upon by any other person. It is important that prospective purchasers satisfy themselves as to any specific conditions pertaining to their particular land interest.

Although regular site visits have been undertaken for observation, for providing guidance and instruction and for testing purposes, the geotechnical services scope did not include full time site presence. To this end, our appended Suitability Statement also relies on the Contractors' work practices and assumes that when we have not been present to observe the work, it has been completed to high standards and in accordance with the drawings, instructions and consent conditions provided to them.

Similarly, it assumes that all as-built information and other details provided to the Client and/or CMW by other members of the project team are accurate and correct in all respects.

Additional important information regarding the use of your CMW report is provided in the 'Using your CMW Report' document attached to this report.

This report has been prepared for use by Wooing Tree Property Development LP in relation to the Stage 2 Wooing Tree Subdivision at 64 Shortcut Road, Cromwell in accordance with the scope, proposed uses and limitations described in the report. Should you have further questions relating to the use of your report please do not hesitate to contact us.

Where a party other than Wooing Tree Property Development LP seeks to rely upon or otherwise use this report, the consent of CMW should be sought prior to any such use. CMW can then advise whether the report and its contents are suitable for the intended use by the other party.

#### USING YOUR CMW GEOTECHNICAL REPORT

Geotechnical reporting relies on interpretation of facts and collected information using experience, professional judgement, and opinion. As such it generally has a level of uncertainty attached to it, which is often far less exact than other engineering design disciplines. The notes below provide general advice on what can be reasonably expected from your report and the inherent limitations of a geotechnical report.

#### Preparation of your report

Your geotechnical report has been written for your use on your project. The contents of your report may not meet the needs of others who may have different objectives or requirements. The report has been prepared using generally accepted Geotechnical Engineering and Engineering Geology practices and procedures. The opinions and conclusions reached in your report are made in accordance with these accepted principles. Specific items of geotechnical or geological importance are highlighted in the report.

In producing your report, we have relied on the information which is referenced or summarised in the report. If further information becomes available or the nature of your project changes, then the findings in this report may no longer be appropriate. In such cases the report must be reviewed, and any necessary changes must be made by us.

#### Your geotechnical report is based on your project's requirements

Your geotechnical report has been developed based on your specific project requirements and only applies to the site in this report. Project requirements could include the type of works being undertaken; project locality, size and configuration; the location of any structures on or around the site; the presence of underground utilities; proposed design methodology; the duration or design life of the works; and construction method and/or sequencing.

The information or advice in your geotechnical report should not be applied to any other project given the intrinsic differences between different projects and site locations. Similarly geotechnical information, data and conclusions from other sites and projects may not be relevant or appropriate for your project.

#### Interpretation of geotechnical data

Site investigations identify subsurface conditions at discrete locations. Additional geotechnical information (e.g. literature and external data source review, laboratory testing etc) are interpreted by Geologists or Engineers to provide an opinion about a site specific ground models, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist due to the variability of geological environments. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. Interpretation of factual data can be influenced by design and/or construction methods. Where these methods change review of the interpretation in the report may be required.

#### Subsurface conditions can change

Subsurface conditions are created by natural processes and then can be altered anthropically or over time. For example, groundwater levels can vary with time or activities adjacent to your site, fill may be placed on a site, or the consistency of near surface conditions might be susceptible to seasonal changes. The report is based on conditions which existed at the time of investigation. It is important to confirm whether conditions may have changed, particularly when large periods of time have elapsed since the investigations were performed.

#### Interpretation and use by other design professionals

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical report. To help avoid misinterpretations, it is important to retain the assistance of CMW to work with other project design professionals who are affected by the contents of your report. CMW staff can explain the report implications to design professionals and then review design plans and specifications to see that they have correctly incorporated the findings of this report.

#### Your report's recommendations require confirmation during construction

Your report is based on site conditions as revealed through selective point sampling. Engineering judgement is then applied to assess how indicative of actual conditions throughout an area the point sampling might be. Any assumptions made cannot be substantiated until construction is complete. For this reason, you should retain geotechnical services throughout the construction stage, to identify variances from previous assumption, conduct additional tests if required and recommend solutions to problems encountered on site.

A Geotechnical Engineer, who is fully familiar with the site and the background information, can assess whether the report's recommendations remain valid and whether changes should be considered as the project develops. An unfamiliar party using this report increases the risk that the report will be misinterpreted.

#### Environmental Matters Are Not Covered

Unless specifically discussed in your report environmental matters are not covered by a CMW Geotechnical Report. Environmental matters might include the level of contaminants present of the site covered by this report, potential uses or treatment of contaminated materials or the disposal of contaminated materials. These matters can be complex and are often governed by specific legislation.

The personnel, equipment, and techniques used to perform an environmental study can differ significantly from those used in this report. For that reason, our report does not provide environmental recommendations. Unanticipated subsurface environmental problems can have large consequences for your site. If you have not obtained your own environmental information about the project site, ask your CMW contact about how to find environmental risk-management guidance.

**Drawings** Drawing 01 – Geotechnical Investigation Plan Drawing 02 – NZ3604 Compliant Site Plan



C:\USERS\HARSHVEGAD\CMW GEOSCIENCES PTY LTD\TAURANGA OFFICE - TGA2022-0063 64 SHORTCUT ROAD, CROMWELL\DRAWINGS\TGA2022-0063 TEST LOCATION PLAN.DWG

DEVELOPMENT LP	DRAWN:	HV	PROJECT: TGA2022-0063
ROAD,	CHECKED:	MS	DRAWING: 01
L	REVISION:	0	SCALE: 1:3000
N PLAN	DATE:	14/06/2022	SHEET: A3 L

Appendix B: Field Investigation Records

Appendix C: B F Whitham Quality Assurance Report Appendix D: CTS Post Construction Boreholes

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 1 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	S: Veros,	stephenc	averos.	co.nz		Attention: S. Cornwall				
Job Descripti	on: Wooing Tree Subdivision, Cromwell									
	0017		DOMES	ED AUZO 4402 1000 m	( = 2) I ( 200	0 D 107 C 1	· .			
	SCAL	A PENEI	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 200 -	- See Page 127 for locat	ion plan			
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(mm)	(mm/blow)	100 mm	500 mm	(kPa)						
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100 - 150	16.7	(	10	160	0	50 100 150	200 250 300 350 400			
150 - 200	16.7	0	18	160	0					
200 - 250	8.3	0		267	100					
250 - 300	16.7	,		160	200					
300 - 350	16.7	6		160	200					
350 - 400	16.7	-	-	160	300					
400 - 450	25.0	5	16	119	400					
450 - 500	10.7			100						
550 - 600	16.7	5		160	500					
600 - 650	10.0			233	600					
650 - 700	6.3	13		330	700					
700 - 750	10.0	12	34	233	/00					
750 - 800	6.3	13	34	330	800					
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1150 - 1200	10.0	15		233	<b>Č</b> 1300					
1200 - 1250	12.5			198	1400					
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1300 - 1350	10.0	10	34	233	1500					
1350 - 1400	10.0	10	- 34	233	1600					
1400 - 1450	10.0	14		233						
1450 - 1500	5.6			359	1700					
1500 - 1550	10.0	10		233	1800					
1550 - 1600	10.0			233	1000					
1650 - 1700	12.5	8	26	198	1900					
1700 - 1750	12.5			198	2000					
1750 - 1800	12.5	8		198	2100					
<sup>1</sup> Bearing capacity re-	sults stated above have b	een inferred	from Fig 2 –	Determination of allowable	2100	Inferred Bearing C	apacity (50mm Intervals)			
bearing pressure un conditions at the tin	naer small structures, M. ne of test and will be hea	J. Stockwell. wily influence	the results a d if significa	tre relative to the ground int gravel fraction is present.	2200	Inferred Bearing C	apacity (300mm intervals)			
The inferred values	should be used conserve	atively. IANZ	endorsemen	t does not apply to these values.	2300		· · · · · · · · · · · · · · · · · · ·			
NZS 3604:2011, Sec	ction 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be						
assumed to be not l	ess than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth						
greater depths.	an of the whitest jooting	5 octow the u	naersiae oj ti	ie proposeu jooung unu 5 ui						
]]	FIELD LOG: NZ	Geotechn	ical Socie	ety Guidelines 2005 (Not I	ANZ Accredited	l); Lot 200 - See Page 12	27 for location plan			
Depth (mm)	Description									
0 to 50	Topsoil & vegetat	ion (organ	ic matter)	•						
50 to 1400 *	Brown Gravelly S Silt, non-plastic.	ilty SAND	. Moist. T	ightly packed. Gravel, suba	angular to subrou	nded, maximum particle	e size 37.5mm; Sand, fine to coarse;			
* NZS 3604:2011	, Section 3.3.6 requi	res a minin	um 50mm	diameter auger hole to be co	mpleted to the dep	oth of each scala penetrom	eter probe. Unable to complete past the			
deptn indicated.										
Note:	Its stated -1		to the	novinate test 1	neconded CTC	comto no lightite f.	w automa lated use -fill: - 1-t-			
The rest     This rep	uis statea above ar ort may not be rep	e specific roduced e	wine app xcept in fi	vioximate test locations as full	recordea. CIS a	ccepts no hability for an	y extrapolated use of this data.			
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e: 4 to 2	23-May-22				
Checked By:	emplus					, cC	REDITER			



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

# **Central Testing Services**

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz

#### Page 2 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: V	Veros, <u>stephenc@veros.co.nz</u>										Attention: S. Cornwall					7
Job Descripti	on: V	1: Wooing Tree Subdivision, Cromwell															
<b>*</b>		8															
	_	SCALA	<b>PENET</b>	ROMETI	ER (NZS 4402:1988, Test	6.5.2);	Lot 20	1 – See	Page	127 for	r locat	ion pl	lan				
Denth	Penetr	ation	Blo	ws /	Inferred Allowable												
(mm)	(mm/ł	ation plow)	100	300	Bearing Capacity <sup>1</sup>												
()	(	,,	mm	mm	(kPa)			_									
0 - 50	12.	.5	12		198			]	nferro	ed Bea	ring	Сара	ncity (l	kPa)			
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350 - 400	5.	0	23		388		200										
400 - 450	8	3			267		300							-			
450 - 500	5.0	0	16	49	388		400										
500 - 550	12.	.5	10		198		500					L					
550 - 600	8.	3	10		267		500										
600 - 650	10.	.0	1(		233		600					r it it it is a start of the st			-		
650 - 700	4.4	5	10		416		700										
700 - 750	12.	.5	0	34	198		/00										
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800 - 850	10.	.0	10		233		900										
850 - 900	10.	.0	10		233												
900 - 950	8.	3	12		267	1)	1000										
950 - 1000	8.	3			267	nn	1100								_		
1000 - 1050	10.	.0	10	29	233	I (L											
1050 - 1100	10.	.0			233	ptł	1200										
1100 - 1150	12.	.5	7		198	De	1300										
1150 - 1200	10.	./			100	,									l		
1200 - 1250	12.	<u>.5</u>	9		198		1400								_		
1230 - 1350	4	5			416		1500									_	
1350 - 1400	7	<i></i>	18	44	299								1				
1400 - 1450	6.3	3			330		1600										
1450 - 1500	5.0	6	17		359		1700										
1500 - 1550	5.0	6	15		359		1000						1				
1550 - 1600	6.	3	17		330		1800						•				
1600 - 1650	10.	.0	10	44	233		1900										
1650 - 1700	7.	1	12	44	299		2000										
1700 - 1750	7.	1	15		299		2000										
1750 - 1800	6	3	15		330		2100										
<sup>4</sup> Bearing capacity res bearing pressure up	sults stated abo ider small stru	ove have be ctures, M.	een inferred f J. Stockwell.	rom Fig 2 – . The results a	Determination of allowable we relative to the ground		2200		Inf	erred Be	aring C	apacity	(50mm I	ntervals)			
conditions at the tin	ne of test and v	will be hea	vily influence	d if significa	nt gravel fraction is present.		2200	•	Inf	ferred Be	aring C	apacity	(300mm	intervals	)		
The inferred values	should be use	ed conserva	tively. IANZ	endorsement	t does not apply to these values.		2300										]
NZS 3604:2011, Sec	tion 3.3.7.1 (b	) states tha	at the ultimat	e bearing cap	pacity of the foundation shall be												
assumed to be not le equal to twice the w	ess than 300 k. idth of the wia	ra if the n lest footing	umber of blo below the u	vs per 100mn Iderside of th	n exceeds 5 down to a depth ne proposed footing and 3 at												
greater depths.	,,	,,		,													
]	FIELD LO	OG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredit	ted); L	ot 201	- See F	Page 1	27 for	·locati	on plan	1		
Depth (mm)	Descripti	on															
0 to 50	Topsoil &	vegetati	ion (organ	ic matter).	•												
50 to 1300 *	Brown Gr	avelly S	ilty SAND	. Moist. Ti	ightly packed. Gravel, suba	angular	to subr	oundee	1, maxi	mum p	article	e size 5	53.0mm	; Sand,	fine t	o coa	rse;
* NZS 3604-2011	Section 2 2	nastic. 6 requir	es a minim	um 50mm	diameter auger hole to be co	mnlotod	to the	lenth of	feach e	ala non	etrom	eter ni	ohe Un	able to	comnl	ete no	st the
depth indicated.	5.0011 5.5	.o i cyuli	сэ а шиш	am Somm	anancier auger nore to De Co	mpicieu		cpin 01	Cach St	ana pen	cu oni	in pr	<i></i> 01	avic 10 (	compi	cic pa	<i>51 m</i> C
Note:																	
• The resu	lts stated a	bove ar	e specific	to the app	proximate test locations as	recorde	ed. CTS	ассер	ts no li	abilitv	for an	v extr	apolate	ed use o	of this	data	
This rep	ort mav no	t be rep	roduced e.	ccept in fi	ull.			<i>P</i>			,		1		5		
···· •		-1		1.5													_
Tested By:	K. Hipki	ns, C. I	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	<b>to 23-</b> I	May-2	2							
		//															

Checked By:

emplus	
Jorgan	



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

#### Page 3 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	:	Veros, stephenc@veros.co.nz         Attention:         S. Cornwall								
Job Descripti	on:	Wooing	Tree Su	bdivisio	n, Cromwell					
		SCAL	DENET	DOMET	ED (N/75 4403-1000 T 4	(5)	L at 20	2 Saa Daga 127 f1	tion plan	
		SCALA	A PENET	KONE II ws /	LK (NZS 4402:1988, Test	0.5.2);	Lot 202	2 - See rage 12/ for loca	tion plan	
Depth	Pen	etration	100	300	Bearing Canacity <sup>1</sup>					
(mm)	(m)	m/blow)	mm	mm	(kPa)					
0 - 50		8.3	12		267			Inferred Bearin	g Capacity (kPa)	
50 - 100		8.3	12		267		(	0 50 100 150 200	250 300 350 400 450 500	
100 - 150		8.3	14	42	267		0			
150 - 200		6.3			330		100			
200 - 250		5.0 7 1	16		200	-	100			
300 - 350		12.5			198		200			
350 - 400		10.0	9		233		300			
400 - 450		10.0	15	40	233		400			
450 - 500		5.0	15	47	388		400			
500 - 550		3.8	25		471		500			
550 - 600		4.2	_		444	-	600			
650 - 650		3.0	24		388	-				
700 - 750		5.0			388	1	700			
750 - 800		4.5	21	61	416	1	800			
800 - 850		7.1	16		299	1	900			
850 - 900		5.6	10		359		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
900 - 950		10.0	10		233	1	1000			
950 - 1000		10.0	-		233	um	1100			
1000 - 1050		12.5	7	24	198	h (j	1000			
1100 - 1150		12.5			198	ept	1200			
1150 - 1200		16.7	7		160	D(	1300			
1200 - 1250		12.5	11		198		1400			
1250 - 1300		7.1	11		299					
1300 - 1350		7.1	14	35	299		1500			
1350 - 1400		7.1			299	-	1600			
1400 - 1450		0.5 12 5	10		198		1700			
1500 - 1550		12.5			198		1/00			
1550 - 1600		7.1	11		299	1	1800			
1600 - 1650		12.5	16	51	198		1900			
1650 - 1700		4.2	10	51	444		2000			
1700 - 1750	_	4.2	24		444		2000			
1/50 - 1800	sults stated	4.2 I above have b	een inferred t	rom Fig 2 -	444 Determination of allowable	-	2100		Constant (Streen Lateral)	
bearing pressure un	ider small	structures, M.	J. Stockwell.	The results a	re relative to the ground		2200	Interred Bearing	Capacity (50mm intervals)	
conditions at the tin The inferred values	ne of test a should be	ina will be hea v used conserva	vuy influence itively. IANZ	endorsement	nt gravel fraction is present. t does not apply to these values.			Inferred Bearing	Capacity (300mm intervals)	
NZS 3604:2011, Sec assumed to be not l equal to twice the w greater denths	ction 3.3.7. ess than 30 vidth of the	.1 (b) states the 00 kPa if the n e widest footing	at the ultimate umber of blog g below the un	e bearing cap ws per 100m nderside of th	pacity of the foundation shall be n exceeds 5 down to a depth ne proposed footing and 3 at		2300 -			
]	FIELD	LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredit	ted); Lot 202 - See Page	127 for location plan	
Depth (mm)	Descri	ption								
0 to 50	Topsoi	l & vegetat	ion (organ	ic matter)						
50 to 1500 *	Grey /	brown Gra 0mm: Sand	velly SAN	D with tra	ce of / minor silt. Moist. Ti non-plastic.	ightly pa	acked. C	Gravel, subangular to sub	rounded, maximum particle	
* NZS 3604:2011	, Section	3.3.6 requi	res a minim	um 50mm	diameter auger hole to be co	ompleted	to the d	lepth of each scala penetron	neter probe. Unable to complete past the	
Note:										
• The resu • This rep	ılts state ort may	ed above ar not be rep	e specific roduced e.	to the app xcept in fi	roximate test locations as ull.	recorde	ed. CTS	accepts no liability for a	ny extrapolated use of this data.	
Tested By:	K. Hip	okins, C. I	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	to 23-May-22		
Checked By:	ler.	mplus						~0	CREDITED	



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

## **Central Testing Services** 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 4 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS



**Tested By:** K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date:

**Checked By:** 

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 5 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	<u>stephenc</u>	averos.	<u>co.nz</u>		Attention:	S. Cornwall
Job Descripti	on: Wooin	g Tree Su	ibdivisio	n, Cromwell			
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 204 – Se	ee Page 127 for loca	tion plan
Denth	Equivalent	Blo	ows /	Inferred Allowable			
(mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>			
()	(mm/blow)	mm	mm	(kPa)			
0 - 50	100.0	1		36	4	Interred Bearing	Capacity (kPa)
50 - 100	100.0		-	36	0	50 100 150	200 250 300 350 400
100 - 150	50.0	3	14	68	0 +		
150 - 200	25.0			119			
200 - 250	10.0	10		233	100		
250 - 300	10.0			233	200		
350 400	7.1	14		299			
<u> </u>	5.6			350	300		
450 - 500	71	16	41	299	400		
500 - 550	10.0			233	-		
550 - 600	8.3	11		267	500		
600 - 650	10.0			233	600		
650 - 700	10.0	10		233	706		
700 - 750	16.7	-		160	700		
750 - 800	12.5	7	31	198	800		
800 - 850	10.0	14		233			
850 - 900	5.6	14		359	900		
900 - 950	12.5	0		198	1000		
950 - 1000	12.5	ð		198			
1000 - 1050	7.1	12	36	299	<u>H</u> 1100		
1050 - 1100	10.0	12	30	233	4 1200		
1100 - 1150	6.3	16		330	Jep 1200		
1150 - 1200	6.3	10		330	1300		
1200 - 1250	7.1	13		299	1400		
1250 - 1300	8.3	10		267	1500		
1300 - 1350	6.3	16	41	330	1500		
1350 - 1400	6.3			330	1600		
1400 - 1450	7.1	12		299	1700		
1450 - 1500	10.0			233	1700		
1500 - 1550	/.1	15		299	1800		
1600 - 1650	0.5			299	1900		
1650 - 1700	63	15	44	330			
1700 - 1750	71			299	2000		
1750 - 1800	7.1	14		299	2100		
<sup>1</sup> Bearing capacity res	ults stated above have	been inferred	from Fig 2 –	Determination of allowable		Inferred Bearing C	Capacity (50mm Intervals)
bearing pressure un	der small structures, M	I.J. Stockwell.	The results of a signification of the second	are relative to the ground	2200	Inferred Bearing C	Capacity (300mm intervals)
The inferred values	should be used conserv	atively. IANZ	endorsemen	t does not apply to these values.	2300		
N75 3604,2011 Sa	tion 2 2 7 1 (b) states t	at the ultime	ta haavina aa	nacity of the foundation shall be			
assumed to be not lo	ess than 300 kPa if the	number of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the w	idth of the widest footin	ig below the u	nderside of ti	he proposed footing and $\overline{3}$ at			
greuter ueptns.	FIELD LOG: NZ	Geotechr	ical Socie	ety Guidelines 2005 (Not )	ANZ Accredited)	Lot 204 - See Page 1	27 for location plan
Depth (mm)	Description	Geoteen				Lot Lot	
0 to 100	Topsoil & vegeta	tion (organ	ic matter)				
	Brown Gravelly	Silty SAND	). Moist. T	ightly nacked. Gravel. sub:	angular to subround	ed. maximum narticl	e size 37.5mm: Sand, fine to coarse:
100 to 1600 *	Silt, non-plastic.			-s, paenear Graver, sub		,	
* NZS 3604:2011,	Section 3.3.6 requ	ires a minin	num 50mm	diameter auger hole to be co	ompleted to the depth of	of each scala penetrom	eter probe. Unable to complete past the
depth indicated.							
Note:							
• The resu	lts stated above a	re specific	to the app	proximate test locations as	recorded. CTS acce	pts no liability for ar	ny extrapolated use of this data.
• This rep	ort may not be rep	produced e	xcept in f	ull.			
Tested Rv.	K Hinkins C	Pearcor	T Show	v&C Fisher Det	e. 1 to 22	-May_??	
resteu Dy:	K. IIIPKIIIS, C.	i cai sull,	1. Sliaw	a C. Fisher Dat	4 10 23	-111ay-22	
Chasked Dr.	and the	-					
спескей Ву:	romanic	/				C.C	REDITE



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 6 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros	, stephenc	<u>@veros.</u>	co.nz			Attention: S. Cornwall
Job Description	on: Wooii	ng Tree Su	bdivisio	n, Cromwell			
· · · · ·		-					
	SCA	LA PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 20	205 – See Page 127 for location plan
	Equivalent	Blo	ws /	Inferred Allowable			
Deptn	Penetration	100	300	Bearing Capacity <sup>1</sup>			
(mm)	(mm/blow)	mm	mm	(kPa)			
0 - 50	100.0			36			Informed Dooring Connector (1/Do)
50 - 100	100.0	1		36			interred bearing Capacity (Kr a)
100 - 150	25.0			119		(	0 50 100 150 200 250 300 350 400
150 - 200	16.7	- 5	18	160		0	
200 - 250	83			267			
250 - 300	83	12		267		100	
300 - 350	83			267		200	
350 400	83	12		267	1		
400 450	7.1			207	1	300	
400 - 430	7.1	14	42	299		400	
500 550	63			330		100	
550 600	6.3	16		330		500	
530 - 000	6.3			330		600	
650 700	0.3	14		330	•	000	, i i i i i i i i i i i i i i i i i i i
030 - /00	ð.3	_	-	20/		700	
700 - 750	8.3	12	37	20/	-	000	
/50 - 800	8.3			267	-	800	
800 - 850	8.3	- 11		267		900	
850 - 900	10.0			233	-		
900 - 950	8.3	12		267		1000	
950 - 1000	8.3			267	nn	1100	
1000 - 1050	12.5	8	30	198	u)	1100	
1050 - 1100	12.5	Ů	20	198	oth	1200	
1100 - 1150	8.3	10		267	)el	1200	
1150 - 1200	12.5	10		198	I	1300	
1200 - 1250	10.0	10		233		1400	
1250 - 1300	10.0	10		233			
1300 - 1350	10.0	0	21	233		1500	
1350 - 1400	12.5	9	31	198		1600	
1400 - 1450	10.0	10		233			
1450 - 1500	7.1	12		299		1700	
1500 - 1550	7.1	1.5		299		1800	
1550 - 1600	6.3	15		330		1000	
1600 - 1650	6.3			330		1900	
1650 - 1700	7.1	15	43	299		2000	
1700 - 1750	7.1	10		299		2000	
1750 - 1800	8.3	13		267		2100	
<sup>1</sup> Bearing capacity res	ults stated above have	e been inferred	from Fig 2 –	Determination of allowable			Inferred Bearing Capacity (50mm Intervals)
bearing pressure un	der small structures,	M.J. Stockwell.	The results a	re relative to the ground		2200	Inferred Bearing Capacity (300mm intervals)
The inferred values	should be used conse	wavuy injiuenc rvatively. IANZ	eu ij significa endorsemen	t does not apply to these values.		2300	
NZS 3604:2011, Sec assumed to be not le	tion 3.3.7.1 (b) states ess than 300 kPa if th	that the ultimat e number of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the w	idth of the widest foor	ting below the u	nderside of tl	ne proposed footing and 3 at			
greater acpins.	FIELD LOG: N	Z Geotechr	ical Socie	tv Guidelines 2005 (Not I	ANZ A	Accredi	dited): Lot 205 - See Page 127 for location plan
Depth (mm)	Description						
0 to 150	Tonsoil & voget	ation (organ	ic matter)				
0 10 150	Crov / brown C	rovolly Siles	SAND M	laist Tightly peaked Crow	ما وينام	ngular	er to subrounded maximum particle size 37 5mm.
150 to 1450 *	Sand, fine to co	arse: Silt no	n-nlastic	oise. Fightiy packet. Grav	ci, suba	ingular	n to subrounded, maximum particle size 57.5mm;
* NZS 3604:2011, depth indicated.	Section 3.3.6 req	uires a minin	n-plastic. num 50mm	diameter auger hole to be co	ompletee	d to the d	e depth of each scala penetrometer probe. Unable to complete past the
Note:							
The result	lts stated above	are specific	to the apr	proximate test locations as	record	ed. CT	TS accepts no liability for any extrapolated use of this data
<ul> <li>This yan</li> </ul>	art may not he	anroducad a	vcont in f	all			22 accepts no moning for any extrapolated use of this data.
- Inis rep	on muy not be h	errounced e	ncepi in fl	****			
<b>Fested By:</b>	K. Hipkins, C	. Pearson,	T. Shaw	& C. Fisher Date	e:	4 1	4 to 23-May-22
	11	/					
Checked By:	emplu	0					
•							CCREDITEN
							Test results indicated



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**CTS** 

## Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 7 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros,	<u>stephenc</u>	@veros.	<u>co.nz</u>			Attention: S. Cornwall
Job Descripti	on: Wooing	g Tree Su	ıbdivisio	n, Cromwell			
		,		,			
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 20	06 – See Page 127 for location plan
	Equivalent	Blo	ws /	Inferred Allowable			· · ·
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>			
(mm)	(mm/blow)	mm	mm	(kPa)			
0 - 50	100.0			36			
50 100	100.0	1		36	-		Inferred Bearing Capacity (kPa)
100 150	16.7		-	160			
150 200	10.7	7	18	100	-	0	0 50 100 150 200 250 300 350 400
150 - 200	12.5	-	-	198	-	0	
200 - 250	10.0	10		233	-	100	
250 - 300	10.0	-		233	-		
300 - 350	10.0	12		233	-	200	
350 - 400	7.1			299	_	300	
400 - 450	8.3	12	33	267	_		
450 - 500	8.3			267		400	
500 - 550	12.5	9		198		500	
550 - 600	10.0			233		500	
600 - 650	12.5	o		198		600	
650 - 700	12.5	o		198		=0.0	
700 - 750	16.7	-	20	160	1	700	
750 - 800	16.7	0	20	160	1	800	
800 - 850	16.7			160			
850 - 900	16.7	6		160		900	
900 - 950	25.0			119		1000	
950 - 1000	167	5		160	a (i	1000	
1000 1050	25.0		-	110	(m)	1100	
1000 - 1030	167	5	15	119	р (	1200	
1050 - 1100	10.7		-	100	pt	1200	
1100 - 1150	16./	5		160	De	1300	
1150 - 1200	25.0	-		119	_		
1200 - 1250	16.7	8		160	_	1400	
1250 - 1300	10.0	Ű	_	233	_	1500	
1300 - 1350	12.5	10	32	198		1000	
1350 - 1400	8.3	10	02	267		1600	
1400 - 1450	7.1	14		299		1700	
1450 - 1500	7.1	14		299		1/00	
1500 - 1550	7.1	14		299		1800	
1550 - 1600	7.1	14		299		1000	
1600 - 1650	7.1	14	40	299		1900	
1650 - 1700	7.1	14	42	299		2000	
1700 - 1750	7.1			299			
1750 - 1800	7.1	14		299		2100	
<sup>1</sup> Bearing capacity res	sults stated above have l	been inferred	from Fig 2 –	Determination of allowable		2200	Interred Bearing Capacity (50mm Intervals)
bearing pressure un	nder small structures, M	J. Stockwell.	The results a	are relative to the ground	1	22UU	
conditions at the tin The inferred values	ne of test and will be he	avily influence atively 14N2	ed if significa endorsemen	int gravel fraction is present. t does not apply to these values	1	2300	
ine injerreu vulues	snoutu oe useu conserv	vciy. 1/1/VZ	chuoisemen	aces not upply to these values.	1		
NZS 3604:2011, Sec	ction 3.3.7.1 (b) states th	at the ultima	te bearing cap	pacity of the foundation shall be	1		
assumed to be not le	ess than 300 kPa if the i width of the widest footing	number of blo o helow the "	ws per 100m nderside of f	m exceeds 5 down to a depth	1		
greater depths.	of the whitest foolin	5 octow the u		er proposen jooning unu 5 m	1		
]	FIELD LOG: NZ	Geotechr	ical Socie	ty Guidelines 2005 (Not 1	IANZ A	ccredi	ited); Lot 206 - See Page 127 for location plan
Depth (mm)	Description						
0 to 50	Topsoil & vegetar	tion (organ	ic matter)				
	Grev / brown Cr	velly Silte	SAND M	laist Tightly neeked Crew	el sube	ngular	to subrounded maximum narticle size 37 5mm.
50 to 1400 *	Sand, fine to com	se: Silt no	n-nlastic	ioise righty packets of av	ci, suba	igular	to subivalitation maximum particle SIZE 57.50000,
* NZS 3604:2011	Section 3.3.6 requi	res a minin	num 50mm	diameter auger hole to be co	omnleted	to the a	depth of each scala penetrometer probe. Unable to complete past the
depth indicated.					piereu		
Note.							
The res	ilts stated above a	re specifie	to the arr	provimate test locations as	rocord	d CTO	S accepts no lighility for any extranolated use of this data
- ine resu	out man not le	e specijič	w ine upp	noximule lest locallons as All	recorde	<i>a</i> . CIS	s accepts no taotany for any extrapolated use of this dala.
<ul> <li>This rep</li> </ul>	ort may not be rep	orvauced e	xcept in f	ин.			
Tested Bu	K Hinkins C	Poorsor	T Show	& C Fisher Dat	·••	1 4	to 23_May_22
resteu Dy:	к. піркіня, С.	i carson,	1. SHAW	a C. Fisher Dat	с.	41	10 25-111ay-22
~							
Checked By:	longalix	,					CCREDITE



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 8 of 127 Pages

Reference No: 22/1550

outside the scope of the

laboratory's accreditation

TESTING LABORATO

№ 434

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros, s	stephenc	<u>(a)veros.</u>	<u>co.nz</u>		Attention:	S. Cornwa	ı <b>II</b>	
Job Descripti	on: Wooing	Tree Su	bdivisio	n, Cromwell				<u></u>	
	SCAL.	DENET	DOMET	ED (N/75 4403-1000 T 4	( 5 2), I -+ 207	San Daga 127 f 1	tion plan		
	SCAL	A PENET	KUMET	LK (NZS 4402:1988, Test	0.3.2); Lot 207 -	- See Page 127 for local	lion plan		
Depth	Penetration	Bl0	ws /	Interred Allowable Bearing Consoity 1					
(mm)	(mm/blow)	100	300	bearing Capacity					
0.50	50.0	mm	mm	(KI a)		Informed Rearing	Canacity (k)	Pa)	
0 - 50	50.0	2		68		interred bearing	Сарасну (к	1 a)	
<u> </u>	50.0	-		08	0	100 200 300	0 400	500 600	700
150 200	16.7	5	17	119	0 :	····		+ • • • • • • • •	
200 - 250	10.7			233	100				
250 - 200	10.0	10		233	100				
300 - 350	10.0			233	200				
350 - 400	7.1	12		299	300				
400 - 450	5.6			359	300				
450 - 500	7.1	16	39	299	400				
500 - 550	10.0	11		233	500				
550 - 600	8.3	11		267	2000				
600 - 650	8.3	10		267	600				
650 - 700	12.5	10		198	700				
700 - 750	12.5	9	26	198					
750 - 800	10.0	,	20	233	800				
800 - 850	12.5	7		198	900				
850 - 900	16.7	,		160					
900 - 950	25.0	5		119	<b>a</b> <sup>1000</sup>				
950 - 1000	16.7			160	1100				
1000 - 1050	16.7	6	16	160					
1050 - 1100	16.7			160	41 1200 -				
1100 - 1150	25.0	5		119	la 1300				
1150 - 1200	16.7			160	1300				
1200 - 1250	25.0	5		119	1400				
1250 - 1300	16.7	1		160	1500				
1300 - 1350	50.0	2	9	68	1500				
1350 - 1400	50.0	-		08	1600				
1400 - 1450	50.0	2		69	1700				
1430 - 1300	25.0			110	1/00				
1550 - 1600	10.0	7		233	1800				
1600 - 1650	10.0		= 52	233	1900				
1650 - 1700	4.5	16	- 52	416					
1700 - 1750	2.5	-		645	2000				
Refusal					2100				
<sup>1</sup> Bearing capacity res	sults stated above have b	een inferred j	from Fig 2 –	Determination of allowable		Inferred Bearing C	apacity (50mm Inf	(ervals)	
bearing pressure un conditions at the tim	ider small structures, M. ne of test and will be hea	J. Stockwell.	The results a od if significa	re relative to the ground	2200	Inferred Bearing C	apacity (300mm ir	itervals)	
The inferred values	should be used conserve	tively. IANZ	endorsemen	t does not apply to these values.	2300		1		
N75 3604.2011 Sa	tion 3 3 7 1 (b) states the	at the ultimat	a haarina car	acity of the foundation shall be					
assumed to be not la	ess than 300 kPa if the n	umber of blo	ws per 100mi	n exceeds 5 down to a depth					
equal to twice the w	idth of the widest footing	g below the u	nderside of th	ne proposed footing and 3 at					
Sicular ucplins.	FIELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ Accredited	l): Lot 207 - See Page 1	27 for location	a plan	
Depth (mm)	Description					,,			
0 to 50	Topsoil & vegetat	ion (organ	ic matter)						
	Grey / brown Gra	velly Silty	SAND M	loist. Tightly nacked Grav	el. subangular to	subrounded, maximum	oarticle size 37	.5mm:	
50 to 1450 *	Sand, fine to coars	se; Silt, no	n-plastic.	isisti rightiy packeta Orav	, subungunar to	sasi vunutu, maannum j	Jui tiere size 57.	,	
* NZS 3604:2011,	Section 3.3.6 requir	res a minin	um 50mm	diameter auger hole to be co	mpleted to the dep	oth of each scala penetrom	eter probe. Una	ble to complete	past the
depth indicated.					·	-			
Note:									
• The resu	ilts stated above ar	e specific	to the app	proximate test locations as	recorded. CTS a	ccepts no liability for an	ıy extrapolated	l use of this da	ta.
• This rep	ort may not be rep	roduced e	xcept in fi	ull.					
Dente I D		D	TC			22 14. 22			
lested By:	K. Hipkins, C.	rearson,	1. Shaw	a C. Fisher Date	e: 4 to	23-May-22			
Checked By:	lompuluo					LCC1	REDITEN		
	-					٣	~	Test results ind	icated
						-		as not accredite	d are

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# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz Page 9 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	:	Veros, s	tephenc	averos.	co.nz			Attention: S. Cornwall
Job Descripti	on:	Wooing	Tree Su	bdivisio	n, Cromwell			
		CO.L	DENE	DOMES	ED (N/78 4402 4000 T		T . 4 20	
		SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 20	208 – See Page 127 for location plan
Depth	Pen	etration	Blo	ws /	Inferred Allowable Bearing Consoity 1			
(mm)	(mr	n/blow)	100	300	Bearing Capacity			
0 50		50.0	mm	mm	(KI a) 68	-		Inferred Bearing Capacity (kPa)
<u> </u>		50.0 16.7	4		160	-		
100 - 150	-	167		-	160	-	(	0 50 100 150 200 250 300 350 400 450 500
150 - 200		10.7	8	18	233	-	0	
200 - 250		16.7		-	160	1	100	
250 - 300		16.7	6		160			
300 - 350		16.7			160		200	
350 - 400		10.0	8		233	1	300	
400 - 450		8.3	12	25	267		10.0	
450 - 500		8.3	12	35	267		400	
500 - 550		8.3	15		267		500	
550 - 600		5.6	15		359			
600 - 650		8.3	11		267	_	600	
650 - 700		10.0			233	4	700	
700 - 750		16.7	6	23	160	-	000	
750 - 800		16.7	Ů		160	-	800	
800 - 850	-	<u>16.7</u>	6		160	-	900	
850 - 900		<u>16.7</u>			160	-	1000	
900 - 950		16.7	6		160	(u	1000	
950 - 1000		16./		-	160	mn	1100	
1000 - 1050	-	25.0 16 7	5	19	119	h ()	1000	
1100 1150		10.7			233	pt	1200	
1150 - 1200		16.7	8		160	De	1300	
1200 - 1250		16.7			160	1	1400	
1250 - 1300		12.5	7		198		1400	
1300 - 1350		7.1	12	22	299		1500	
1350 - 1400		8.3	13	32	267	1	1600	
1400 - 1450		7.1	12		299		1000	
1450 - 1500		10.0	12		233		1700	
1500 - 1550		10.0	18		233		1800	
1550 - 1600		3.8	10		471	_	1000	
1600 - 1650		5.6	19	62	359	4	1900	
1650 - 1700		5.0			388	-	2000	
1700 - 1750	-	4.2	25		444	-	2000	
1/50 - 1800	sults stated	3.8	aan infarrad :	from Fig 2_	4/1 Determination of allowable	-	2100	
bearing pressure un	der small	structures, M.	J. Stockwell.	The results a	re relative to the ground		2200	Interreo Dearing Capacity (Somm Intervals)
conditions at the tin The inferred values	ne of test a should be	nd will be hea used conserve	vily influence tively, IAN7	ed if significa ' endorsemen	nt gravel fraction is present. t does not apply to these values			Inferred Bearing Capacity (300mm intervals)
ine injerreu vulues					not apply to incoc runts.		2300	
NZS 3604:2011, Sec assumed to be not la	xtion 3.3.7. ess than 30	1 (b) states the 0 kPa if the n	at the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the w	idth of the	widest footing	g below the u	nderside of th	he proposed footing and 3 at			
greater depths.	FIELD	LOG·NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not 1	IANZ A	ccredi	lited): Lot 208 - See Page 127 for location plan
Depth (mm)	Descrip	otion					,	
0 to 20	Existin	g seal.						
20 to 100	Baseco	urse.						
100 to 1450 *	Grey / I	brown Gra	velly SAN	D with tra	ce of / minor silt. Moist. Ti	ightly p	acked. (	. Gravel, subangular to subrounded, maximum particle
* NZS 3604:2011	size 37.	5mm; Sano 3.3.6 reauir	d, fine to c res a minin	oarse; Silt um 50mm	, non-plastic. diameter auger hole to be co	omnleter	to the c	e denth of each scala penetrometer probe. Unable to complete past the
depth indicated.					and a suger sole to be to	protect		
Note:	.14 4 . 4	1 - 1 -		4- 41-			.1	
<ul> <li>The result</li> <li>This reputer</li> </ul>	uts state ort may	a above ar not be rep	e specific roduced e	to the app xcept in fi	proximate test locations as ull.	record	ea. CTS	is accepts no liability for any extrapolated use of this data.
Tested By:	K. Hip	kins, C. l	Pearson,	T. Shaw	& C. Fisher Dat	e:	4 1	4 to 23-May-22
		11						CREDIT

Checked By:

emplus

PCCNADIFED FSTING LABORATO №434

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# **Central Testing Services**

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz Page 10 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	<u>averos.</u>	co.nz			Attention:	S. Cornwall	
Job Description	on: Wooing	Tree Su	bdivisio	n, Cromwell					
	S		_	·					
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 20	9 – See Page 127 for locat	ion plan	
	<b>D</b>	Blo	ws /	Inferred Allowable					
Deptn	Penetration	100	300	Bearing Capacity <sup>1</sup>					
(mm)	(mm/blow)	mm	mm	(kPa)					
0 - 50	50.0	_		68			Inferred Bearing	Capacity (kPa)	
50 - 100	12.5	5		198			C		
100 - 150	8.3			267			0 50 100 150 200	250 300 350 40	0 450 500
150 - 200	7.1	13	30	299	-	0			
200 - 250	10.0			233	-	100			
250 - 300	7.1	12		200		100			
300 350	10.0			233	-	200			
350 400	16.7	8		160	-				
400 450	10.7			100	-	300			
400 - 450	12.5	8	23	198	-	400			
430 - 500	12.5		-	198	-				
500 - 550	12.5	7		198	-	500			
550 - 600	16.7			160	-	60.0			
600 - 650	16.7	5		100	4	000			
650 - 700	25.0		-	119	4	700			
700 - 750	16.7	5	19	160	4	00.0			
750 - 800	25.0	č		119		800			
800 - 850	12.5	9		198	4	900			
850 - 900	10.0	Í		233	1	200	╡┊┊╵╻┍─┼─╋┼━		
900 - 950	10.0	7		233		1000			
950 - 1000	25.0	/		119	um	44.00	╡┊╵╵┕━┿┓┃╎		
1000 - 1050	25.0	-	21	119	(II	1100		_	
1050 - 1100	16.7	3	21	160	th	1200			
1100 - 1150	12.5	•		198	ep				
1150 - 1200	10.0	9		233	D	1300			
1200 - 1250	10.0			233		1400		La	
1250 - 1300	10.0	10		233		1400			
1300 - 1350	50			388		1500			
1350 - 1400	4.5	21	52	416	-				
1400 - 1450	4.5			416	-	1600			
1450 1500	5.0	21		399	-	1700			
1500 1550	3.0			416	-	2100			
1500 - 1550	4.3	22		410		1800			
1600 1650	4.3			410		1000			
1000 - 1030	4.2	26	72	444	-	1900			
1050 - 1700	3.0		-	497	-	2000			
1750 1000	3.8	24		4/1	-				
1/50 - 1800	4.3	aan infama 1	from Eige ?	- Alb	4	2100	Informed Dearing (	anacity (50mm Intervale)	
bearing pressure un	der small structures, M.	J. Stockwell.	The results a	re relative to the ground		2200		abacu's (comm microars)	
conditions at the tim	e of test and will be hea	wily influenc	ed if significa	ant gravel fraction is present.			Inferred Bearing C	apacity (300mm intervals)	
The inferred values	should be used conserve	atively. IANZ	endorsemen	t does not apply to these values.		2300	1		
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states th	at the ultima	e bearing ca	vacity of the foundation shall be					
assumed to be not le	ess than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth					
equal to twice the w	ath of the widest footing	g below the u	nderside of ti	ne proposed footing and 3 at					
greater ueptits.	FIELD LOG: NZ	Geotechr	ical Socie	ety Guidelines 2005 (Not 1	IANZ A	ccredi	ited): Lot 209 - See Page 1	27 for location nlan	
Denth (mm)	Description	Stottem	Soch			u		ior iocation plan	
0 to 20	Existing cool								
0 10 20	Existing seat.								
20 to 100	Basecourse.								
100 to 1500 *	Grey / brown Gra	velly SAN	D with tra	ace of / minor silt. Moist. T	ightly p	acked.	Gravel, subangular to subr	ounded, maximum par	ticle
100 10 1000	size 19.0mm; San	d, fine to c	oarse; Silt	, non-plastic.					
* NZS 3604:2011,	Section 3.3.6 requi	res a minin	um 50mm	diameter auger hole to be co	ompletea	to the	depth of each scala penetrom	eter probe. Unable to co	mplete past the
aeptn indicated.									
Note:									
• The resu	lts stated above ar	re specific	to the app	proximate test locations as	recorde	ed. CT.	S accepts no liability for an	y extrapolated use of	this data.
• This rep	ort may not be rep	roduced e	xcept in f	ull.					
-			-						
l'ested By:	K. Hipkins, C.	Pearson,	T. Shaw	v & C. Fisher Dat	e:	4	to 23-May-22		
	11						0	CREDITE	
Checked By:	emplus	1					AC	<b>*0</b>	
								Toet	oculte indicator



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc	averos.	20.NZ		Attention: S. Co	rnwall		
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell					
F ***									
	SCALA	<b>PENET</b>	ROMETI	ER (NZS 4402:1988, Test	6.5.2); Lot 2	87 – See Page 127 for location plan	l		
	<b>D</b>	Blo	ws /	Inferred Allowable		Informed Descript Connect			
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>		Interred Bearing Capacit	y (kra)		
(mm)	(mm/blow)	mm	mm	(kPa)		0 100 200 300 400	500 600 700		
0 - 50	50.0			68	0				
50 - 100	50.0	2		68	100				
100 - 150	25.0	-	17	119	100				
150 - 200	16.7	2	17	160	200				
200 - 250	16.7	10		160	200				
250 - 300	7.1	10		299	300				
300 - 350	10.0	11		233	400				
350 - 400	8.3	11		267	500				
400 - 450	10.0	11	34	233	500				
450 - 500	8.3			267	600				
500 - 550	7.1	12		299	700				
550 - 600	10.0			233	700				
600 - 650	7.1	15		299	800				
650 - 700	6.3			330	900				
/00 - /50	5.0	18	51	388					
/50 - 800	0.3			330	<u> </u>				
850 000	0.3	18		330	E 1100				
900 - 950	5.0	_	_	500 645	1 (1				
Refusal	2.3	_	-	045	1200				
<sup>1</sup> Bearing capacity resu bearing pressure und conditions at the time The inferred values s NZS 3604:2011, Secti assumed to be not les equal to twice the wid greater depths.	ults stated above have by ler small structures, M. e of test and will be hea hould be used conserva ion 3.3.7.1 (b) states tha s than 300 kPa if the n ith of the widest footing	ven inferred J. Stockwell. vily influencc tively. IANZ at the ultimat umber of blo t below the u	from Fig 2 – The results a ed if significa endorsement e bearing cap ws per 100m nderside of th	Determination of allowable tre relative to the ground nt gravel fraction is present. t does not apply to these values. bacity of the foundation shall be n exceeds 5 down to a depth te proposed footing and 3 at	<ul> <li>1300</li> <li>1400</li> <li>1500</li> <li>1600</li> <li>1700</li> <li>1800</li> <li>1900</li> <li>2000</li> <li>2100</li> <li>2200</li> <li>2300</li> </ul>	Inferred Bearing Capacity (50)	mm Intervals)		
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not 1	ANZ Accred	ted); Lot 237 - See Page 127 for lo	cation plan		
Depth (mm)	Description								
0 to 1550	0 to 1550 Brown Gravelly Silty SAND with trace of cobbles. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 75.0mm; Sand, fine to coarse; Silt, non-plastic.								
* NZS 3604:2011, J	Section 3.3.6 requir	es a minin	num 50mm	diameter auger hole to be co	ompleted to the	depth of each scala penetrometer prob	е.		
Note:									
• The resul	ts stated above ar	e specific	to the app	proximate test locations as	recorded. Cl	S accepts no liability for any extrap	olated use of this data.		
This repo	rt may not be rep	roduced e.	xcept in fi	ull.					
Tested By: I	K. Hipkins, C. I	Pearson,	T. Shaw	& C. Fisher Dat	e: 4	to 23-May-22			





Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand
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Page 12 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	averos.	<u>co.nz</u>		Attention:	S. Cornw	all
Job Descriptio	on: Wooing	g Tree Si	ıbdivisio	n, Cromwell				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 238 -	- See Page 127 for loca	tion plan	
Denth	Equivalent	Blo	ows /	Inferred Allowable				
(mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>				
()	(mm/blow)	mm	mm	(kPa)				-
0 - 50	100.0	1		36		Inferred Bearing	Capacity (k)	Pa)
50 - 100	100.0		4	36	0	50 100 150	200 250	200 250 400
100 - 150	25.0	4	15	119	0 +	30 100 130	200 230	
150 - 200	25.0	-		119				
200 - 250	12.5	10		198	100			
250 - 300	8.3			267	200			
300 - 350	12.5	10		198				
350 - 400	8.3		-	267	300			
400 - 450	12.5	8	24	198	400			
430 - 500	12.5		-	198	500			
550 600	16.7	6		160	500			
<u> </u>	50.0			68	600			
650 - 700	50.0	2		68	700			
700 - 750	25.0		1	110	/00			
750 - 800	25.0	4	8	119	800			
800 - 850	50.0	1	1	68	900			
850 - 900	50.0	2		68	200			
900 - 950	100.0	1	1	36	<b>a</b> 1000			
950 - 1000	100.0	1		36	1100			
1000 - 1050	50.0	1.	1_	68	J.			
1050 - 1100	50.0	2	5	68	1200			
1100 - 1150	50.0			68	0 1300			
1150 - 1200	50.0	2		68			-	
1200 - 1250	50.0			68	1400			
1250 - 1300	50.0	2		68	1500			
1300 - 1350	50.0	-	1.5	68				
1350 - 1400	12.5	5	15	198	1600			
1400 - 1450	16.7	0		160	1700			
1450 - 1500	10.0	ð		233				
1500 - 1550	10.0	12		233	1800			
1550 - 1600	7.1	12	- 22	299	1900			
1600 - 1650	10.0	10	= 33	233				
1650 - 1700	10.0	10		233	2000			
Refusal					2100			
<sup>1</sup> Bearing capacity res	ults stated above have l dar small structures M	een inferred	from Fig 2 – The results	Determination of allowable	2200	——— Inferred Bearing C	apacity (50mm Int	tervals)
conditions at the tim	e of test and will be he	vily influenc	ed if significa	int gravel fraction is present.	2200	Inferred Bearing C	apacity (300mm in	itervals)
The inferred values	should be used conserv	atively. IAN2	endorsemen?	t does not apply to these values.	2300			
NZS 3604:2011, Sect	tion 3.3.7.1 (b) states th	at the ultima	te bearing ca	pacity of the foundation shall be				
assumed to be not le	ss than 300 kPa if the i	number of blo	ows per 100m	m exceeds 5 down to a depth				
equal to twice the wi greater depths.	ath of the widest footin	g below the u	inderside of th	ne proposed footing and 3 at				
F	FIELD LOG: NZ	Geotechi	nical Socie	ety Guidelines 2005 (Not l	ANZ Accredited	d); Lot 238 - See Page 1	27 for locatio	n plan
Depth (mm)	Description							
0 to 50	Topsoil & vege	tation (org	anic matte	er).				
50 4 500	Brown Gravell	y Silty SA	ND with tr	ace of cobbles. Moist. Tigh	tly packed. Grave	el, subangular to subrou	nded, maximu	m particle
50 to 700	size 75.0mm; S	and, fine t	o coarse; S	ilt, non-plastic.	• •		,	•
700 to 1200	Yellowish brow	n Gravell	y Sandy Sl	LT with minor clay. Moist	. Firm. Gravel, su	ıbangular to subrounded	l, maximum pa	article size 53.0mm;
700 10 1200	Sand, fine to co	arse; Silt,	slight plas	ticity.				
1200 to 1500 *	Brown Gravell	y Silty SA	ND with tr	ace of cobbles. Moist. Tigh	tly packed. Grave	el, subangular to subrou	nded, maximu	m particle
* N7C 2/04-2011	size 75.0mm; S	and, fine t	o coarse; S	alt, non-plastic.	mulated to the 1	th of each and	aton nu-L - T	able to complete and the
" INLS 3004:2011, denth indicated	section 5.5.6 requi	res a minin	uum 30mm	uiaineter auger hole to be co	impletea to the dep	nu oi each scàla penetrom	eier probe. Una	able to complete past the
Note.								
• The resu	Its stated above a	re specifie	to the an	provimate test locations as	recorded CTS	ccents no lighility for a	nv øxtranolata	d use of this data
<ul> <li>The result</li> <li>This way</li> </ul>	ns suice above al ort may not he ver	roduced	wine upp	noximute test tocations as all	1001404. 015 1	ccepts no tuotitity jor ar	iy extrupotute	u use oj inis ullili.
• Inis repo	ni may noi ve rep	nounced e	лсері in J	ин.				
Tested Bv:	K. Hipkins, C.	Pearson	T. Shaw	v & C. Fisher Date	e: 4 to	23-May-22	EDITE	
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						1	2	laboratory's
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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

Nº 434

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 13 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc	averos.	<u>co.nz</u>			Attention: S. Cornwall
Job Description	n: Wooing	Tree Su	bdivisio	n, Cromwell			
<b>_</b>						_	
	SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 24(	40 – See Page 127 for location plan
Denth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
()	(	mm	mm	(kPa)			
0 - 50	100.0	1		36			Inferred Bearing Capacity (kPa)
50 - 100	100.0	1		36			
100 - 150	50.0	3	11	68		0	U 50 100 150 200 250 300
150 - 200	25.0	5		119		0	
200 - 250	16.7	7		160		100	
250 - 300	12.5	/		198			
300 - 350	12.5	7		198		200	
350 - 400	16.7	'		160		300	
400 - 450	16.7	6	10	160		-	
450 - 500	16.7	U	15	160		400	
500 - 550	16.7	6		160		500	
550 - 600	16.7	U		160			
600 - 650	25.0	2		119		600	
650 - 700	50.0	3		68		700	
700 - 750	25.0		12	119		100	
750 - 800	25.0	4	12	119		800	
<u>800 - 8</u> 50	25.0	5		119		000	
850 - 900	16.7	3		160	]	900	
900 - 950	50.0	h		68	_	1000	
950 - 1000	50.0	2		68	E E	]	
1000 - 1050	25.0	4	10	119	(m	1100	
1050 - 1100	25.0	4	10	119	th	1200	
1100 - 1150	25.0		1	119	ept		
1150 - 1200	25.0	4		119	D	1300	
1200 - 1250	50.0			68	1	1400	
1250 - 1300	16.7	4		160	1	1400	
1300 - 1350	12.5		1	198	1	1500	
1350 - 1400	83	10	22	267	1	-	
1400 - 1450	12.5		1	198	1	1600	
1450 - 1500	12.5	8		108	1	1700	
1500 1550	10.0			222	1		
1550 - 1550	7 1	12		200	1	1800	
1600, 1650	167		1	160	1	1000	
1650 1700	25.0	5	25	110	•	1900	
1700 1750	23.0		1	119	•	2000	
1750 1900	23.0 9 2	8		117	•		
<sup>1</sup> Rearing canacity pasu	0.J	een inforrod	from Fig 2 _	201 Determination of allowable	1	2100	Inferred Bearing Canacity (50mm Intervals)
bearing pressure und	er small structures, M.	J. Stockwell.	The results a	ire relative to the ground		2200	Interest Sources Communication
conditions at the time	e of test and will be hea	vily influence	ed if significa	int gravel fraction is present.			Inferred Bearing Capacity (300mm intervals)
The inferred values s	nould be used conserva	ttively. IANZ	endorsemen	t aoes not apply to these values		2300 1	
NZS 3604:2011, Secti	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be			
assumed to be not les	s than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the wid greater depths.	un of the widest footing	; velow the u	naerside of ti	ie proposea jooting and 3 at			
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredit	lited); Lot 240 - See Page 127 for location plan
Depth (mm)	Description				1		
0 to 100	Tonsoil & veget	ation (ora	anic matte	er)			
0 10 100	Croy/beowr C	rovolle Cil	ant matte	Moist Looso Crearal archa	naula	to enhre	rounded maximum nartiala size 52 Amm. Sand fine to assure
100 to 1150	Grey / Drown G	raveny Sil	uy SAND.	woist. Loose. Gravel, suba	ingular	to subro	rounded, maximum particle size 53.0mm; Sand, fine to coarse;
	Grev Grevally	SAND witl	n minor cil	t Maist Tightly packed C	ravel e	uhanan	ular to subrounded, maximum particle size 26 5mm.
1150 to 1500 *	Sand. fine to cos	arse: Silt	non-nlasti	e.	11 avci, 8	uvangu	unar to subrounded, maximum particle Size 20.511111,
* NZS 3604:2011.	Section 3.3.6 reaning	es a minin	10m 50mm	diameter auger hole to be co	mpleter	to the d	depth of each scala penetrometer probe. Unable to complete past the
depth indicated.							
Note							
• The result	ts stated above ar	e snecific	to the arr	proximate test locations as	record	od CTS	S accepts no liability for any extrapolated use of this data
<ul> <li>This warns</li> </ul>	rt may not he ver	e specijie roduood o	veent in f	ull	10010		S accepts no haoting for any extrapolated use of this data.
- inis repor	n may not be rep	ouuceu e	лсері in fi				
Tested Bv: F	K. Hipkins. C. 1	Pearson.	T. Shaw	& C. Fisher Date	e:	4 t	to 23-May-22
		50119		Date Date			CCREDITER
Chooked D	and the						P C Tast usselfs indicated
спескей ву:	romanio						1 est results indicated



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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing "Central Testing Services operates as a trading trust through Central Testing Services Limited as the sole trustee."

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Page 14 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephene	averos.	<u>co.nz</u>			Attention:	S. Cornwall
Job Description	n: Wooing	g Tree Su	bdivisio	n, Cromwell				
<b>_</b>								
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 241	- See Page 127 for locat	ion plan
Denth	Equivalent	Blo	ws /	Inferred Allowable				
(mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>				
()	(mm/blow)	mm	mm	(kPa)				
0 - 50	150.0	07		25			Inferred Bearing	Capacity (kPa)
50 - 100	150.0	0.7		25		0	50 100	150 200 250 200
100 - 150	150.0	13	5	25		0 +	50 100	150 200 250 500
150 - 200	50.0	1.0	Ĩ	68				
200 - 250	50.0	3		68		100		
250 - 300	25.0			119		200		
300 - 350	16.7	4		160		200		
350 - 400	50.0	-		68		300		
400 - 450	25.0	4	11	119		400		
450 - 500	25.0	-		119		400		
500 - 550	50.0	3		68	-	500		
550 - 600	25.0		<u> </u>	119		600		
600 - 650	25.0	4		119		000		
650 - 700	25.0		-	119	-	700		
700 - 750	25.0	5	16	119	-	200		
750 - 800	16.7		-	160		800		
800 - 850	16.7	7		160		900		
850 - 900	12.5			198				
900 - 950	10.7	7		100	(II)	1000		
950 - 1000	12.5		-	198	mn	1100		
1000 - 1050	10.7	7	23	100	1 ()			
1050 - 1100	12.5		-	198	ptl	1200		
1100 - 1150	10.0	9		233	De	1300		
1150 - 1200	12.5		-	198				└── <b>╂</b> ┓ │
1200 - 1250	12.5	9		190		1400		
1230 - 1300	12.5		-	108		1500		
1350 - 1350	10.0	9	28	233		-		
1400 - 1450	10.0			233		1600		
1450 - 1500	10.0	10		233		1700		
1500 - 1550	10.0			233				
1550 - 1600	8.3	11		267		1800		
1600 - 1650	16.7	_		160		1900		
1650 - 1700	25.0	5	19	119				
1700 - 1750	25.0			119		2000		
1750 - 1800	50.0	3		68	1	2100		
<sup>1</sup> Bearing capacity resul	lts stated above have b	een inferred j	from Fig 2 –	Determination of allowable	1		Inferred Bearing C	apacity (50mm Intervals)
bearing pressure und conditions at the time	er small structures, M. of test and will he he	.J. Stockwell. wilv influence	the results of a signification of the second s	are relative to the ground ant gravel fraction is present.		2200	Inferred Bearing C	apacity (300mm intervals)
The inferred values sh	hould be used conserv	atively. IANZ	endorsemen	t does not apply to these values.		2300		
NZS 3604.2011. Secti	on 3.3.7.1 (b) states th	at the ultimat	e hearing ca	pacity of the foundation shall be				
assumed to be not less	s than 300 kPa if the r	umber of blo	ws per 100m	m exceeds 5 down to a depth				
equal to twice the wid	th of the widest footin	g below the u	nderside of t	he proposed footing and 3 at				
FI	ELD LOG: NZ	Geotechn	ical Socie	ety Guidelines 2005 (Not I	ANZ 4	Accredite	ed): Lot 241 - See Page 1	27 for location plan
Depth (mm)	Description						,,	
0.4. 1000	Brown Gravelly	y SAND wi	ith trace o	f cobbles and trace of / min	or silt.	Moist. L	oose. Gravel / cobbles, sub	angular to subrounded, maximum
0 to 1000	particle size 75.	<u>0mm; Sa</u> n	d, fine to	coarse; Silt, non-plastic.			,	- / /
1000 to 1500 *	Grey / brown S	AND with	trace of /	minor silt. Moist. Loose. Sa	and, fin	e to coars	se; Silt, non-plastic.	
* NZS 3604:2011, S	Section 3.3.6 requi	res a minin	um 50mm	diameter auger hole to be co	mpleted	d to the de	epth of each scala penetrom	eter probe. Unable to complete past the
depth indicated.				-			•	
Note:								
• The result	ts stated above ar	re specific	to the app	proximate test locations as	record	ed. CTS	accepts no liability for an	y extrapolated use of this data.
This report	rt may not be rep	roduced e	xcept in f	ull.				
		D	те			4 -	- 22 M 22	
lested By:	A. Hipkins, C.	Pearson,	I. Shaw	v & C. Fisher Date	e:	4 to	) 23-May-22	
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Checked By:

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/ / /	



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# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 15 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros	, <u>stephenc</u>	averos.	<u>co.nz</u>			Atter	ntion:	S. Cornwall	
Job Description	on: Wooi	ng Tree Su	ıbdivisio	n, Cromwell						
*										
	SCA	LA PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 24	2 - See Page 1	27 for loca	tion plan	
	Equivalent	Blo	ws /	Inferred Allowable						
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>						
(mm)	(mm/blow)	mm	mm	(kPa)						
0 - 50	100.0	mm	mm	36			Inferre	d Rearing	Canacity (kPa)	
50 100	100.0	1		36			interre	u Dearme	, capacity (M a)	
50 - 100	25.0		-	30	-	(	50	100	150 200 2	50 300
100 - 150	25.0	4	12	119		0				
150 - 200	25.0		_	119						
200 - 250	16.7	7		160		100				
250 - 300	12.5	-		198		200				
300 - 350	16.7	7		160		200				
350 - 400	12.5	,		198		300				
400 - 450	12.5	0	21	198						
450 - 500	12.5	ð	21	198		400				
500 - 550	25.0	6		119		500				
550 - 600	12.5	6		198		500				
600 - 650	16.7		1	160	1	600				
650 - 700	16.7	6		160	1	-				
700 - 750	16.7		-	160	1	700				
700 - 730	10.7	7	19	100		800				
/50 - 800	12.5	_	-	198	-	000				
800 - 850	16./	6		160	-	900				
850 - 900	16.7			160		-				
900 - 950	16.7	6		160		1000				
950 - 1000	16.7	ů		160	1m	1100		L		
1000 - 1050	25.0	5	15	119	(n	1100				
1050 - 1100	16.7	3	15	160	th	1200				
1100 - 1150	25.0	4		119	ep					
1150 - 1200	25.0	4		119	D	1300				
1200 - 1250	25.0	_		119		1400				
1250 - 1300	16.7	- 5		160		1400				
1300 - 1350	12.5			198		1500				
1350 - 1400	16.7	7	21	160		-				
1400 1450	12.5			100		1600				
1400 - 1430	12.3	- 9		198	-	1700				
1450 - 1500	10.0			233		1/00				
1500 - 1550	12.5	7		198	-	1800				
1550 - 1600	16.7			160						
1600 - 1650	16.7	7	22	160		1900				
1650 - 1700	12.5	,		198		2000				
1700 - 1750	12.5	9		198	]	2000				
1750 - 1800	12.5	o		198	]	2100	·			
<sup>1</sup> Bearing capacity res	ults stated above hav	e been inferred	from Fig 2 –	Determination of allowable			Infe	rred Bearing (	Capacity (50mm Intervals)	
bearing pressure un conditions at the time	aer small structures,	M.J. Stockwell. heavily influence	The results of ed if signification	are relative to the ground		2200	Infe	rred Bearing (	Capacity (300mm intervals)	
The inferred values	should be used conse	rvatively. IAN2	endorsemen	t does not apply to these values.		2300	L			
						2000				
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states	that the ultima	te bearing ca ws par 100m	pacity of the foundation shall be						
equal to twice the w	idth of the widest foo	ting below the u	nderside of t	he proposed footing and 3 at						
greater depths.			9							
]	FIELD LOG: N	Z Geotechi	nical Socie	ety Guidelines 2005 (Not I	IANZ A	ccredit	ed); Lot 242 -	See Page	127 for location plan	
Depth (mm)	Description									
0 to 100	Topsoil & veget	ation (organ	ic matter)							
100 to 1400 *	Grev / brown	AND with to	ace of / m	inor silt Maist Tightly noo	ked So	nd fina	to medium. Si	lt_non_nles	tic	
* N76 264.2011	Section 2.2 C =:		acc 01 / 111	diamatan awaan hala da	mel.	1 to 41 -	lonth of on -L	n, non-pias	ut.	unlate na-4 4
" NZS 3004:2011, denth indicated	, section 3.3.6 req	uires a minin	uum 30mm	uiaineter auger hole to be co	mpietea	to the d	ертп от еасп sca	ua penetron	ieier prode. Unadie to col	uplete past the
aepin maicated.										
Note:										
• The resu	lts stated above	are specific	to the app	proximate test locations as	recorde	ed. CTS	accepts no lia	bility for a	ny extrapolated use of t	this data.
• This rep	ort may not be r	eproduced e	except in f	ull.						
			_ 0							
Fested By:	K. Hipkins, C	. Pearson	, T. Shav	v & C. Fisher Date	e:	4 t	o 23-May-22	2		
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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

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Page 16 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros, s	tephenc	(a)veros.	co.nz			Attention: S. Cornwall
Job Description	on: Wooing	Tree Su	<u>ibdivisio</u>	n, Cromwell			
						_	
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 24.	43 – See Page 127 for location plan
Denth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
(iiiii)	(11111/01011)	mm	mm	(kPa)			
0 - 50	25.0	6		119			Inferred Bearing Capacity (kPa)
50 - 100	12.5	0		198			0 50 400 450 200 250 200 250 400 450 500
100 - 150	8.3	14	44	267		0.4	0 50 100 150 200 250 300 350 400 450 500
150 - 200	6.3	14	44	330			
200 - 250	4.2	24		444		100	
250 - 300	4.2	24		444		200	
300 - 350	5.0	21		388		200	
350 - 400	4.5	21		416		300	
400 - 450	8.3	12	47	267		100	
450 - 500	8.3	12	4/	267		400 :	
500 - 550	7.1	14		299		500	
550 - 600	7.1	14		299		-	
600 - 650	10.0	10		233	1	600	
650 - 700	10.0	10		233		700	
700 - 750	7.1	12	33	299			∃       <b>         </b>
750 - 800	10.0	14	33	233	1	800	
800 - 850	8.3	11		267	1	900	
850 - 900	10.0			233	1		
900 - 950	12.5	8		198		1000	
950 - 1000	12.5	0		198	u u	1100	
1000 - 1050	16.7	6	21	160	(D	1100	
1050 - 1100	16.7	U	21	160	oth	1200	
1100 - 1150	12.5	7		198	)ep	1200	
1150 - 1200	16.7	,		160	Γ	1300 :	
1200 - 1250	25.0	7		119		1400	
1250 - 1300	10.0	'		233			
1300 - 1350	7.1	14	28	299		1500	
1350 - 1400	7.1	14	20	299		1600	
1400 - 1450	12.5	7		198			
1450 - 1500	16.7	1		160		1700	
1500 - 1550	10.0	12		233		1800	
1550 - 1600	7.1	12		299		1000	
1600 - 1650	8.3	13	35	267		1900	
1650 - 1700	7.1	15	55	299		2000	
1700 - 1750	10.0	10		233		2000	
1750 - 1800	10.0	10		233	4	2100	
' Bearing capacity res	ults stated above have b der small structures M	een inferred J. Stockwell	from Fig 2 – The results i	Determination of allowable are relative to the ground		2200	Inferred Bearing Capacity (50mm Intervals)
conditions at the tin	ie of test and will be hea	vily influence	ed if significa	int gravel fraction is present.		2200	Inferred Bearing Capacity (300mm intervals)
The inferred values	should be used conserve	tively. IANZ	endorsemen	t does not apply to these values.		2300	
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states the	at the ultimat	te bearing ca	pacity of the foundation shall be			
assumed to be not le	ess than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the w greater depths.	uun oj ine widest footing	; velow the u	naersiae of ti	ie proposea jooting and 3 at			
	FIELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not 1	IANZ A	ccredit	ited); Lot 243 - See Page 127 for location plan
Depth (mm)	Description			-			
0 to 50	Topsoil & vegetat	ion (organ	ic matter)				
50 to 1450 *	Grev / brown SAN	D with tr	ace of / mi	nor silt. Moist Tightly nag	ked Sa	nd, fine	e to medium: Silt. non-plastic.
* NZS 3604-2011	Section 3 3 6 room	es a minin		diameter auger hole to be of	mnloter	I to the o	denth of each scala nenetrometer proba Unable to complete past the
depth indicated.	Section 5.5.0 requi	<i>cs a 1111111</i>	iam Somm	unameter auger note to be et	mpiciet	10 1110 0	acpin or cach scara peneti onicier probe, Onable to complete past the
Note:							
• The room	Its stated above av	e snecific	to the am	proximate test locations as	record	od CTS	S accents no lighility for any extrapolated use of this data
<ul> <li>This ron.</li> </ul>	ort may not he ren	e specijie roduced o	xcent in f	ull.	10010		o accepts no haoning for any extrapolated use of this data.
- Inis rep	on muy not be rep	ounceu e	леері in J	****			
Tested Bv:	K. Hipkins, C. I	Pearson.	T. Shaw	& C. Fisher Dat	e:	4 t	to 23-May-22
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							PCO



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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

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Reference No: 22/1550

outside the scope of the

laboratory's accreditation

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	:	Veros, s	stephenc(	<u>averos.</u>	co.nz			Attention: S. Cornwall
Job Descripti	on:	Wooing	Tree Su	bdivisio	n, Cromwell			
A		0						
		SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 24	244 – See Page 127 for location plan
Donth	Don	otration	Blo	ws /	Inferred Allowable			
(mm)	ren (mr	n/blow)	100	300	Bearing Capacity <sup>1</sup>			
(iiiii)	(iiii	II/ 010 w )	mm	mm	(kPa)			
0 - 50		16.7	7		160			Inferred Bearing Capacity (kPa)
50 - 100		12.5	/		198			
100 - 150		8.3	15	46	267			0 50 100 150 200 250 300 350 400 450 500
150 - 200		5.6	15	46	359		0	
200 - 250		4.2			444		100	
250 - 300		4.2	24		444		100	
300 - 350		5.6			359		200	
350 - 400		5.6	18		359		300	
400 - 450		5.6			359		500	
450 - 500		6.3	17	53	330		400	D
500 - 550		5.6	10		359		50.0	
550 - 600		5.6	18		359		500	
600 - 650	1	7.1		1	299	1	600	
650 - 700		12.5	11		198			
700 - 750	1	10.0		1	233	1	700	
750 - 800		10.0	10	29	233		800	
800 - 850	1	12.5	1	1	198		200	
850 900		12.5	8		108		900	
900 950		16.7	<u> </u>		170		1000	
950 1000		16.7	6		160	n)	1000	
1000 1050		16.7			160	mr	1100	
1000 - 1050	-	10.7	6	17	100	1 ()		
1050 - 1100		10./		-	110	ptl	1200	
1100 - 1150	-	25.0	5		119	De	1300	
1150 - 1200	-	16.7			160		2000	
1200 - 1250	-	16.7	5		160		1400	0
1250 - 1300	-	25.0			119		1500	
1300 - 1350		10.0	11	28	233		1200	
1350 - 1400		8.3			267		1600	
1400 - 1450		8.3	12		267			
1450 - 1500	_	8.3			267		1700	
1500 - 1550	_	10.0	11		233		1800	
1550 - 1600		8.3			267			
1600 - 1650		12.5	9	28	198		1900	D
1650 - 1700		10.0	,	20	233		2000	
1700 - 1750		12.5	8		198		2000	
1750 - 1800		12.5	0		198		2100	
' Bearing capacity res	sults stated	above have b	een inferred j	from Fig 2 –	Determination of allowable		2200	Inferred Bearing Capacity (50mm Intervals)
conditions at the tim	uer small . ne of test a	structures, M. nd will be hea	J. SIOCKWell. wily influence	ine results a ed if significa	int gravel fraction is present.		2200	Inferred Bearing Capacity (300mm intervals)
The inferred values	should be	used conserve	tively. IANZ	endorsemen	t does not apply to these values.		2300	
N75 3604.2011 Sa	tion 3 3 7	1 (b) states the	at the ultimat	a haarina ca	acity of the foundation shall be			
assumed to be not la	ess than 30	0 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the w	idth of the	widest footing	g below the u	nderside of th	he proposed footing and $\hat{3}$ at			
greater depths.		LOC: N7	Castal	iaal 6'	ty Cuidalina- 2005 (N + 1	A N/7 - 4		dited). Lat 244 See Dage 127 for location alon
Denth (	D	LUG: NZ	Geotechn	iical Socie	ay Guidennes 2005 (Not I	ANZ A	ccredi	uneu); Lot 244 - See rage 12 / for location plan
Deptn (mm)	Descri	ption						
0 to 200	Topsoil	& vegetat	ion (organ	ic matter)	•			
200 to 1300 *	Grey / I	brown Gra	velly SAN	D with tra	ce of silt. Moist. Tightly pa	cked. (	Gravel,	l, subangular to subrounded, maximum particle size 53.0mm;
	Sand, f	ine to coars	se; Silt, no	n-plastic.				
* NZS 3604:2011,	Section	3.3.6 requi	res a minim	um 50mm	diameter auger hole to be co	mpleted	to the	e depth of each scala penetrometer probe. Unable to complete past the
aepin maicated.								
Note:					• , , .• .•		1 000	
• The resu	ilts state	d above ar	e specific	to the app	proximate test locations as	record	ed. CT	TS accepts no liability for any extrapolated use of this data.
• This rep	ort may	not be rep	roduced e.	xcept in fi	ull.			
	17		D					4 4 22 3 4 22
lested By:	к. Нір	kins, C.	Pearson,	I. Shaw	a C. Fisher Date	e:	4	4 to 23-May-22
Checked By:	len	nfhlio						CCREDITE
-	,							P 60
								Test results indicated
								as not accredited are



# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 18 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	<u>averos.</u>	co.nz		Attention:	S. Cornwall	
Job Description	on: Wooin	g Tree Su	ıbdivisio	n, Cromwell				
A	•	-						
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 245	- See Page 127 for loca	tion plan	
Denth	Demotion	Blo	ws /	Inferred Allowable				
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>				
(mm)	(mm/blow)	mm	mm	(kPa)				
0 - 50	16.7	_		160		Inferred Bearing	Canacity (kPa)	
50 - 100	8.3	9		267		Interret Dearing	cuputity (III u)	
100 - 150	71		-	299	0	100 200	300 400	500 600
150 - 200	33	22	49	523	0 +	·····		
200 - 250	5.0		-	388	100		1	
250 - 200	63	18		330	100			
300 - 350	83			267	200			
350 400	7.1	13		207				
400 450	10.0		-	233	300			
400 - 430	9.2	11	31	255	400			
430 - 300	0.5			109			1	
500 - 550	12.5	7		198	500			
550 - 600	10./			160	600			
600 - 650	/.1	13		299	000			
650 - 700	8.3			267	700			
700 - 750	10.0	9	31	233	000			
750 - 800	12.5		_	198	800			
800 - 850	10.0	9		233	900			
850 - 900	12.5			198				
900 - 950	8.3	9		267	<b>a</b> <sup>1000</sup>			
950 - 1000	16.7	-		160	1100 E			
1000 - 1050	25.0	5	20	119	9 1100			
1050 - 1100	16.7	0		160	1200			
1100 - 1150	16.7	6		160	Jac 1200			
1150 - 1200	16.7	U		160	1300			
1200 - 1250	12.5	7		198	1400			
1250 - 1300	16.7	,		160	-			
1300 - 1350	16.7	7	22	160	1500			
1350 - 1400	12.5	'	22	198	1600			
1400 - 1450	10.0	0		233	-			
1450 - 1500	16.7	0		160	1700			
1500 - 1550	10.0	10		233	1800			
1550 - 1600	10.0	10		233	1000			
1600 - 1650	10.0	0	25	233	1900			
1650 - 1700	16.7	0	25	160	2000			
1700 - 1750	12.5	7		198	2000			
1750 - 1800	16.7	/		160	2100			
<sup>1</sup> Bearing capacity res	ults stated above have	been inferred	from Fig 2 –	Determination of allowable	2200	Inferred Bearing (	Capacity (50mm Intervals)	
conditions at the tin	ider small structures, N ne of test and will be he	1.J. Stockwell. Pavilv influenc	The results of ed if signification of the second se	are relative to the ground ant gravel fraction is present.	2200	Inferred Bearing O	Capacity (300mm intervals	)
The inferred values	should be used conser	vatively. IANZ	endorsemen	t does not apply to these values.	2300			
NZS 3604-2011 Sa	tion 3 3 7 1 (b) states t	hat the ultima	ta haarina ca	nacity of the foundation shall be				
assumed to be not la	ess than 300 kPa if the	number of blo	ws per 100m	m exceeds 5 down to a depth				
equal to twice the w	idth of the widest footi	ng below the u	nderside of th	he proposed footing and 3 at				
greater depths.	FIFLD LOC: NO	Contrak	nical Saat	ty Guidelines 2005 (No+ 1	ANZ A agreedit	d). Lot 245 See Dage	127 for location nla	n
Donth (mm)	Description	Geotechi	near Socie	ty Guidennes 2005 (Not I	ANZ ACCIENT	tu), Lot 245 - See rage	12/101 location plat	1
	Tennell 8	tion (						
0 to 250	i opson & vegeta	uon (organ	ne matter)					
250 to 1450 *	Grey / brown Gr Sand, fine to coa	avelly SAN rse; Silt, no	D with tra on-plastic.	ace of silt. Moist. Tightly pa	icked. Gravel, st	ibangular to subrounded	, maximum particle s	size 63.0mm;
* NZS 3604:2011,	Section 3.3.6 requ	ires a minin	num 50mm	diameter auger hole to be co	ompleted to the de	epth of each scala penetron	neter probe. Unable to	complete past the
depth indicated. Note:								
• The resu	lts stated above a	re specific	to the app	proximate test locations as	recorded. CTS	accepts no liabilitv for a	ny extrapolated use a	of this data.
This ren	ort may not be re	produced e	excent in f	ull.				<i>,</i>
- 1/1/5/10/	may not be rej		pi in J					<u> </u>
Tested Bv:	K. Hipkins, C.	Pearson.	T. Shaw	v & C. Fisher Date	e: 4 to	23-May-22		
······································	· · · · · · · · · · ·	,				· ···J ==		
Charled By	enll	7					o BED (s	
Checked by:	romanica					a.C	CREDITED	



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Page 19 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	ls: Veros, <u>stephenc@veros.co.nz</u>							Attention:	S. Cornw	all
Job Descriptio	on: W	ooing	Tree Su	bdivisio	n, Cromwell					
							_			
	5	SCALA	PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 24	6 - See Page 127 for locat	tion plan	
Denth	Penetre	ation	Blo	ws /	Inferred Allowable					
(mm)	(mm/b	low)	100	300	Bearing Capacity <sup>1</sup>					
()	(	,	mm	mm	(kPa)	l				
0 - 50	25.0	0	7		119			Inferred Bearing	Capacity (k	Pa)
50 - 100	10.0	0	1		233				I	,
100 - 150	7.1		16	36	299	l		0 50 100 150 200	250 300 3	350 400 450 500
150 - 200	5.6		10	50	359		0			
200 - 250	8.3		13		267		100			
250 - 300	7.1		15		299					
300 - 350	7.1		15		299		200			
350 - 400	6.3		15		330		300			
400 - 450	8.3		12	36	267					
450 - 500	8.3		12	50	267		400			
500 - 550	10.0	0	9		233		500			
550 - 600	12.5	5	,		198	l	200			
600 - 650	12.5	5	9		198	l	600			
650 - 700	10.0	0	,		233		700		1	
700 - 750	10.0	0	0	25	233		/00			
750 - 800	12.5	5	3	23	198		800			
800 - 850	12.5	5	7		198		000			
850 - 900	16.7	7	,		160		900			
900 - 950	12.5	5	7		198		1000			
950 - 1000	16.7	7	1		160	m	1100			
1000 - 1050	12.5	5	7	22	198	(n	1100			
1050 - 1100	16.7	7	/	22	160	th	1200	┊╴┊╴╎╴┍┺┿━		
1100 - 1150	12.5	5	ø		198	)ep	1000			
1150 - 1200	12.5	5	ð		198	П	1300			
1200 - 1250	16.7	7	7		160		1400			
1250 - 1300	12.5	5	7		198					
1300 - 1350	8.3		17	20	267		1500			
1350 - 1400	4.5		17	39	416		1600			
1400 - 1450	7.1		15		299					
1450 - 1500	6.3		15		330		1700			
1500 - 1550	10.0	0	11		233		1800			
1550 - 1600	8.3		11		267	1				
1600 - 1650	10.0	0	11	20	233	1	1900			
1650 - 1700	8.3		11	30	267		2000			
1700 - 1750	12.5	5	0		198					
1750 - 1800	12.5	5	8		198	1	2100	La función de C	(50 I	4
<sup>1</sup> Bearing capacity rest	ults stated abor	ve have be	en inferred j	from Fig 2 –	Determination of allowable	1	22.00	Interred Bearing C	apacity (50mm 11	(tervais)
bearing pressure und conditions at the tim	ler small struc e of test and w	tures, M.J vill he heav	. Stockwell. ilv influence	The results a od if significa	re relative to the ground		22000	Inferred Bearing C	apacity (300mm i	ntervals)
The inferred values s	should be used	l conservat	tively. IANZ	endorsemen	t does not apply to these values.		2300			
N75 2604.2011 C	ion 3 2 7 1 11	states the	t the ultim	a haquina a	acity of the foundation shall be					
assumed to be not les	wn 5.5.7.1 (b) ss than 300 kP	sutes that Pa if the nu	ane unimat mber of blo	e vearing cap ws per 100mi	neary of the foundation shall be m exceeds 5 down to a depth					
equal to twice the wi	dth of the wide	est footing	below the u	nderside of th	ne proposed footing and 3 at					
greater depths.	TELDIO	C. N7 4	Conto-l-	ical C!	tu Cuidalinas 2005 AL ( )	AN7 4	007 3	itad). Lat 246 S D 1	77 for 1	n nlan
F Donth (mm)	Deserint:	G: INZ (	Jeotechn	iicai Socie	ty Guidennes 2005 (Not I	IANZ A	cered	neu); Lot 240 - See rage I	27 IOF locatio	
	Descriptio	···	am (	10 m - 41 - 5						
0 to 200	Topsoil &	vegetatio	on (organ	ic matter)					<u> </u>	
200 to 1450 *	Grey / brov	wn Grav	elly SAN	D with tra	ce of silt. Moist. Tightly pa	icked. (	ravel,	subangular to subrounded,	maximum pa	rticle size 37.5mm;
* N76 2604.2011	Sand, fine	to coars	e; Silt, no	n-plastic.	diamatan anger hala ta b	malate	to the	donth of each coals nonstant	atan nucha II-	abla ta aamnlata maat 41 -
depth indicated	Section 3.3.	o require	сэ а шилий	am somm	unameter auger noie to de co	mpietea	и пе	ucpui oi cacii scaia penetrom	eter prove. Un	avie to complete past the
Note:										
• The result	Its stated al	hove are	snecific	to the arr	roximate test locations as	record	od CT	S accepts no liability for a	w extranolati	ed use of this data
- Incresul	no suicu al	bove ure	oduced a	veont in f	all	, ccord		s accepts no intointy jor un	y chirapotate	a not oj inio unin.
<ul> <li>Inis repo</li> </ul>	ni may not	be repr	ouuceu e	xcept in fl						
Tested Bv:	K. Hinkir	18. C. P	Pearson.	T. Shaw	& C. Fisher Date	e:	4	to 23-Mav-22		
			50119		Date Date		•	<b>-</b> , <b></b>		
Chooked Dry	Marah	//								
Checked by:	m	vino						LCC	REDITED	
								r		Test results indicated
								-		as not accredited are
										outside the scope of the
								1	2	laboratory's

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## Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 20 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS



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Checked By:

Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date:

4 to 23-May-22



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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 21 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	s: Veros, <u>stephenc@veros.co.nz</u>					Attention: S. Cornwall							
Job Descripti	tion: Wooing Tree Subdivision, Cromwell												
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 24	8 – See Pa	age 127 fo	or locat	ion plan			
Blows / Inferred Allowable													
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>			Inf	Inferred Bearing Capacity (kPa)					
(mm)	(mm/blow)	mm	mm	(kPa)			0 100			100	500	(0.0	70.0
0 - 50	25.0	_		119		0	0 100	200			500	000	/00
50 - 100	16.7	5		160	1								
100 - 150	25.0	10	25	119		100							
150 - 200	6.3	10		330		200							
200 - 250	10.0	10	1	233		200							
250 - 300	10.0	10		233		300							
300 - 350	8.3	12		267		40.0							
350 - 400	8.3	12		267		400							
400 - 450	12.5	8	28	198		500							
450 - 500	12.5	0		198									
500 - 550	12.5	8		198		600							
550 - 600	12.5	Ů		198		700			-				
600 - 650	16.7	6	21	160									
650 - 700	16.7	-		160	-	800							
700 - 750	10.0	- 9		233	-	900							
750 - 800	12.5			198	-								
800 - 850	16.7	6		160	1	1000							
850 - 900	10.7			100	nn	1100							
950 - 930	12.3	7		190	1 (1								
1000 - 1050	12.5		-	198	ptł	1200							
1050 - 1100	16.7	7	18	160	De	1300			l				
1100 - 1150	25.0			119					L				
1150 - 1200	25.0	4		119		1400							
1200 - 1250	16.7	0		160		1500							
1250 - 1300	10.0	0		233									
1300 - 1350	7.1	17	55	299		1600							
1350 - 1400	5.0	17	55	388	_	1700							
1400 - 1450	5.0	30		388									
1450 - 1500	2.5			645	-	1800							
Refusal					1	1900							
<sup>1</sup> Bearing capacity res	sults stated above have l	been inferred	from Fig 2 –	Determination of allowable		2000							
conditions at the time of test and will be heavily influenced if significant gravel fraction is present.						2000							
The inferred values	should be used conserv	atively. IAN2	Z endorsemen	t does not apply to these values.		2100							
NZS 3604:2011. See	ction 3.3.7.1 (b) states th	at the ultima	te bearing ca	pacity of the foundation shall be		2200	-	— Inferred	Bearing	Capacity (50	mm Interval	5)	
assumed to be not l	assumed to be not less than 300 kPa if the number of blows per 100mm exceeds 5 down to a depth						- 1	Inferred	Bearing	Capacity (30	0mm interva	ls)	
equal to twice the w greater depths.	ridth of the widest footin	g below the i	inderside of ti	ne proposed footing and 3 at		2300							
			~ :					N 10 ~	<b></b>				
Donth (mm)	FIELD LOG: NZ	Geotech	nical Socie	ety Guidelines 2005 (Not I	IANZ A	ccredit	ted); Lot 2	248 - See	rage 12	2 / for loca	ation plan		
Depth (mm)	Description	tion (ones											
0 10 50	Provin Crowelly	CAND with	ne matter)	ilt Maist Tightly paalead (	Created	auhana	ulan ta cub	mounded	marim	um nautia	lo cizo 10 0		
50 to 400	Sand, fine to coar	se; Silt, no	on-plastic.	nt. Worst. Tigntiy packet.	Gravel,	subang	ular to sub	frounded,	шахш	uni partic	ie size 19.0	;	
400 to 1400 *	Light grey SAND	with trac	e of / mino	r silt. Moist. Tightly packed	d. Sand,	fine to	medium; S	Silt, non-p	olastic.				
* NZS 3604:2011 depth indicated.	, Section 3.3.6 requi	ires a minin	num 50mm	diameter auger hole to be co	ompleted	to the a	lepth of eac	ch scala pe	netrome	eter probe.	Unable to c	omplete pa	ast the
Note:													
• The resu	ilts stated above a	re specific	to the app	proximate test locations as	recorde	ed. CTS	S accepts n	o liability	for an	y extrapol	ated use of	<sup>r</sup> this data	l <b>.</b>
• This rep	ort may not be rep	produced e	except in f	ull.									
Tested By:	K. Hinkins, C.	Pearson	. T. Shaw	& C. Fisher Date	e:	4 t	to 23-Ma	v-22					

Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher 4 to 23-May-22

Checked By:

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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	<u>stephenc</u>	<u>@veros.</u>	co.nz			A	ttention:	S. Cornw	all
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell						
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 24	9 – See Pag	ge 127 for loca	tion plan	
Denth	Penetration	Blo	ws /	Inferred Allowable						
(mm)	(mm/blow)	100	300	Bearing Capacity 1						
()	(11111/01011)	mm	mm	(kPa)			<b>T</b> 0		~ · · ·	
0 - 50	25.0	5		119			Infe	rred Bearin	g Capacity (l	kPa)
50 - 100	16.7	3		160				0.0 450 804		250 100 150 500
100 - 150	7.1	11	20	299		0	50 1	100 150 200	250 300	350 400 450 500
150 - 200	12.5	11	28	198		0				
200 - 250	8.3	12		267		100				
250 - 300	8.3	12		267						
300 - 350	10.0	10		233		200				
350 - 400	10.0	10		233		300				
400 - 450	10.0	10	20	233						
450 - 500	10.0	10	- 30	233		400				
500 - 550	10.0	10	1	233	1	500				
550 - 600	10.0	10		233		500				
600 - 650	10.0		Ì	233	1	600				
650 - 700	8.3			267	1	70.0				
700 - 750	10.0	4.2	1	233		/00				
750 - 800	3.8	18	39	471		800				
800 - 850	10.0	4.0	1	233						
850 - 900	10.0	10		233		900				
900 - 950	16.7			160		1000				
950 - 1000	16.7	6		160	(m	2000		÷		
1000 - 1050	50.0			68	, E	1100				
1050 - 1100	25.0	3	13	119	h (	1200				
1100 - 1150	25.0			119	pt	1200				
1150 - 1200	25.0	4		119	De	1300		┆┟╶╎┨╶╌┝		
1200 1250	25.0	+		119						
1200 - 1200	25.0	4		117		1400				
1300 1350	25.0	<u> </u>	1	117		1500				
1300 - 1350	20.0 12.5	6	18	117		1000				
1350 - 1400	12.5		-	198		1600				
1400 - 1450	12.5	8		198		1700				
1450 - 1500	12.5			198		1700				
1500 - 1550	16.7	5		160		1800				
1550 - 1600	25.0		-	119						
1600 - 1650	16.7	6	15	160		1900				
1650 - 1700	16.7		-	160		2000				
1700 - 1750	25.0	4		119		2000				
1750 - 1800	25.0		Guine Els 2	119 Defensive of all smaller		2100				
bearing capacity resu bearing pressure und	uis statea above have b ler small structures, M.	een inferred J. Stockwell.	The results a	petermination of allowable are relative to the ground		2200		Inferred Bearing	Capacity (50mm I	ntervals)
conditions at the time	e of test and will be hea	vily influenc	ed if significa	int gravel fraction is present.		2200	—	Inferred Bearing	Capacity (300mm	intervals)
The inferred values s	hould be used conserve	tively. IANZ	endorsemen	t does not apply to these values.		2300	-	!	I	
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be						
assumed to be not les	s than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth						
equal to twice the wid greater denths.	un of the widest footing	g delow the u	nderside of tl	ie proposed footing and 3 at						
F	IELD LOG: NZ	Geotechr	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredi	ted); Lot 24	49 - See Page	127 for locatio	on plan
Depth (mm)	Description						.,,			
0 to 100	Tonsoil & vegetat	ion (organ	ic matter)							
0.0100	Grev / hrown Coo	velly & A N	D with two	ice of silt and trace of achi-	les Mo	st Tial	tly packed	Graval sub-	gular to subro	unded maximum
100 to 1450 *	narticle size 75 Am	m: Sand	fine to cos	rese: Silt, non-plastic	1C5. IVI01	st. Higi	пу раскей.	Gravel, Subal	iguiai to subro	unucu, maximum
* NZS 3604:2011.	Section 3.3.6 reanin	res a minin	1111 10 CO2	diameter auger hole to be co	mpleteo	to the	lepth of each	h scala penetroi	neter probe. Un	able to complete past the
depth indicated.					7					
Note:										
• The resul	ts stated above ar	e specific	to the ann	proximate test locations as	record	ed. CTS	accepts no	o liability for a	ny extrapolate	d use of this data.
This repo	rt may not be ren	roduced e	xcent in fi	ull.			-r		,	
• Inisrepo	ri may not be rep	<i>Jource</i> c	хсері ш зі							
Tested By: I	K. Hipkins, C. I	Pearson.	T. Shaw	& C. Fisher Date	e:	4 1	o 23-Mav	-22		
	· ····,									
Checked Rv•	emples									
CHURCU Dy.	rignun							_0	CREDITEN	
								W-		Test results indicated
								-		as not accredited are
										outside the scope of the

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TESTING LABORATO

laboratory's accreditation

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Reference No: 22/1550

Date: 26 May 2022

# <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

**Central Testing Services** 

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz



Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

**Checked By:** 

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

18 Ngapara St, P.U. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz Page 24 of 127 Pages

Reference No: 22/1550

outside the scope of the laboratory's

accreditation

Date: 26 May 2022

Client Details	:	Veros, s	stephene	averos.	co.nz				Attentio	n:	S. Cornw	vall	
Job Description	on:	Wooing	Tree Su	bdivisio	n, Cromwell								
		SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 25	1 – See P	age 127 f	or loca	tion plan		
Donth	Pon	otration	Blo	ws /	Inferred Allowable								
(mm)	(mr	n/blow)	100	300	Bearing Capacity 1								
(IIIII)	(iiii	11/010w)	mm	mm	(kPa)								
0 - 50		7.1	15		299			Inf	ferred B	earing	Capacity (	kPa)	
50 - 100		6.3	15		330				100				
100 - 150		8.3	12	20	267		(	) 50	100 15	0 200	250 300	350 400	450 500
150 - 200		8.3	12	39	267		0						
200 - 250		8.3	12		267		100						
250 - 300		8.3	12		267								
300 - 350		7.1	12		299		200 :						
350 - 400		8.3	13		267		300						
400 - 450		12.5	10	27	198								
450 - 500		8.3	10	57	267		400						
500 - 550		8.3	14		267		500						
550 - 600		6.3	14		330						L		
600 - 650		7.1	17		299		600						
650 - 700		7.1	14		299		700						
700 - 750		3.8		1	471		/00 -						
750 - 800		3.8	26	53	471		800					_	
800 - 850		8.3	1 4-	1	267								
850 - 900		7.1	13		299		900 -						
900 - 950		7.1		t	299	_	1000						
950 - 1000		83	13		267	E E							
1000 - 1050		12.5			198	E,	1100						
1050 - 1100		167	7	29	150	h (	1200						
1100 1150		10.7			233	pt	1200						
1150 1200		12.5	9		108	Ď	1300		_				
1200 1250	1	12.5		<u> </u>	170								
1200 - 1200	+	12.3	8		190		1400						
1230 - 1300	+	71	ł	1	200		1500						
1300 - 1350		7.1	14	37	299								
1330 - 1400		7.1		-	299		1600						
1400 - 1450		/.1	15		299		1700						
1430 - 1500		0.3			330		1/00						
1500 - 1550	-	/.1	14		299		1800					_	
1550 - 1600	+	/.1	ł	4	299		1000						
1600 - 1650	-	ð.J	14	43	207		1900						
1650 - 1700	-	0.5		-	550		2000						
1700 - 1750		6.3	15		330								
1750 - 1800		7 <b>.1</b>		(	299		2100		- Inform 1	Beering 4	Con agity (50	(ntorrel-)	
Bearing capacity res	ults stated der small	above have b structures. M	een inferred j J. Stockwell	from Fig 2 – The results of	Determination of allowable are relative to the ground		2200	_	— interred	њearmg (	apacity (50mm)	utervals)	
conditions at the tim	ie of test a	nd will be hea	wily influence	ed if significa	ant gravel fraction is present.		2200	-	- Inferred	Bearing (	Capacity (300mm	intervals)	
The inferred values	should be	used conserve	atively. IANZ	endorsemen	t does not apply to these values.		2300				I		
NZS 3604:2011. Sec	tion 3.3.7.	1 (b) states the	at the ultimat	e bearing cau	pacity of the foundation shall be								
assumed to be not le	ess than 30	00 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth								
equal to twice the w	idth of the	widest footing	g below the u	nderside of tl	he proposed footing and 3 at								
greater depins.	FIELD	LOG·NZ	Geotechn	ical Socia	ty Guidelines 2005 (Not L	ANZ A	ccredit	ted): Lot	251 - 50	Рате 1	27 for locati	on nlan	
Denth (mm)	Descrip	ntion	Juan	icai Socie	2003 (110t II		ul		-51 - 50	age	- / IOI IOCALI	on pian	
0 to 200	Torseil	& vogatet	ion (orgen	ic mattar)									
0 10 200	1 opsoli	Consulto C	ion (organ	in matter)	4 Maint Tinktherenhadt C			lan 4a 1					
200 to 1500 *	Brown	Gravelly S	AND with	minor sil	t. Moist. Fightly packed. Gr	avel, s	ubangu	ar to sub	rounded,	maxim	um particle si	ze 26.5mm	;
* NZS 3604.2011	Sand, I	ane to coars	se, SIII, NO res a minin	n-plastic.	diameter auger hale to be an	mnlata	to the	lenth of co	ch scala -	enetror	neter nraha II-	able to cor	nlete nest t
depth indicated.	Section	<i>5.5.6 i equii</i>	с <i>э а шиш</i> Ш	iam Jomm	unanicici augei noie io de con	apretee	i io ine u	cpin oi ea	си зсата р	cheir off	probe. UI	avic 10 COII	ipicie pasi li
Nota													
The second	Ite etata	d above an	a spaaifia	to the ar-	wavimata tast logations as	vacoud	ad CTS	acconte	no liati:	to far a	w avteanalat	nd use of t	his data
• Ine resu	uis state	u avove ar	e specijic	w ine app	roximate test locations as i	record	ea. CIS	accepts	no nadill	y jor al	ay extrapolate	eu use of ti	nıs aata.
This repo	ort may	not be rep	roauced e	xcept in fi	<i>и</i>								
Tostad Pro	K Ui-	king C	Doorson	T Shar	& C Fisher Data		14	- 23 M					
resteu By:	к. пр	okins, C. I	r earson,	1. Snaw	a C. Fisher Date	•	4 (	U 23-IVI8	1y-22				
Checked By:	/ln	nfhlio								-1	REDIT	1	
		r								ACI	ED		
												Test res	ults indicate
												as not ac	ccredited are



#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

18 Ngapara st, P.O. Box 397, Alexandra 9540, Central Otago, New Zealand
 P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

#### Date: 26 May 2022

### **TEST REPORT – SCALA PENETROMETER RESULTS**



\_\_\_\_\_

Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher

Date:

4 to 23-May-22

Checked By:

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz

Page 26 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

<b>Client Details:</b>	Veros,	tephenc	@veros.	co.nz			Attention:	S. Cornw	all
Job Descriptio	n: Wooing	Tree Su	ıbdivisio	n, Cromwell					
	~~				<				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	: 6.5.2);	Lot 25.	3 – See Page 127 for loca	tion plan	
Depth	Penetration	Blo	ows /	Inferred Allowable					
(mm)	(mm/blow)	100	300	Bearing Capacity					
0.50	16.5	mm	mm	(KPA)	-		Informed Rearing	Canacity (1	ZPa)
0 - 50	16.7	7		160	-		interrett Dearing	, capacity (i	<b>xi</b> <i>aj</i>
50 - 100	12.5			198		0	50 100 150	200 250	300 350 400
100 - 150	8.3	12	29	267	-	0 :			
150 - 200	8.3 10.0		-	20/	-	100			
200 - 250	10.0	10		233		100			
300 350	83			255		200			
350 - 400	12.5	10		198		200			
400 - 450	12.5			198		300			
450 - 500	12.5	8	23	198		400			
500 - 550	16.7	_	_	160		500			
550 - 600	25.0	5		119		500			
600 - 650	12.5			198		600		- 4-3	
650 - 700	12.5	8		198	1	700			
700 - 750	12.5	0	27	198	1	/00			
7 <u>5</u> 0 - 800	12.5	8	27	198	]	800			
<u>800 - 8</u> 50	12.5	11	]	198	]	000			
850 - 900	7.1	11		299	]	900			
900 - 950	16.7	11		160		1000			
950 - 1000	6.3	11		330	III	1100			
1000 - 1050	25.0	5	24	119	(n	1100 :			
1050 - 1100	16.7	3	24	160	th	1200			
1100 - 1150	12.5	8		198	)ep	-		[]	
1150 - 1200	12.5	0		198	Q	1300			
1200 - 1250	10.0	9		233		1400			
1250 - 1300	12.5			198				L	
1300 - 1350	10.0	11	29	233		1500			
1350 - 1400	8.3			267		1600			
1400 - 1450	12.5	9		198					
1450 - 1500	10.0			233	-	1700			
1500 - 1550	7.1	14		299	-	1800			
1550 - 1600	7.1			299	-				
1600 - 1650	/.1	14	45	299	-	1900			
1050 - 1700	/.1			299		2000			
1750 1900	0.5	17		350					
<sup>1</sup> Rearing capacity resu	<b>3.0</b> Its stated above have b	een inferred	from Fig 2 –	339 Determination of allowable		2100	Inferred Bearing	anacity (50mm I	ntervalc)
bearing pressure und	ler small structures, M.	J. Stockwell.	The results a	are relative to the ground		2200	Interret Dearing	capacity (commit	
conditions at the time The inferred values s	e of test and will be hea hould be used conserva	vily influence tively IANZ	ed if significa Lendorsemen	int gravel fraction is present. t does not apply to these values			Inferred Bearing	Capacity (300mm	intervals)
The agenea rances	nomu oc uscu conserve		enuorsemen	i aces not apply to mese values.		2300			
NZS 3604:2011, Secta assumed to be not les	ion 3.3.7.1 (b) states the is than 300 kPa if the n	ut the ultimat umber of blo	te bearing cap ws ner 100m	pacity of the foundation shall be m exceeds 5 down to a depth					
equal to twice the wid	th of the widest footing	g below the u	nderside of th	he proposed footing and 3 at					
greater depths.	ELDIOC NZ	Cart		4. C				27.6. 1	
F Denth ()	IELD LUG: NZ	Geotechn	iical Socie	ety Guidelines 2005 (Not I	IANZ A	ccredit	eu); Lot 253 - See Page 1	2 / Ior locatio	on pian
Depth (mm)	Description	an (							
0 to 100	i opson & vegetat	ion (organ	uc matter)		•	1.4			· · · ·
100 to 400	Brown Gravelly S	AND with	trace of c	obbles and trace of silt. Mo	oist. Tig	ntly pac	ked. Gravel / cobbles, sub	rounded to rou	unded, maximum
100 40 700	particle size /5.0m	m; sand,	inte to coa	arse, Sut, non-plastic.	ino t-		:14		
400 to 700	Light grey SAND	with trace		r siit. Moist. Loose. Sand, f	me to co	barse; S	nt, non-plastic.		75.0
700 to 1550 *	Brown Gravelly S	AND with	trace of s	iit. Moist. Tightly packed.	Gravel,	subrou	nded to rounded, maximu	n particle size	/5.0mm;
* NZS 3604-2011	Sanu, nne to coars	es a minin	n-piasue.	diameter anger hale to be co	mnleter	l to the o	lenth of each scala nenetrom	eter probe Un	able to complete past the
depth indicated.	Section Swith I cyull	a mmm	.am Somm	amments auges note to be co	mpiciet	<i></i> u	epen of cach scala penetroll	proot. Olla	to compile past the
Note:									
• The resul	ts stated above ar	e specific	to the am	proximate test locations as	record	ed. CTS	accepts no liability for a	ıv extranolate	d use of this data.
This reno	rt may not be ren	roduced e	xcept in f	ull.				., upointe	
111157000									<u> </u>
Tested By: I	K. Hipkins, C. I	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	o 23-May-22	REDITED	
•	11	,					- r		Test results indicated
Checked Bv:	emplus						<b>•</b> 4		as not accredited are
									outside the scope of the
							TES	A.	laboratory's
							TING	RATU	accicuitation
							· G	LABON	I

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P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 27 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc	averos.	<u>co.nz</u>			Attention: S. Cornwall
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell			
	0047	DENET	DOMES	ED (N/75 4403.1000 T 4	( = )	L + 25	254 See Dage 127 for land-
	SCALA	A PENEI	KUMET	LK (NZS 4402:1988, Test	0.5.2);	Lot 25	254 – See rage 127 for location plan
Depth	Penetration	BI0	ws /	Interred Allowable Boaring Consoity 1			
(mm)	(mm/blow)	100	300	bearing Capacity			
0.50	167	mm	mm	(Kf a) 140			Informed Desping Conseity (1.D.s.)
0 - 50	10./	7		100	-		interred bearing Capacity (KPa)
<u> </u>	12.5		1	198			0 50 100 150 200 250 300 350 400 450 500
150 - 200	16.7	8	24	160	1	0	
200 - 250	10.7			233	1	100	
250 - 300	12.5	9		198		100	
300 - 350	16.7			160		200	
350 - 400	16.7	6		160		300	
400 - 450	16.7	-		160	1	500	
450 - 500	12.5	/	23	198	1	400	
500 - 550	10.0	10		233		500	
550 - 600	10.0	10		233			
600 - 650	10.0	9		233		600	
650 - 700	12.5	,		198		700	
700 - 750	10.0	10	26	233	ļ	-	
750 - 800	10.0		-	233		800	
800 - 850	12.5	7		198	-	900	
850 - 900	16.7			160		40.0-	
900 - 950	12.5	7		198	(u	1000	
950 - 1000	10./		-	100	mn	1100	
1000 - 1050	12.5	7	21	198	h ()		
	10.7			100	pt	1200	
1100 - 1150	12.5	7		198	De	1300	
1200 1250	10.7			100	-		
1250 - 1250	12.5	8		198	-	1400	
1300 - 1350	12.5			198		1500	
1350 - 1400	12.5	8	27	198	1		
1400 - 1450	10.0			233		1600	
1450 - 1500	8.3	11		267		1700	
1500 - 1550	8.3			267		1000	
1550 - 1600	8.3	12		267		1800	
1600 - 1650	5.6	• •		359		1900	
1650 - 1700	4.5	20	49	416		2000	
1700 - 1750	8.3	17		267		2000	
1750 - 1800	4.5	17		416		2100	
<sup>1</sup> Bearing capacity resu	Its stated above have be	een inferred j	from Fig 2 –	Determination of allowable		2200	Inferred Bearing Capacity (50mm Intervals)
conditions at the time	of test and will be hea	vily influence	ed if significa	int gravel fraction is present.		2200	Inferred Bearing Capacity (300mm intervals)
The inferred values s	hould be used conserva	tively. IANZ	endorsemen	t does not apply to these values.		2300	
NZS 3604:2011, Secti	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be			
assumed to be not les	s than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the wid greater depths.	un oj ine wiaest footing	; oelow the u	naerstae of th	ie proposea jooting and 3 at			
F	IELD LOG: NZ	Geotechn	ical <u>Soc</u> ie	ty Guidelines 2005 (Not I	IANZ A	ccredi	lited); Lot 254 - See Page 127 for location plan
Depth (mm)	Description						
0 to 100	Fopsoil & vegetati	ion (organ	ic matter)	•			
100 to 300	Brown Sandy GR.	AVEL wit	h trace of	silt. Moist. Loose. Gravel, s	subroun	ded to	o rounded, maximum particle size 53.0mm; Sand, fine to coarse;
100 10 390	Silt, non-plastic.			,			
390 to 500	Light grey SAND	with trace	e of / mino	r silt. Moist. Loose. Sand, f	ine to co	arse; S	Silt, non-plastic.
500 to 1550 *	Brown Gravelly S	AND with	trace of /	minor silt. Moist. Tightly p	oacked.	Gravel	el, subrounded to rounded, maximum particle size 53.0mm;
300 10 1330 "	Sand, fine to coars	se; Silt, no	n-plastic.	- • •			
* NZS 3604:2011, S	Section 3.3.6 requir	es a minin	um 50mm	diameter auger hole to be co	ompleted	to the o	e depth of each scala penetrometer probe. Unable to complete past the
ueptn indicated.							
Note:				• • • •		1.000	
• The result	ts stated above ar	e specific	to the app	proximate test locations as	recorde	d. CTS	IS accepts no liability for any extrapolated use of this data.
• This repo	rt may not be rep	roduced e	xcept in fi	<i>ull.</i>			
Tested Ry. L	K Hinking C	Pagrear	T Show	& C Fisher Det	۵.	1	to 23-May-22 CCREDITA
resteu Dy: r	x. 111pkills, C. 1	cai sull,	1. Shaw	a c. risher Dat	ι.	4	1025-111ay-22 po 60
Charles							Test results indicated
Cnecked By:	empario						as not accredited are outside the scope of the
							laboratory's
							An so accreditation
							VG LABOR"

# **Central Testing Services**

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz Page 28 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	@veros.	<u>co.nz</u>			Attention:	S. Cornwall	
Job Descriptio	n: Wooing	g Tree Su	bdivisio	n, Cromwell					
	·								
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 255	5 – See Page 127 for locat	tion plan	
<b>D</b> 4	<b>D</b>	Blo	ws /	Inferred Allowable					
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>					
(mm)	(mm/blow)	mm	mm	(kPa)					
0 - 50	25.0			119			Inferred Bearing	Capacity (kPa)	
<u> </u>	167	5		160					
100 - 150	16.7		-	160		0	100 200	300	400 500
150 - 200	12.5	7	22	198		0 1			
200 250	12.5			100		100			
200 - 230	9.2	10		267					
200 250	0.5			109		200			
300 - 350	12.5	8		190	-	200			
350 - 400	12.5		-	198	-	300 -			
400 - 450	25.0	5	21	119		400			
450 - 500	16./		-	160		-			
500 - 550	12.5	8		198		500			
550 - 600	12.5			198		600			
600 - 650	25.0	4		119		000			
650 - 700	25.0			119		700			
700 - 750	16.7	6	15	160	4	-			
750 - 800	16.7	v	10	160		800			
800 - 850	25.0	5		119		900			
850 - 900	16.7	5		160					
900 - 950	10.0	7		233		1000			
950 - 1000	25.0	/		119	m				
1000 - 1050	16.7	(	20	160	(II	1100			
1050 - 1100	16.7	0	20	160	th	1200			
1100 - 1150	10.0	-		233	ep	-			
1150 - 1200	25.0	7		119	D	1300			
1200 - 1250	16.7			160		1400			
1250 - 1300	16.7	6		160		1400			
1300 - 1350	12.5			198		1500			
1350 - 1400	167	7	20	160		-			
1400 - 1450	16.7			160		1600			
1450 1500	10.7	7		100		1700			
1500 1550	7 1			200		1/00			
1550 1600	5.0	17		299		1800			
1600 1650	3.0			300		1000			
1650 1700	4.5	21	54	410	-	1900			
1030 - 1700	3.0		-	300		2000			
1750 1990	6.3	16		330	-	-			
1/50 - 1800	0.J	an informad	fuom Eig 2	330 Determination of allowable		2100			
bearing pressure und	ler small structures, M	J. Stockwell.	The results a	re relative to the ground		2200	Inferred Bearing C	Capacity (50mm Intervals	)
conditions at the time	e of test and will be he	wily influence	ed if significa	int gravel fraction is present.		2200	Inferred Bearing C	Capacity (300mm interval	s)
The inferred values s	hould be used conserv	atively. IANZ	endorsemen	t does not apply to these values.		2300			
NZS 3604:2011, Secti	ion 3.3.7.1 (b) states th	at the ultimat	e bearing cap	pacity of the foundation shall be					
assumed to be not les	s than 300 kPa if the i	umber of blo	ws per 100m	m exceeds 5 down to a depth					
equal to twice the wid greater denths.	un oj tne widest footin	g below the u	naerside of ti	ie proposea jooting and 3 at					
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	IANZ A	ccredit	ed): Lot 255 - See Page 1	27 for location plan	
Depth (mm)	Description						,, ======		
0 to 50	Tonsoil & year	tation (ora	anic matte	er)					
0 10 50	Chorich have	Choralle 6	AND	1. j. http://www.aile.balance.	t Laac	Crow	l subnounded	antiala size (2 Arress	
50 to 1500	Sand fina to an	Gravelly S	non nlast	i trace of / minor slit. Mois	1. L0056	. Grave	i, subrounded, maximum p	barticie size 63.0mm;	
	Jight grov Son	dy CD AVI	non-piasti 71. with tw	aco of silt Moist Loose C.	iyer.	bround	ed to rounded movimum -	narticle size 26 5mm	
1500 to 1550 *	Sand fine to co	uy GRAVI arse: Silt	non-nleeti	ace of sitt. moist. Loose. Gi	avei, st	bround	eu to rounded, maximum j	particle size 20.5mm;	
* NZS 3604-2011	Section 3.3.6 requi	ai se, Sill, res a minin	1011-piasti 11111 50mm	 diameter auger hole to be co	mnleter	to the d	lenth of each scala nenetrom	eter probe. Unable to a	complete past the
depth indicated.	scenon 5.5.0 requi	с <i>э а ШШШ</i>	iam Jomm	unameter auger note to De Co	mpicieu	io ine u	cpin of cach scala penetronic		surprete past tile
Note:									
The marrie	to stated about -	a marif -	to the area	wavimata tast loantion	4000ml	d CTC	accounts no linkilite. fra	w autuanolated u	f this data
Ine result	is statea above al	re specific	w ine app	oroximate test locations as	record	ea. CIS	accepts no hability for an	iy extrapolatea use o	j inis aata.
This repo	ri may not be rep	proauced e	xcept in fi						
Costod By: L	Hinking C	Poorsor	T Show	& C Fisher Date	•	1+	0.23-May-22		
resteu by: P	x. mpkins, C.	i carson,	1. Shaw	a C. Fisher Date	с.	40	0 23-1v1ay-22	RED.	
	//						_cc	REDITEN	

Checked By:

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Test results indicated as not accredited are outside the scope of the laboratory's accreditation

**CTS** 

# **Central Testing Services**

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz Page 29 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS



# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 30 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	averos.	co.nz				Atte	ention	:	S. Co	ornwal	ll 📃		
Job Descriptio	n: Wooing	g Tree Su	ıbdivisio	n, Cromwell											
<b>_</b>						_	_	_		_					
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 25	7 – See	Page	127 fo	r locati	ion pla	n			
Denth	Penetration	Blo	ws /	Inferred Allowable											
(mm)	(mm/blow)	100	300	Bearing Capacity 1											
()	(IIIII/DIOW)	mm	mm	(kPa)			1	Inform	od D-	anin~	Cana	nite A-	Dal		
0 - 50	50.0	2		68	]		]	merr	eu Be	aring	Capa	city (K	ra)		
50 - 100	50.0	2		68	1			50	100	150	200	250	30.0	350	400
100 - 150	16.7		1.0	160	1	0 -	, ,	50	100	120	200	230			
150 - 200	16.7	6	15	160		, in the second s									
200 - 250	16.7	_		160		100			-						
250 - 300	12.5	7		198	1	200									
300 - 350	12.5	_		198	1	200									
350 - 400	16.7	7		160		300									
400 - 450	16.7		-	160											
450 - 500	16.7	6	19	160		400									
500 - 550	16.7			160		500									
550 - 600	16.7	6		160		500									
600 - 650	12.5			198		600			_		-				
650 700	12.5	8		108	1										
700 750	12.5		-	150		700									
750 900	10./	7	21	100	1	800		-	_						
/50 - 800	12.5		_	198	-	000									
800 - 850	16./	6		160	-	900		1	-						
850 - 900	16.7														
900 - 950	16.7	6		160	1)	1000									
950 - 1000	16.7		_	160	nn	1100									
1000 - 1050	12.5	7	21	198	(r	1100									
1050 - 1100	16.7	-		160	oth	1200					<b>ч</b> —				
1100 - 1150	12.5	8		198	)er	1000									
1150 - 1200	12.5	v		198	Γ	1300									
1200 - 1250	12.5	8		198		1400									
1250 - 1300	12.5	0		198										1	
1300 - 1350	10.0	12	35	233		1500			-				1		
1350 - 1400	7.1	12	33	299		1.000									
1400 - 1450	7.1	15		299		1000									
1450 - 1500	6.3	15		330		1700									
1500 - 1550	7.1	14		299											
1550 - 1600	7.1	14		299		1800						-	•		
1600 - 1650	7.1	14	20	299		1900									
1650 - 1700	7.1	14	38	299	1	1200									
1700 - 1750	10.0	10		233	1	2000									
1750 - 1800	10.0	10		233	1										
<sup>1</sup> Bearing capacity resu	lts stated above have b	een inferred	from Fig 2 –	Determination of allowable	1	2100		In	ferred P	learing (	anacity (	50mm In	tervals)		
bearing pressure und	ler small structures, M.	J. Stockwell.	The results of the second seco	are relative to the ground		2200		111	L	. ai шg U	apacity (				
The inferred values s	e oj test and will be hed hould be used conserv	atively. IANZ	eu ij significa Vendorsemen	t does not apply to these values.			<u> </u>	In	ferred E	Bearing C	apacity (	300mm i	itervals)		
						2300									
NZS 3604:2011, Section assumed to be not less	ton 3.3.7.1 (b) states th is than 300 kPa if the s	at the ultimat umber of blo	te bearing cap ws ner 100m	pacity of the foundation shall be m exceeds 5 down to a depth											
equal to twice the wid	ith of the widest footing	g below the u	nderside of th	he proposed footing and 3 at											
greater depths.		<u> </u>	• • • •						0		-		<u> </u>		
F	IELD LOG: NZ	Geotechn	nical Socie	ety Guidelines 2005 (Not I	IANZ A	Accredit	ed); L	ot 257	- See I	Page 12	27 for l	ocation	plan		
Depth (mm)	Description														
0 to 300	Topsoil & veget	tation (org	anic matte	er).											
300 to 1450	Dark brown Sa	ndy GRAV	VEL with	minor silt. Moist. Tightly p	acked.	Gravel,	subrou	nded t	o roun	ded, ma	aximum	particl	e size 63	3.0mm;	
500 10 1450	Sand, fine to co	arse; Silt,	non-plasti	с.											
1450 to 1550 *	Light grey Sand	iy GR <del>AVI</del>	EL with tr	ace of / minor silt. Dry. Loo	ose / Sof	ft. Grav	el, subr	ounde	d to ro	unded,	maxim	um part	icle size	63.0mi	n;
1-30 10 1330 "	Sand, fine to co	arse; Silt,	non-plasti	с.											
* NZS 3604:2011,	Section 3.3.6 requi	res a minin	num 50mm	diameter auger hole to be co	ompleted	d to the a	lepth of	each so	cala per	netrome	ter prol	be. Unab	le to con	nplete p	ast the
depth indicated.															
Note:															
• The resul	ts stated above ar	re specific	to the app	proximate test locations as	record	ed. CTS	accep	ts no li	ability	for any	v extraț	polated	use of th	his data	<i>ı</i> .
This repo	rt may not be rep	roduced e	xcept in f	ull.											
<b>F</b> / 1 <b>F</b> -		P	TE CI	0 G E! 1					•						
Tested By: I	K. Hipkins, C.	Pearson,	T. Shaw	w&C.Fisher Date	e:	4 t	o 23-N	vlay-2	2						
	//									ACC	REDIT	0			
Checked By:	emplus	1								•			Test re	sults ind	licated
•															



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#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 31 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# **TEST REPORT – SCALA PENETROMETER RESULTS**

Client Details	: Veros, s	tephenc	averos.	co.nz				A	ttent	ion:	S	5. Cor	nwall			
Job Descripti	on: Wooing	Tree Su	bdivisio	n, Cromwell												
,																
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	<u>6.5.2);</u>	Lot 25	8 – S	ee Pag	ge 12'	7 for lo	cation	plan				
Donth	Ponotration	Blo	ws /	Inferred Allowable				Info	rrad	Roari	ing C	anacit	v (bP	(e)		
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>				11110	nicu	Dearr	ing C	apacit	y (KI	aj		
()	(11111/01011)	mm	mm	(kPa)			D	100	2	200	300	400	50	00	600	700
0 - 50	25.0	5		119		0	<u> </u>								<u></u>	
50 - 100	16.7	3		160		100		1								
100 - 150	8.3	10	23	267		100										
150 - 200	12.5	10	20	198		200										
200 - 250	12.5	8		198												
250 - 300	12.5	U		198		300								1		
300 - 350	16.7	6		160		400										
350 - 400	16.7	U		160		100										
400 - 450	12.5	8	21	198		500				-						
450 - 500	12.5	U	21	198		600										
500 - 550	12.5	7		198		000			1							
550 - 600	16.7	,		160		700				÷ 1						
600 - 650	16.7	6		160		000										
650 - 700	16.7	v		160		800										
700 - 750	8.3	11	31	267		900										
750 - 800	10.0		01	233						L						
800 - 850	7.1	14		299	1)	1000										
850 - 900	7.1			299	un	1100										
900 - 950	12.5	9		198	1 (r	1100										
950 - 1000	10.0	-		233	oth	1200					-					
1000 - 1050	10.0	10	30	233	lə(	1200										
1050 - 1100	10.0	10	20	233	I	1300						_				
1100 - 1150	7.1	11		299		1400										
1150 - 1200	12.5			198		-						•			1	
1200 - 1250	12.5	9		198		1500										
1250 - 1300	10.0	-		233		1600										
1300 - 1350	7.1	16	≡ 54	299												
1350 - 1400	5.6			359		1700										
1400 - 1450	2.5	-		645		1800										
Refusal																
<sup>1</sup> Rearing capacity re	ults stated above have b	aan infarrad	from Fig 2_	Determination of allowable		1900										
bearing pressure un	ider small structures, M.	J. Stockwell.	The results a	ire relative to the ground		2000										
conditions at the tin	ne of test and will be hea	vily influence	ed if significa	int gravel fraction is present.		2000										
The injerrea values	snouia de usea conserva	uively. IANZ	enuorsemen	i aves not apply to these values.		2100										
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be		2200		economicano	- Inferi	red Beari	ing Capa	acity (50)	nm Inte	evals)		
assumed to be not la eaual to twice the w	ess than 300 kPa if the n idth of the widest footing	umber of blo 2 below the u	ws per 100m nderside of tl	m exceeds 5 down to a depth he proposed footing and 3 at		2200		_	Infer	ed Beari	ing Capa	acity (30	Jmm into	ervals)		
greater depths.		,				2300								1		
	FIELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredit	ted);	Lot 25	58 – S	ee Pag	ge 127	for loc	<u>ation p</u>	olan		
Depth (mm)	Description															
0 to 150	Topsoil & vegetat	ion (organ	ic matter)	•												
150 to 1400	Dark brown Sand	y GRAVE	L with mi	nor silt and trace of cobble	s. Mois	t. Tight	ly pa	cked. (	Grave	l, subro	ounded	l to rou	nded, r	maxim	um par	ticle
150 10 1400	size 75.0mm; Sand	l, fine to c	oarse; Silt	, non-plastic.												
1400 to 1500	Light grey Sandy	GRAVEL	with trac	e of silt. Dry. Loose / Soft. (	dravel,	subrou	nded	to rou	nded,	maxim	num pa	rticle s	ize 63.0	0mm;		
* NZS 2604.2011	Sand, fine to coars	se; Silt, no	n-plastic.	diamatan angar bala ta L	mnlate	to the	lort	ofcort	hacel	norat	ometer	nuch				
- IVZS 3004:2011,	, section 5.5.6 requii	es a minin	um 30mm	ulaineter auger hole to be co	mpietea	to the c	iepth	oi eaci	u scala	penetro	ometer	probe.				
Note:				• • •		1.07										
• The resu	its stated above ar	e specific	to the app	proximate test locations as	recorde	ed. CTS	acc	epts no	o liabi	lity for	· any e.	xtrapol	ated u	se of ti	us data	l.

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Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date:

4 to 23-May-22

Checked By:

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 32 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	@veros.c	<u>co.nz</u>			A	Atte	ntion	:	<b>S. C</b>	Corn	wall			
Job Descriptio	n: Wooin	g Tree Su	bdivisio	n, Cromwell												
		A DEDUCT		ED (N/20 1400 1000 T		(* ~	~		25.0							
	SCAL	A PENET	KOMETI	EK (NZS 4402:1988, Test	: 6.5.2); Lot 2	65 – S	ee Pa	age 1	27 foi	·locat	ion pl	an				
Depth	Penetration	Blo	ws /	Interred Allowable												
(mm)	(mm/blow)	100	300	Bearing Capacity												
0.50	10.0	mm	mm	(KF a)			Inf	erre	d Bea	iring	Capa	icity	(kPa)			
0 - 50	10.0	15		233	-											
50 - 100	5.0		-	388		0	50	100	150	200	250	300	350	400	450	500
150 - 200	4.3	17	42	267	0	-								_		
200 - 250	10.0			233	100	-		_						4		
250 - 300	10.0	10		233	200											
300 - 350	10.0			233	200	-										
350 - 400	5.0	15		388	300	-						-	_			
400 - 450	4.5	10	54	416	400	1										
450 - 500	7.1	18	54	299	100	-						-				
500 - 550	4.5	21		416	500											
550 - 600	5.0	21		388	600											
600 - 650	5.0	20		388	-	1										
650 - 700	5.0		4	388	700											
700 - 750	7.1	14	45	299	800											
/50 - 800	7.1	+	4	299	-							-				
850 000	7.1 12 <i>5</i>	11		299	900											
850 - 900 900 - 950	12.5		<u> </u>	198	_ 1000	1	-									
950 - 950	7 1	12		233	Î.	-					$\square$					
1000 - 1050	7.1		1	299	Ξ 1100						-					
1050 - 1100	10.0	12	39	233	<b>4</b> 1200	-						4	_			_
1100 - 1150	6.3			330	)ep	-										
1150 - 1200	7.1	15		299	A 1300	-										
1200 - 1250	6.3	10		330	1400											
1250 - 1300	4.5	19		416	1500	-					L					
1300 - 1350	4.5	22		416	1500	-										
1350 - 1400	4.5	22	53	416	1600	-	-									
1400 - 1450	10.0	10	1	233	1700	-					4					
1450 - 1500	7.1	12		299	1700											
1500 - 1550	8.3	12		267	1800	-										
1550 - 1600	8.3	12		267	1000	-										
1600 - 1650	10.0	11	33	233	1900											
1650 - 1700	8.3			267	2000	-										
1700 - 1750	12.5	10		198	21.00											
1750 - 1800	8.3	haan infamad	fuom Eig 2	267	2100			— In fe	erred Be	aring C	apacity	(50mn	n Interva	ls)		
bearing pressure und	er small structures, N	I.J. Stockwell.	The results a	re relative to the ground	2200	1	_	Infe	arred Be	aring C	anacity	(300m	m interv	als)		
conditions at the time	of test and will be he	avily influenc vatively IAN7	ed if significa endorsemen	nt gravel fraction is present. t does not apply to these values	2300			1		line g e	apacay	(00011				
NZS 3604:2011, Secti	on 3.3.7.1 (b) states t	hat the ultima	e bearing cap	pacity of the foundation shall be	2000											
assumed to be not les	s than 300 kPa if the	number of blo	ws per 100mi nderside of th	n exceeds 5 down to a depth												
greater depths.	in of the whitest joon	is below the u	naersiae of th	te proposeu jooting unu 5 ui		<u> </u>										
F	IELD LO <mark>G: N</mark> Z	C Geotechr	ical Socie	ty Guidelines 2005 (Not l	IANZ Accred	ited);	Lot	265 -	See I	Page 12	27 for	locat	tion pla	ın		
Depth (mm)	Description															
0 to 50	Topsoil & vege	etation (org	anic matte	er).												
50 to 600	Dark brown S	andy GRA	VEL with	minor / some silt and trace	of cobbles. M	oist. T	ightly	y pac	ked. C	Gravel	/ cobb	les, su	ubroun	ded to	round	led,
2010 000	maximum part	ticle size 10	6.0mm; Sa	ind, fine to coarse; Silt, nor	n-plastic.					1.1						
600 to 1300	Light brown S	andy GRA	VEL with	trace of / minor silt. Moist.	Loose. Grave	i, subr	ound	led to	) roun	aed, m	aximu	ım pa	rticle si	ıze 63.(	Jmm;	
1300 to 1500 *	Light grey San	dy GRAVI edium: Sil	EL with tra t. non-place	 ace of silt. Dry. Loose. Gra tic.	vel, subangula	ir to su	ıbrou	indec	l, max	imum	partic	le sizo	e 19.0m	m;		
* NZS 3604:2011. S	Section 3.3.6 reau	ires a minin	<i>um 50mm</i>	diameter auger hole to be co	ompleted to the	depth	of eac	ch sca	ala pen	etrome	eter pr	obe. U	<b>Inable t</b>	о сотр	lete pa	st the
depth indicated.															1	-
Note:																
<ul> <li>The result</li> <li>This report</li> </ul>	ts stated above a rt may not be rej	re specific produced e	to the app xcept in fi	roximate test locations as ull.	recorded. CT	'S acce	epts n	ıo lia	bility	for an	y extr	apola	ted use	of this	s data	•
Tostad D	Z III:-1-: C	Decry	TOL	PCE-han P		+= 22	ЪÆ		,	-1	REDI	Tr	1			
iestea By: F	X. HIPKINS, C.	rearson,	1. Shaw	a C. Fisner Date	e: 4	to 23		iy-22	2	ACI		60	Те	est resu	lts ind	icated
Checked By:	lomph lin	7									$\boldsymbol{\mathcal{N}}$	4	as ou lal	not acc itside th borator	credite ie scop y's	d are be of the
										STING	LABO	RATO	ac	credita	tion	

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

№ 434

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#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 33 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS



Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date:

emplus

Checked By:

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CCREDITED

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4 to 23-May-22

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

outside the scope of the

laboratory's accreditation

TESTING LABORATO

Date: 26 May 2022

<b>Client Details:</b>	Veros,	stephenc	@veros.	co.nz		Attention:	S. Cornwall
Job Descriptio	n: Wooing	g Tree Su	bdivisio	n, Cromwell			
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 267	– See Page 127 for locat	ion plan
Denth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity 1			
(mm)	(IIIII/DIOW)	mm	mm	(kPa)			
0 - 50	12.5	0		198		Inferred Bearing	Capacity (kPa)
50 - 100	12.5	8		198			
100 - 150	8.3	10	20	267	0	50 100 150	200 250 300 350 400
150 - 200	12.5	10	28	198	0		
200 - 250	12.5	10		198	100		
250 - 300	8.3	10		267			
300 - 350	8.3	4.0		267	200		
350 - 400	12.5	10		198	300		
400 - 450	12.5	_	1	198	500		
450 - 500	12.5	8	24	198	400		
500 - 550	16.7			160			
550 - 600	16.7	6		160	500		
600 - 650	16.7			160	600		
650 - 700	167	6		160			
700 - 750	16.7	1	1	160	700		
750 - 800	12.5	7	21	100	800		
800.850	16.7		1	150			
850 000	10.7	8		222	900		
000 050	10.0			233	1000		
900 - 930	12.3	7		198	<b>a</b> 1000		
950 - 1000	10.7		-	100	Ē 1100 —		
1000 - 1050	10./	7	22	100	ų (j		
1050 - 1100	12.5		-	198	E 1200		
1100 - 1150	12.5	8		198	<b>0</b> 1300		
1150 - 1200	12.5			198			
1200 - 1250	10.0	9		233	1400		
1250 - 1300	12.5		-	198	1500		
1300 - 1350	8.3	12	36	267	1500		
1350 - 1400	8.3		-	267	1600		
1400 - 1450	8.3	15		267	1700		
1450 - 1500	5.6			359	1/00		
1500 - 1550	6.3	17		330	1800		
1550 - 1600	5.6		-	359			
1600 - 1650	7.1	13	46	299	1900		
1650 - 1700	8.3			267	2000		
1700 - 1750	5.6	16		359	-		
1750 - 1800	7.1			299	2100	Informed Beauing C	an a site: (50mm Internale)
<ul> <li>Bearing capacity resu bearing pressure und</li> </ul>	ilts stated above have l ler small structures. M	een inferred J. J. Stockwell.	from Fig 2 – The results a	Determination of allowable we relative to the ground	2200	Interred Bearing C	apacity (somm intervais)
conditions at the time	e of test and will be he	wily influence	ed if significa	int gravel fraction is present.		Inferred Bearing C	apacity (300mm intervals)
The inferred values s	hould be used conserv	atively. IANZ	endorsemen	t does not apply to these values.	2300		
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states th	at the ultimat	e bearing cau	pacity of the foundation shall be			
assumed to be not les	s than 300 kPa if the i	umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the wid greater denths.	un of the widest footin	g below the u	nderside of tl	ie proposed footing and 3 at			
F	IELD LOG: NZ	Geotechn	ical Socie	tv Guidelines 2005 (Not 1	ANZ Accredited	d): Lot 267 - See Page 1	27 for location plan
Depth (mm)	Description					,,	
0 to 50	Tonsoil & vegetat	ion (organ	ic matter)				
0.000	Crev / hrown Cw	velly CAN	D with two	nce of / minor silt Moist T:	ightly nacked C.	avel subrounded to row	ded maximum particle
50 to 1400 *	size 53.0mm· San	d. fine to c	oarse: Silt	, non-nlastic.	адниу раскей. СГ	aver, subrounded to foun	iucu, maximum particle
* NZS 3604:2011,	Section 3.3.6 requi	res a minin	100 50mm	diameter auger hole to be co	ompleted to the dep	oth of each scala penetrome	eter probe. Unable to complete past the
depth indicated.							
Note:							
• The resul	ts stated above a	re specific	to the app	proximate test locations as	recorded. CTS a	ccepts no liability for an	y extrapolated use of this data.
• This repo	rt may not be rep	roduced e	xcept in fi	ull.			
	. <b>1</b>	_					
Tested By: I	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e: 4 to	23-May-22	
	11						
Checked Bv:	emplus	1					
						_ccl	REDITEN
						P.	Tast results indicated
						-	as not accredited are

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros	s, <u>stephenc</u>	<u>@veros.</u>	co.nz			Attention: S. Cornwall
Job Description	on: Wooi	ng Tree Su	ıbdivisio	n, Cromwell			
· · · · · ·		-					
	SCA	LA PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2); ]	Lot 26	68 – See Page 127 for location plan
	<b>D</b>	Blo	ws /	Inferred Allowable			
Depth	Penetration	1 100	300	Bearing Capacity <sup>1</sup>			
(mm)	(mm/blow)	mm	mm	(kPa)			
0 - 50	50.0			68			Inferred Bearing Capacity (kPa)
50 - 100	167	- 4		160			
100 - 150	16.7			160	-	0	0 50 100 150 200 250 300 350 400
150 - 200	16.7	- 6	16	160	-	0 :	
200 250	16.7		-	160	-	100	
200 - 230	16.7	6		160	-	100	
230 - 300	16.7			160	-	200	
350 400	10.7	7		100	-		
400 450	12.3			198	-	300 :	
400 - 450	16.7	6	19	160	-	400	
430 - 500	16.7		_	100	-		
500 - 550	10.7	6		160	-	500	
550 - 600	16./			110	-	600	
000-050	25.0	4		119	4		
050 - 700	25.0		-	119	-	700	
700 - 750	25.0	5	14	119	4	000	
750 - 800	16.7		-	160	4	800 -	
800 - 850	16.7	5		160	4	900	] <u>                                     </u>
850 - 900	25.0			119	4	-	
900 - 950	25.0	4		119		1000	
950 - 1000	25.0	-	_	119	un	1100	
1000 - 1050	16.7	6	18	160	(D		
1050 - 1100	16.7	ů	10	160	oth	1200	
1100 - 1150	12.5	8		198	)el	1200	
1150 - 1200	12.5	0		198	Ι	1300 :	
1200 - 1250	16.7	7		160		1400	
1250 - 1300	12.5	/		198		-	
1300 - 1350	12.5	0	20	198		1500	
1350 - 1400	10.0	9	20	233		1600	
1400 - 1450	10.0	10		233		1000	
1450 - 1500	10.0	10		233		1700	
1500 - 1550	8.3	10		267		1000	
1550 - 1600	8.3	12		267		1800	
1600 - 1650	8.3			267		1900	
1650 - 1700	8.3	12	37	267	1	-	
1700 - 1750	7.1			299		2000	
1750 - 1800	8.3	13		267	1	2100	
<sup>1</sup> Bearing capacity res	ults stated above ha	ve been inferred	from Fig 2 –	Determination of allowable	1		Inferred Bearing Capacity (50mm Intervals)
bearing pressure un	der small structures	M.J. Stockwell.	The results of	are relative to the ground		2200	Inferred Bearing Canacity (300mm intervals)
conations at the fin The inferred values	ie oj test and will be should be used cons	neavuy influenc ervativelv. IANZ	eu ij significa 7 endorsemen	ini gravel fraction is present. t does not apply to these values.		2300	- Inicited Dearing Capacity (Joonnin Inicitais)
						2300 "	
NZS 3604:2011, Sec	tion 3.3.7.1 (b) state	s that the ultimative of block	te bearing cap	pacity of the foundation shall be m exceeds 5 down to a depth	1		
equal to twice the w	idth of the widest for	ting below the u	nderside of th	he proposed footing and 3 at			
greater depths.				-	1		
]	FIELD LOG: N	Z Geotechr	ical Socie	ety Guidelines 2005 (Not ]	IANZ A	ccredit	ited); Lot 268 - See Page 127 for location plan
Depth (mm)	Description						
0 to 50	Topsoil & vege	tation (organ	ic matter)				
50 to 1250 t	Grey / brown C	Gravelly SAN	D with tra	ace of / minor silt and trace	e of cobbl	es. Mo	oist. Tightly packed. Gravel, subrounded to rounded, maximum
50 10 1550 *	particle size 10	<u>6.0mm; Sa</u> nd	l, fine to co	oarse; Silt, non-plastic.			
* NZS 3604:2011,	Section 3.3.6 req	uires a minin	num 50mm	diameter auger hole to be co	ompleted	to the a	depth of each scala penetrometer probe. Unable to complete past the
depth indicated.							
Note:							
• The resu	lts stated above	are specific	to the app	proximate test locations as	recorde	d. CTS	S accepts no liability for any extrapolated use of this data.
• This rep	ort may not be i	eproduced e	xcept in f	ull.			
1	•	• • • •					
Tested By:	K. Hipkins, (	C. Pearson,	T. Shaw	v & C. Fisher Dat	e:	4 t	to 23-May-22
-	1	/					
Checked Bv:	emple	10					CPED/S
Checked Dy.	10119-00						PCCKEDITED
							Toot noonlise indicated



as not accredited are outside the scope of the laboratory's accreditation

**CTS** 

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Reference No: 22/1550

outside the scope of the

laboratory's accreditation

TESTING LABORATO

Date: 26 May 2022

Client Details	:	Veros, s	stephenc(	<u>averos.</u>	<u>co.nz</u>				Atter	tion:	S. (	<u>Cornw</u> 8	all		
Job Descripti	on:	Wooing	Tree Su	bdivisio	n, Cromwell										
<b>^</b>		0													
		SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 26	9 – See l	Page 12	27 for loc	ation pl	an			
Donth	Don	tration	Blo	ws /	Inferred Allowable										
(mm)	(mn	(hlow)	100	300	Bearing Capacity <sup>1</sup>										
(mm)	(mn	1/010w)	mm	mm	(kPa)				c		0				
0 - 50	1	25.0	~		119			Ir	iferre	d Bearn	ng Capa	icity (k	(Pa)		
50 - 100	1	16.7	5		160			0 50		0. 150	200	250	200	250	40.0
100 - 150	1	16.7	-	10	160		0.5	0 50		150	200	250	300	350	400
150 - 200	1	12.5	7	18	198		0								
200 - 250	1	16.7			160		100								
250 - 300	1	16.7	6		160										
300 - 350		16.7	_		160		200								
350 - 400	1	25.0	5		119		300								
400 - 450		16.7			160		-								
450 - 500		16.7	6	17	160		400								
500 - 550	1	16.7			160		500								
550 - 600	1	16.7	6		160		500								
600 - 650		25.0	_		119		600								
650 - 700	1	16.7	5		160		50.0								
700 - 750	1	16.7		1	160		700								
750 - 800	1	16.7	6	15	160		800								
800 - 850		25.0	1		119		-								
850 - 900		25.0	4		119		900								
900 - 950		167			160		1000								
950 - 1000		25.0	5		110	n)	1000								
1000 1050		25.0			119	mı	1100								
1050 1100		167	5	17	119	h (									
1100 1150		16.7			160	ptl	1200								
1100 - 1150		10.7	7		100	De	1300								
1150 - 1200		12.5			198							4			
1200 - 1250		12.5	7		198		1400								
1250 - 1300		10./			160		1500								
1300 - 1350		10.0	11	31	233		1500								
1350 - 1400	_	8.3			267		1600								
1400 - 1450	_	8.3	13		267										
1450 - 1500	-	7.1	-		299		1700								
1500 - 1550		10.0	10		233		1800								
1550 - 1600	1	10.0			233		1000								
1600 - 1650	]	10.0	10	31	233		1900								
1650 - 1700	]	10.0		•••	233		2000								
1700 - 1750	1	10.0	11		233		2000								
1750 - 1800		8.3			267		2100								
<sup>1</sup> Bearing capacity res	sults stated	above have be	een inferred j 1. Stockwell	from Fig 2 – The results of	Determination of allowable		-		—— Infe	rred Bearin	g Capacity	(50mm Ir	atervals)		
conditions at the tim	ne of test a	nd will be hea	vily influence	ed if significa	nt gravel fraction is present.		2200		In fe	rred Bearin	σ Canacity	(300mm ·	intervals)		
The inferred values	should be	used conserva	tively. IANZ	endorsemen	t does not apply to these values.		2300				B cupitery	(000011111			
NZS 3604:2011. See	ction 3.37	l (b) states the	at the ultimat	e bearing car	pacity of the foundation shall be		2000								
assumed to be not l	ess than 30	0 kPa if the n	umber of blo	ws per 100m	<i>n</i> exceeds 5 down to a depth										
equal to twice the w	vidth of the	widest footing	g below the u	nderside of th	ne proposed footing and 3 at										
greater aepins.	FIELDI	0C+ N7	Geotechn	ical Socio	ty Guidelines 2005 (Not I	ANZ	ccredit	ted)• I e	t 269 .	See Page	127 for	location	n nlan		
Denth (mm)	Descrir	tion	Scottill	icai Soule	<i>ij</i> Guluelines 2005 (1101 I	<i>E</i>	uli	, L0	. 207 -	Sec 1 age	12/101	iscatio	- pian		
	Torsel	& vocate 4	ion (orac-	in metter)											
0 10 100	Topsoff	& vegetati	ion (organ	n matter)	·	ah 4	a alex 1 4	7	<b>b</b>	dod 4	nnd d				
100 to 1400 *	Grey / t	brown Gra	veny SAN	D with tra	ce of / minor silt. Moist. Th	gntly p	аскеd. (	Jravel, s	ubrour	ued to ro	unded, n	aximun	n particl	ie	
* NZS 3604.2011	Size 3/.	3 3 6 roani	a, mie to c	um 50mm	, non-plastic. diameter auger hole to be se	mnlata	to the s	lenth of a	ach con	la nonatra	meter n=	obe Une	hle to co	mnlata -	act the
depth indicated	, section .	iequii	сэ а ШШШП.	am Somm	unanieter auger note to De CO.	mpietee		iepin or e	аси вся	ia penetro	meter pro	DE. UIIA	<i><i>जा</i>ट <i>10 C</i>0</i>	mpiete p	ası 111C
Note															
The was	ilte etata	d abova ar	a snaaifia	to the ar-	wavimata tast locations as	Pagaud	ad CTS	anonto	no lia	hility for	any auto	anolator	1 1150 05	this dat	a
Ine rest	uis sidile out	u uvove dr	e specific	wart in c	In oximule lest locations as	record	eu. UIS	accepts	no ua	ouny jor	uny extre	apointen	use of	inis dati	<i>ı</i> .
• This rep	ort may	not be rep	roauced e.	xcept in fi											
Tested By:	K Hin	kins C 1	Pegreon	T Show	& C Fisher Date		A +	0 23_M	[av_??						-
restru Dy.	к. шр	кшэ, С. I	i cai suil,	1. Shaw	a c. risher Date			U 23-1VI	ay-22						
Checked By:	ln	galio									CCREDI	TED			
	,									Ŷ		~	Test *	esulte in	licated
												-	as not	accredit	ed are



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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

Wooing Tree Subdivision, Cromwell           SCALA PENERONETRE (NCS 4402:1988, Test 65.2); Lat 270 – See Page 127 for location plan           Depth         Fequivalent         Blows // mm         Inferred Monsable Berring Capacity / Berring Capacity	<b>Client Details:</b>	Veros,	<u>stephenc</u>	<u>@veros.</u>	co.nz		Attention:	S. Cornwall			
SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2): Lot 270 – See Page 127 for location plan           Depth (um)         Equivalent (um)/(um)/(um)/(um)         Blows / (um)         Inferred Allovable (kPa)         Inferred Allovable (kPa)           0 - 50         100.0         1         36           150 - 200         100.0         1         36           200 - 250         25.0         5         100           200 - 250         25.0         5         100           300 - 250         16.7         5         100           400 - 450         16.7         6         17           100         16.7         6         160           500 - 600         16.7         6         160           500 - 600         16.7         6         160           600 - 650         16.7         6         160           700 - 750         16.7         6         160           100 - 1050         15.7         19         198           800 - 850         16.7         5         16           1100 - 1150         12.0         13.0         13.0           1100 - 1150         12.0         13.0         13.0           1150 - 12.00         10.0         23	Job Description	n: Wooing	Tree Su	ıbdivisio	n, Cromwell						
SCALA PENEROMETER (VZS 4402:1988, Test 6.5.2): Lot 270 – See Page 127 for location plan           Depth (mm)         Equivalent (mm/blow)         Inferred Allowable Bearing Capacity 1 (kPa)         Inferred Bearing Capacity 1 (kPa)           0 - 50         100.0         1         36           50 - 100         100.0         1         36           100 - 250         5.0         10         68           100 - 250         5.0         100         10           200 - 250         5         100         100           200 - 250         5         100         100           300 - 350         16.7         6         100           300 - 350         16.7         6         160           500 - 550         16.7         6         160           500 - 550         16.7         6         160           500 - 500         16.7         6         160           500 - 500         16.7         6         160           1000 - 150         16.7         7         160           1000 - 150         16.7         7         100           1000 - 150         16.7         160         100           1150 - 1000         10.0         2.33 <td< td=""><td></td><td> 8</td><td></td><td></td><td>•</td><td></td><td></td><td></td><td></td></td<>		8			•						
Depth (mm)         Equivalent (mm/blow)         Blows / mm         Inferred Allovable Bearing Capacity / (kPa)           0 - 50         100,0         1         36           50 - 100         100,0         1         36           100 - 150         50,0         100,0         1         36           100 - 150         50,0         100,0         1         36           100 - 150         50,0         100,0         1         36           100 - 150         50,0         100         100         100           200 - 250         25,0         5         100         100           100 - 150         16,7         6         17         160           100 - 250         16,7         6         160         100           100 - 150         16,7         6         160         100           100 - 150         16,7         6         160         100           900 - 100         16,7         6         160         100           100 - 150         16,7         6         160         100           100 - 150         16,7         6         160         100           100 - 150         16,7         7         19         <		SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 270 -	See Page 127 for loca	tion plan			
Depth (mm)         Penetration         100         300         Bearing Capacity 1           0 50         100.0         1         36           50. 100         100.0         1         36           100 - 150         50.0         10         10         66           200 - 250         25.0         5         160         100         100           200 - 250         25.0         5         160         100         100         100           300 - 350         16.7         5         160         100 <td>Donth</td> <td>Equivalent</td> <td>Blo</td> <td>ws /</td> <td>Inferred Allowable</td> <td></td> <td></td> <td></td> <td></td>	Donth	Equivalent	Blo	ws /	Inferred Allowable						
(mm/blow)         mm         mm         (kPa)           0 - 50         100.0         1         36           50 - 100         100.0         1         36           100 - 150         50.0         16.7         4         10           250 - 200         16.7         4         10         160           200 - 250         25.0         5         100         100           300 - 350         16.7         5         100         100           400 - 450         16.7         6         100         100           500 - 000         16.7         6         160         100           600 - 550         16.7         6         160         100           750 - 800         16.7         6         160         100           900 - 250         16.7         6         160         100           1000 - 180         16.7         5         110         100           1100 - 180         16.7         5         110         100           1100 - 180         16.7         5         110         100           1200 - 1250         25.0         5         119         100         100	(mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>						
0         -50         100.0         1           30         100         100.0         1           30         100	(mm)	(mm/blow)	mm	mm	(kPa)		Inferred Bearing	g Capacity (kPa)			
So         100         100.0         1           100         150         50         00         160         200         250         100         160         250         160         160         160         1500         1500         150         150         150         150         150         150         150         150	0 - 50	100.0	1		36						
100 - 150         50.0         4         10         68           200 - 250         25.0         119         100         100           250 - 300         16.7         5         160           300 - 350         16.7         5         160           300 - 400         25.0         5         119           400 - 450         16.7         6         100           500 - 500         16.7         6         100           500 - 500         16.7         6         160           500 - 500         16.7         6         160           500 - 500         16.7         6         160           700 - 750         16.7         6         160           700 - 750         16.7         6         160           1000 - 1050         16.7         6         160           1000 - 1050         16.7         7         19         198           1000 - 1050         16.7         7         19         100           1000 - 1050         16.7         7         10         100           1100 - 1150         16.7         5         119         120           1200 - 1250         25.0         5 </td <td>50 - 100</td> <td>100.0</td> <td>1</td> <td></td> <td>36</td> <td>0</td> <td>50 100</td> <td>150 200 250</td> <td>300</td>	50 - 100	100.0	1		36	0	50 100	150 200 250	300		
150-200       16.7       160         200-250       25.0       5         300-350       16.7       5         300-350       16.7       6         400-450       16.7       6         500-350       16.7       6         500-600       16.7       6         500-300       16.7       6         500-300       16.7       6         500-300       16.7       6         500-600       16.7       6         500-600       16.7       6         1000-1650       16.7       6         1000-1650       16.7       6         1000-1650       16.7       6         1000-150       16.7       5         1100-1150       16.7       7         1200-1250       25.0       5         1100-1150       10.7       7         120-1250       25.0       119         120-1250       10.0       10         1230-1400       10.7       10         1300-1550       10.0       10         1300-1550       10.0       10         1300-1550       10.0       233         1500-17	100 - 150	50.0	4	10	68	0			-		
220         250         250         119           200         16.7         5         160           300         250         16.7         5         119           400         450         16.7         6         119           500         500         16.7         6         100           500         500         16.7         6         160           500         500         16.7         6         160           600         650         16.7         6         160           750         800         12.5         7         19         108           800         950         16.7         6         160         100           950         16.7         6         160         100         100           100         16.7         5         119         120 <td< td=""><td>150 - 200</td><td>16.7</td><td>-</td><td>10</td><td>160</td><td>100</td><td></td><td></td><td>_</td></td<>	150 - 200	16.7	-	10	160	100			_		
220-300       16.7       5         300-350       16.7       5         300-350       16.7       6         400-450       16.7       6         550-600       16.7       6         550-600       16.7       6         550-600       16.7       6         550-600       16.7       6         650-700       16.7       7         19       160       700         750-800       16.7       6         100-1550       16.7       6         100-1550       16.7       6         100-1550       16.7       6         1100-1150       16.7       5         1100-1150       16.7       5         1100-1150       16.7       5         1100-1150       16.7       5         1100-1150       16.7       7         120-1200       25.0       5         1110       1230-1300       16.7         1200-150       10.0       233         1500-150       10.0       233         1500-160       8.3       12         1200-1550       10.0       233         1500-1700	200 - 250	25.0	5		119						
330         16.7         5           400         25.0         5           10         16.7         6           50         16.7         6           50         16.7         6           50         16.7         6           500         16.7         6           500         16.7         6           500         16.7         6           160         160           600         650         16.7           700         750         16.7           700         750         16.7           700         750         16.7           950         106.7         100           100         15.7         16           100         15.0         16.7           100         15.0         16.7           1100         15.0         16.7           1100         15.0         16.7           1100         15.0         100           1100         15.0         100           1100         15.0         10.0           1100         15.0         10.0           1500         10.0         2.2	250 - 300	16.7	5		160	200			-		
350-400         25.0         2           400-450         16.7         6         17         160           500-500         16.7         6         160         600           500-500         16.7         6         160         600           600-650         16.7         6         160         600           700-750         16.7         6         160         600           700-750         16.7         6         160         600           900-950         16.7         6         160         600           900-950         16.7         6         160         100           900-950         16.7         6         160         100           900-950         16.7         5         16         119           1200-1200         25.0         5         119         1200         1300           1300-1350         12.5         7         22         198         1300         160         1300           1400-1450         10.0         10         233         1300         1600         100         233         1000         100         233         1000         100         100         100	300 - 350	16.7	5		160	300					
400-450         16.7         6         17         160           500-550         16.7         6         160           500-550         16.7         6         160           500-550         16.7         6         160           600-650         16.7         6         160           700-750         16.7         6         160           700-750         16.7         6         160           800-850         16.7         6         160           900-950         16.7         6         160           900-950         16.7         6         160           900-950         16.7         6         160           1000-1050         16.7         5         16           1100-1150         16.7         5         160           1100-1250         25.0         5         119           1200-1250         25.0         5         119           1300-1350         12.5         7         198           1300-1350         10.0         10         233           1500-1600         10.0         233           1500-1600         10.0         233           1500-1600 </td <td>350 - 400</td> <td>25.0</td> <td></td> <td>_</td> <td>119</td> <td></td> <td></td> <td></td> <td></td>	350 - 400	25.0		_	119						
430-500       16.7       6         500-550       16.7       6         600-650       16.7       6         600-650       16.7       6         700-750       16.7       7         19       160         800-850       16.7       6         700-800       12.5       7       19         800-850       16.7       6       160         900-950       16.7       6       160         900-950       16.7       6       160         1000-1050       16.7       5       16         1100-1150       16.7       5       119         1200-1200       25.0       5       119         1200-1200       25.0       5       119         1200-1200       25.0       5       119         1200-1200       25.0       5       119         1200-1250       10.0       10       233         1500-1500       10.0       10       233         1500-1500       10.0       -       233         1600-100       233       1000       1000         1500-1500       10.0       -       233	400 - 450	16.7	6	17	160	400					
S50         16.7         6         160           650         600         16.7         6         160           600         650         16.7         6         160           700         750         16.7         7         19         160           700         750         16.7         7         19         160           700         750         16.7         6         160           900         16.7         6         160         900           950         1000         16.7         6         160           1000         150         16.7         5         16         119           1200         15.7         5         16         119         1200           1200         15.7         7         12         198         1300         160           1300         16.7         5         160         1300         160         1300         16.7           1200         25.0         5         119         1400         1500         1500         160         1300         1600         1600         1600         1600         1600         1500         1500         1600         10 <td>450 - 500</td> <td>16.7</td> <td>÷</td> <td></td> <td>160</td> <td>500</td> <td></td> <td></td> <td></td>	450 - 500	16.7	÷		160	500					
550         -100         16.7         160           600         -650         16.7         6         160           700         -750         16.7         7         19         106           700         -750         16.7         7         19         106           800         -850         16.7         6         160           900         -950         16.7         6         160           900         -950         16.7         6         160           900         -950         16.7         6         160           1000         1050         16.7         5         16           1150         16.7         5         119         120           1200         125.0         5         119         120           1200         125.0         5         119         120           1200         125.0         5         119         1400           1400         1400         16.7         7         22           1500         1500         10.0         10         233           1500         1500         10.0         -         233           1600	500 - 550	16.7	6		160						
600         -650         -16.7         6           700         16.7         7         19         160           700         750         16.7         7         19         180           800         850         16.7         6         160         900           900         950         16.7         6         160         900           900         950         16.7         6         160         900           950         100         16.7         6         160         100           1050         1100         25.0         5         16         110         1200         120         120         120         1300         16.7         5         160         1400         1400         16.7         5         160         1300         1400         16.7         5         160         1300         1400         16.7         5         160         1400         16.7         5         160         1500         1300         1400         16.7         7         22         198         1500         10.0         10         233         1500         1500         10.0         10         233         1500         150 <t< td=""><td colspan="11"><b>500 - 600 16.7 160</b> 600</td></t<>	<b>500 - 600 16.7 160</b> 600										
box         r/00         16.7         19         160           700         750         16.7         7         19         19         160           800         850         16.7         6         160         900         900         900         16.7         6         160         900         900         900         16.7         6         160         900         900         900         16.7         6         160         1000         1000         1000         1000         150         16.7         6         160         1000         1000         150         16.7         5         119         1200         1200         1250         25.0         5         119         1200         1300         16.7         7         22         198         1300         150         1600         150         1500         1600         150         1500         1600         150         150         1600         150         150         1600         150         150         1600         1000         233         150         150         1600         150         150         1600         150         150         1600         150         150         1600         10 <t< td=""><td colspan="10">650 - 700 16.7 6 160 700 700</td></t<>	650 - 700 16.7 6 160 700 700										
100       -150       16./       7       19       100         750       3800       12.5       7       19       198         800       800       16.7       6       160         900       950       16.7       6       160         900       950       16.7       6       160         1000       1050       16.7       5       16         1050       100       25.0       5       119         1200       1250       25.0       5       119         1200       1250       25.0       119       1400         1350       1400       16.7       7       22       198         1350       10.0       10       233       1500       16.7         1550       10.0       10       233       1600       1600         1500       1500       10.0       10       233       1600       1600         1650       10.0       10       233       1600       100       100         1500       10.0       -       205       1100       1200       100       100         1500       10.0       -       233 <td colspan="11">650 - 700 16.7 160 /00 /00 /00 /00 /00 /00 /00 /00 /00 /</td>	650 - 700 16.7 160 /00 /00 /00 /00 /00 /00 /00 /00 /00 /										
1/20 - 800       12.5       198         800 - 850       16.7       6         900 - 950       16.7       6         950 - 1000       16.7       6         1000 - 1050       16.7       6         1000 - 1050       16.7       6         1100 - 1150       16.7       160         1100 - 1250       25.0       5         1120 - 1250       25.0       5         1230 - 1300       16.7       160         1300 - 1350       12.5       7         1230 - 1300       16.7       160         1300 - 1350       12.5       7         1530 - 1400       16.7       160         1530 - 1400       10.0       233         1500 - 1550       10.0       10       233         1500 - 1550       10.0       10       233         1500 - 1550       10.0       -       233         1600 - 1650       8.3       12       267         1700 - 1750       10.0       -       233         1800 - 1550 - 10.0.0       -       233         1900 - 2000       2100       2100         2100 - 10       233         1900 - 10 <td colspan="11">700 - 750         16.7         7         19         160         800           750 - 800         12.5         7         19         198         800</td>	700 - 750         16.7         7         19         160         800           750 - 800         12.5         7         19         198         800										
800 - 850         16.7         6         160           900 - 950         16.7         6         160           900 - 950         16.7         6         160           900 - 950         16.7         6         160           900 - 950         16.7         6         160           900 - 1050         16.7         5         160           1000 - 1050         16.7         5         119           1200 - 1250         25.0         5         119           1200 - 1250         25.0         5         119           1300 - 1350         12.5         7         22         160           1400 - 1450         10.0         10         233         1500           1500 - 1550         10.0         10         233         1600           1500 - 1550         10.0         10         233         1600           1650 - 1700         8.3         12         267         2000         2000           1000 - 1550         10.0         233         1900         2100         2100         2100           1000 - 1550         10.0         -         233         267         233         267         233         207 <td colspan="11">750 - 800         12.5         198           800 - 850         16.7         160         900</td>	750 - 800         12.5         198           800 - 850         16.7         160         900										
880 - 900         16.7         160           900 - 950         16.7         6           1000 - 1050         16.7         6           1000 - 1050         16.7         5           1100 - 1150         16.7         5           1100 - 1150         16.7         5           1100 - 1150         16.7         5           1100 - 1150         16.7         5           1250 - 1300         16.7         7           1250 - 1300         16.7         7           1300 - 1350         12.5         7           1300 - 1550         10.0         10           1500 - 1550         10.0         10           1500 - 1550         10.0         10           1600 - 1650         8.3         12           1600 - 1650         8.3         12           1600 - 1650         8.3         12           1600 - 1650         8.3         12           1600 - 1650         8.3         12           1600 - 1650         8.3         12           1600 - 1650         8.3         12           1700 - 1750         10.0         -           7853/ 3641-2011. Section 3.3.21 (b) states that the ulimabe beri	800 - 850	16.7	6		160	900					
900 - 930         16.7         6           950 - 1000         16.7         5           16         160           1000 - 1050         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         16.7           1100 - 1150         10.0           1100 - 1150         10.0           1100 - 1550         10.0           1100 - 1550         10.0           1100 - 1550         10.0           1100 - 1750         10.0           1100 - 1750         10.0           1100 - 1750         10.0           1100 - 1750         10.0           1100 - 1750         10.0           1100 - 1750         10.0           1100 - 10         233           1100 - 1750         10.0           1100m zccccd 3 down ta be	850 - 900	16.7	1		160	1000					
390 - 1000         16.7         100 <th< td=""><td>900 - 950</td><td>16.7</td><td>6</td><td></td><td>100</td><td></td><td></td><td></td><td></td></th<>	900 - 950	16.7	6		100						
1000 - 1050         16.7         5         16         100           1050 - 1150         16.7         5         16         119           1100 - 1150         16.7         5         119           1200 - 1250         25.0         5         119           1200 - 1300         16.7         7         22         198           1300 - 1350         12.5         7         22         198           1350 - 1400         16.7         160         1500           1400 - 1450         10.0         10         233           1500 - 1550         10.0         10         233           1500 - 1550         10.0         10         233           1600 - 1650         8.3         12         267           1700 - 1750         10.0         -         233           1650 - 1700         8.3         12         267           1700 - 1750         10.0         -         233           1600 - 1650         8.3         12         233           1600 - 1650         8.3         12         233           1600 - 1650         8.3         12         233           1600 - 1650         8.3         12         <	950 - 1000	16.7		_	100	<u> </u>					
1000         1100         23.0         119           1100         150         16.7         5         119           1200         1250         25.0         5         119           1200         1250         25.0         5         119           1200         1250         25.0         5         119           1200         1250         25.0         5         119           1200         1300         16.7         7         22         198           1350         1400         16.7         7         22         100           1500         10.0         10         233         1500         1600           1500         1500         10.0         233         1600         1700         1800           1500         1600         10         233         1900         2000         2000         2000         2000         2000         2000         2100         2200         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100         2100	1000 - 1050	25.0	5	16	100	5 1200					
1150       1200       25.0       5       119         1150       1200       25.0       5       119         1200       1250       25.0       5       119         1250       1300       16.7       5       160         1300       1350       12.5       7       22       198         1350       1000       16.7       7       22       160         1400       1400       16.7       100       233         1500       1550       10.0       10       233         1500       1550       10.0       10       233         1600       1650       8.3       12       267         1700       10.0       233       120       267         1700       10.0       233       120       200         1800       1600       1600       100       233         1900       2100       2100       2100       2100         1900       10.0       2000       2100       2100         10600       10.0       2000       2100       2100         10601       13.71 (b) state that the ultimate baring capacity of the foundation shalt be assumed to be not le	1050 - 1100										
1130 - 1200       25.0       119         1200 - 1250       25.0       5         1300 - 1350       12.5       7         1300 - 1350       12.5       7         1400 - 1450       10.0       10         1450 - 1500       10.0       10         1550 - 1600       10.0       10         1550 - 1600       10.0       10         1550 - 1600       10.0       233         1600 - 1650       8.3       12         267       2067         1650 - 1700       8.3       12         2667       2016       10.0         1600 - 1650       8.3       12         267       2000       2000         1600 - 1700       8.3       12         2667       10.0       -         1700 - 1750       10.0       -         233       2667         1650 - 1700       8.3       12         200       2100       2000         2100       -       233         1700 - 1750       10.0       -         1710 - 1750       3.37.10       9 states that the utimate bearing capacity of the foundation shall be astamotion of allowable bearing capacity issue that the u	1100 - 1150	25.0	5		100	<b>A</b> 1300					
1200 - 1230       23.0       5         1250 - 1300       16.7       5         1300 - 1350       12.5       7         1350 - 1400       16.7       7         1400 - 1450       10.0       10         1500 - 1550       10.0       10         1500 - 1550       10.0       10         1500 - 1650       8.3       12         1600 - 1650       8.3       12         1600 - 1650       8.3       12         1600 - 1650       8.3       12         1600 - 1650       8.3       12         1600 - 1650       8.3       12         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1700 - 1750       10.0       -         1200	1200 1250	25.0			119	1400					
1300       1300       100       100         1300       1350       12.5       7       22       198         1350       1400       16.7       7       22       100         1400       1450       10.0       10       233       1600         1450       1500       10.0       10       233       1700       1600         1550       10.0       10       233       1800       1700       1800         1650       1550       10.0       10       233       1900       1900         1650       1700       8.3       12       267       1000       1900       1900         1650       1700       10.0       -       233       1900       2100       10000       1000       1000	1200 - 1230	<u> </u>	5		119						
1350       1400       16.7       7       22       160         1350       1400       16.7       7       22       160         1350       1400       16.7       7       22       160         1450       10.0       10       233       17       1700       1800         1550       10.0       10       233       1700       1800       1800         1650       1550       10.0       10       233       1800       1900         1650       1700       8.3       12       267       207       200       2000         1700       1750       10.0       -       233       267       2000       20	1230 - 1350	12.5		_	100	1500					
1400       1450       10.0       10       233         1450       1500       10.0       10       233         1500       1550       10.0       10       233         1550       1600       10.0       10       233         1550       1600       10.0       10       233         1600       1650       8.3       12       267         1650       1700       8.3       12       267         1650       10.0       -       233       1900         2000       -       2000       2000       2000         1660       1700       8.3       12       267         1650       1700       8.3       12       267         1660       10.0       -       233       2000         2100       -       2100       2100       2100         2200       -       Inferred Bearing Capacity (50mm Intervals)       2200         2200       -       Inferred Bearing Capacity (300mm intervals)       2300         2300       -       Inferred Bearing Capacity (300mm intervals)       2300         2100       -       Inferred Bearing Capacity (300mm intervals)       2300	1350 - 1400	16.7	7	22	160	1600					
1450       10.0       10       233         1450       1500       10.0       10       233         1500       1550       10.0       10       233         1550       1600       10.0       10       233         1600       1650       8.3       12       267         1650       10.0       -       233       1900         1650       10.0       -       233       1900         1650       10.0       -       233       1900         1650       10.0       -       233       1900       2000         1700       1700       8.3       12       267       2000       2000         1700       10.0       -       233       1900       2000<	1400 - 1450	10.7			233	1000					
1500       10000       100000	1450 - 1500	10.0	10		233	1700					
1500       10.0       10       220         1550       1600       10.0       233         1600       -1650       8.3       12         200       233       1900         1650       1700       8.3       12         201       267       2000         1700       -1750       10.0       -         202       267       2000         2033       2000       2000         2000       233       2000         1700       -1750       10.0       -         202       2.00       2000         2000       2000       2000         2000       2000       2000         2000       -       2000         2000       -       10         2000       -       1000         2000       -       1000         2000       -       1000         2000       -       -         2000       -       -         2000       -       -         2000       -       -       -         2000       -       -       -         2000       -	1500 - 1550	10.0			233	1800					
1600       10000       100000	1550 - 1600	10.0	10		233	1800					
1000       100       12       207         1650       1700       8.3       12       267         1700       10.0       -       233         'Bearing capacity results stated above have been inferred from Fig 2 - Determination of allowable bearing pressure under small structures, M.J. Stockwell. The results are relative to the ground conditions at the time of test and will be heavily influenced if significant gravel fraction is present. The inferred values should be used conservatively. LANZ endorsement does not apply to these values.       2000         NZS 3604:2011, Section 3.3.7.1 (b) states that the ultimate bearing capacity of the foundation shall be assumed to be not less than 300 kPa if the number of blows per 100mm exceeds 5 down to a depth equal to twice the width of the widest footing below the underside of the proposed footing and 3 at greater depths.       2000         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)       Description         0 to 150       Topsoil & vegetation (organic matter).         150.4       2000         150.4       2000	1600 - 1650	8.3		= 32	267	1900					
1700 - 1750       10.0       -       233         'Bearing capacity results stated above have been inferred from Fig 2 - Determination of allowable bearing pressure under small structures, M.J. Stockwell. The results are relative to the ground conditions at the time of test and will be heavily influenced if significant gravel fraction is present. The inferred values should be used conservatively. LANZ endorsement does not apply to these values.       2000       2100         NZS 3604:2011, Section 3.3.7.1 (b) states that the ultimate bearing capacity of the foundation shall be assumed to be not less than 300 kPa if the number of blows per 100mm exceeds 5 down to a depth equal to twice the width of the widest footing below the underside of the proposed footing and 3 at greater depths.       2300       2300         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)       Description       0 to 150       Topsoil & vegetation (organic matter).         120.4       Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	1650 - 1700	8.3	12	-01	267	2000					
<sup>1</sup> Bearing capacity results stated above have been inferred from Fig 2 – Determination of allowable bearing pressure under small structures, M.J. Stockwell. The results are relative to the ground conditions at the time of test and will be heavily influenced if significant gravel fraction is present. The inferred values should be used conservatively. IANZ endorsement does not apply to these values. NZS 3604:2011, Section 3.3.7.1 (b) states that the ultimate bearing capacity of the foundation shall be assumed to be not less than 300 kPa if the number of blows per 100mm exceeds 5 down to a depth equal to twice the width of the widest footing below the underside of the proposed footing and 3 at greater depths.       2100       2200         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)       Description         0 to 150       Topsoil & vegetation (organic matter).         150.4.1000       Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	1700 - 1750	10.0	-	1	233	2000					
bearing pressure under small structures, M.J. Stockwell. The results are relative to the ground conditions at the time of test and will be heavily influenced if significant gravel fraction is present. The inferred values should be used conservatively. IANZ endorsement does not apply to these values.       2200         NZS 5604:2011, Section 3.3.7.1 (b) states that the ultimate bearing capacity of the foundation shall be assumed to be not less than 300 kPa if the number of blows per 100nm exceeds 5 down to a depth equal to twice the width of the widest footing below the underside of the proposed footing and 3 at greater depths.       2300         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)       Description         0 to 150       Topsoil & vegetation (organic matter).         120, 120, 120, 120, 120, 120, 120, 120,	<sup>1</sup> Bearing capacity resul	ts stated above have b	een inferred	from Fig 2 –	Determination of allowable	2100					
The inferred values should be used conservatively. IANZ endorsement does not apply to these values.       2200         NZS 3604:2011, Section 3.3.7.1 (b) states that the ultimate bearing capacity of the foundation shall be assumed to be not less than 300 kPa if the number of blows per 100mm exceeds 5 down to a depth equal to twice the width of the widest footing below the underside of the proposed footing and 3 at greater depths.       2300         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)       Description         0 to 150       Topsoil & vegetation (organic matter).         120.1.1000       Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	bearing pressure unde	er small structures, M.	J. Stockwell.	The results of the signification of the second seco	are relative to the ground	2200	Inferred Bearing	Capacity (50mm Intervals)			
NZS 3604:2011, Section 3.3.7.1 (b) states that the ultimate bearing capacity of the foundation shall be assumed to be not less than 300 kPa if the number of blows per 100mm exceeds 5 down to a depth equal to twice the width of the widest footing below the underside of the proposed footing and 3 at greater depths.       2300         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)       Description         0 to 150       Topsoil & vegetation (organic matter).         120.4       Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	The inferred values sh	hould be used conserve	tively. IANZ	endorsemen	t does not apply to these values.	2200	Inferred Bearing	Capacity (300mm intervals)			
assumed to be not less than 300 kPa if the number of blows per 100mm exceeds 5 down to a depth equal to twice the width of the widest footing below the underside of the proposed footing and 3 at greater depths.         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)       Description         0 to 150       Topsoil & vegetation (organic matter).         120.1.100       Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	N75 3604.2011 Sand	an 3 3 7 1 (k) states the	at the plain	ta haarina aa	nacity of the foundation shall La	2300					
equal to twice the width of the widest footing below the underside of the proposed footing and 3 at greater depths.         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)         Description         0 to 150       Topsoil & vegetation (organic matter).         ISO (See V brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	assumed to be not less	s than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth						
greater depths.         FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 270 - See Page 127 for location plan         Depth (mm)       Description         0 to 150       Topsoil & vegetation (organic matter).         ISEA - 1200         Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	equal to twice the wide	th of the widest footing	g below the u	nderside of th	he proposed footing and 3 at						
Depth (mm)       Description         0 to 150       Topsoil & vegetation (organic matter).         120 / 1200       Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	greater depths. FIFI D LOC: NZ Contachnical Society Cuidalines 2005 (Nat LANZ Acaradited): Lat 270 See Dags 127 for location rise										
0 to 150       Topsoil & vegetation (organic matter).         150 / 1200       Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	Description Description										
Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded. maximum particle	0 to 150 Tonsoil & vegetation (organic matter)										
170. 1200 Grey / brown Graveny SAND with trace of / minor site wioist. Fightiv backed. Gravel, subrounded to rounded, maximum barticle	Grey / brown Gravelly SAND with trace of / minor silt Moist Tightly packed Gravel subrounded to rounded maximum particle										
150 to 1200 size 37 5mm; Sand fine to coarse; Silt non-plastic	150 to 1200										
1200 to 1400 * Light group SAND with trans of / minor silt Moist Tightly nearly Sand fing to accurat Silt non plastic											
1200 to 1400 Light grey SAND with trace of / minor site information areas hold to be completed to the dust of each and the provident to the light of	1200 to 1400 *	Light grey SAN	D with tra	ace of / mil	nor sitt. Wioist. Tigntiy paci	keu. Sanu, fine to c	varse; Sill, non-plastic.		4 41		
" INZO 5004:2011, Section 5.5.0 requires a minimum summ diameter auger noie to be completed to the depth of each scala penetrometer probe. Unable to complete paid depth indicated	" NZS 3604:2011, S denth indicated	section 3.3.6 requir	res a minin	num 50mm	uiameter auger hole to be co	ompleted to the dept	n oi each scala penetron	ieter probe. Unable to complete past	t the		
	Nota:										
NUIC.	The marrie										
<ul> <li>The results stated above are specific to the approximate test tocations as recorded. CTS accepts no habitity for any extrapolated use of this data.</li> <li>This report may not be reproduced except in full</li> </ul>	<ul> <li>The result</li> <li>This ronor</li> </ul>	s suucu uvove ur rt may not he ren	e specific roducod a	wine upp	nommute test tocultons as all		cepts no taotany jor a	ny extrupotatea use oj this dala.			

Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22 Checked By: *templuo*Test results indicated as not accredited are outside the scope of the laboratory's accreditation
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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	averos.	co.nz			Attention: S. Cornwall				
Job Description	n: Wooin	g Tree Su	ıbdivisio	n, Cromwell							
-											
	SCAI	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2); L	Lot 27	/1 – See Page 127 for location plan				
Denth	Penetration	Blo	ows /	Inferred Allowable							
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>							
()	(	mm	mm	(kPa)			Informed Descript Conserts (1.D.s)				
0 - 50	25.0	5		119			Interret bearing Capacity (Kra)				
50 - 100	16.7	5		160	_	(	0 50 100 150 200 250 300 350 400 450 500				
100 - 150	10.0	- 11	27	233	_	0 :					
150 - 200	8.3			267	_						
200 - 250	8.3	11		267	_	100					
250 - 300	10.0			233	-	200					
300 - 350	16.7	6		160	-						
350 - 400	16.7	-		160	_	300					
400 - 450	12.5	8	20	198	_	400					
450 - 500	12.5	-		198	-						
500 - 550	16.7	6		160	-	500					
550 - 600	16.7			160	-	600					
600 - 650	10.7	7		100	-						
050 - 700	12.5			198	-	700					
750 800	25.0	5	17	110	-	800					
900 850	23.0			119	-						
850 900	25.0	5		110		900					
900 - 950	16.7			160	-	1000					
950 - 1000	12.5	7		100	(u	1000					
1000 - 1050	16.7			160	m	1100					
1050 - 1100	16.7	6	25	160	h (	1200					
1100 - 1150	71			299	pt	1200					
1150 - 1200	10.0	10.0 12 233 $1300$									
1200 - 1250	10.0										
1250 - 1300	8.3	11		267		1400 :					
1300 - 1350	10.0			233		1500					
1350 - 1400	7.1	12	43	299							
1400 - 1450	6.3	•••		330		1600					
1450 - 1500	4.2	20		444		1700					
1500 - 1550	4.5	21		416	1						
1550 - 1600	5.0	21		388	1	1800					
1600 - 1650	5.0	10	54	388		1900					
1650 - 1700	6.3	10	54	330		-					
1700 - 1750	7.1	15		299		2000					
1750 - 1800	6.3	15		330		2100					
' Bearing capacity result bearing pressure und	lts stated above have er small structures. M	been inferred 1 J Stockwell	from Fig 2 – The results (	Determination of allowable are relative to the ground			Inferred Bearing Capacity (50mm Intervals)				
conditions at the time	of test and will be h	eavily influenc	ed if significa	int gravel fraction is present.		2200 -	Inferred Bearing Capacity (300mm intervals)				
The inferred values sh	hould be used conser	vatively. IANZ	endorsemen	t does not apply to these values.		2300					
NZS 3604:2011, Secti	on 3.3.7.1 (b) states t	hat the ultima	te bearing cap	pacity of the foundation shall be							
assumed to be not less	s than 300 kPa if the th of the widest footi	number of blo ng helow the u	ws per 100m nderside of t	m exceeds 5 down to a depth he proposed footing and 3 at							
greater depths.	oj ine wittest joott	ng below the u	naersiae of a	ne proposeu jooung unu 5 ui							
F	IELD LOG: NZ	Z Geotechr	nical Socie	ety Guidelines 2005 (Not	IANZ Ac	credit	ited); Lot 271 - See Page 127 for location plan				
Depth (mm)	Description										
0 to 100	Topsoil & veg	etation (org	anic matte	er).							
100 to 1400	Grey / brown size 37.5mm; S	Gravelly SA Sand, fine to	AND with to coarse; S	trace of / minor silt. Moist. Silt, non-plastic.	. Tightly p	oacked	d. Gravel, subrounded to rounded, maximum particle				
1400 to 1450 *	Light grey SA	ND with tra	ace of / min	nor silt. Moist. Tightly pac	ked. Sand	l, fine	to coarse; Silt, non-plastic.				
* NZS 3604:2011, S	Section 3.3.6 requ	ires a minin	num 50mm	diameter auger hole to be co	ompleted t	to the a	depth of each scala penetrometer probe. Unable to complete past the				
depth indicated.											
Note:			4- 41-				Commente and Red Rich Commente and the last of the last				
<ul> <li>The result</li> <li>This report</li> </ul>	ts stated above a rt may not be re	re specific produced e	to the app xcept in fi	proximate test locations as full.	s recorded	ı. CTS	s accepts no ttability for any extrapolated use of this data.				
Fested By: k	K. Hipkins, C.	Pearson,	T. Shaw	v & C. Fisher Dat	e:	4 t	to 23-May-22				

Checked By:

emplus



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Page 39 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS



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**Tested By:** K. Hipkins, C. Pearson, T. Shaw & C. Fisher

**Checked By:** 

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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

Date:

4 to 23-May-22

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Page 40 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros	s, <u>stephenc</u>	averos.	<u>co.nz</u>		Attention:	S. Cornwall
Job Descripti	on: Wooi	ing Tree Su	bdivisio	n, Cromwell			
	001	I A DENET	DOMES	ED (N/76 4403 1000 T	(5.2). 1 (252	D 107 ( )	·····
	SCA	LA PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 2/3 – S	ee Page 127 for locat	tion plan
Depth	Penetration	1 100	ws /	Rearing Canacity <sup>1</sup>			
(mm)	(mm/blow)		mm	(kPa)			
0 - 50	25.0			119		Interred Bearing	g Capacity (kPa)
50 - 100	25.0	4		119	0	50 100 150 200	250 300 350 400 450 500
100 - 150	25.0	4	15	119	0		
150 - 200	25.0		15	119	100		
200 - 250	16.7	7		160	100		
250 - 300	12.5			198	200		
350 - 350	5.0	13		388	300		
400 - 450	4.2			444			
450 - 500	4.2	24	49	444	400		
500 - 550	10.0	12		233	500		
550 - 600	7.1	12		299			
600 - 650	8.3	12		267	000		
650 - 700	8.3			267	700		
700 - 750	12.5	10	32	198	800		
800 - 850	8.3 8.3			207			
850 - 900	12.5	10		198	900		
900 - 950	10.0			233	1000		
950 - 1000	12.5	9		198	Ш .		
1000 - 1050	8.3	10	21	267	<u>E</u> <sup>1100</sup>		
1050 - 1100	12.5	10	21	198	<b>4</b> 1200	┊└╴┢┯┯┿┛╎╴	
1100 - 1150	50.0	2		68	1200 E		
1150 - 1200	50.0			68	<b>H</b> 1300		
1200 - 1250	25.0	3		68	1400		
1300 - 1350	50.0			68	1500		
1350 - 1400	25.0	3	9	119	1000		
1400 - 1450	25.0	2		119	1600		
1450 - 1500	50.0	3		68	1700		
1500 - 1550	25.0	4		119			7
1550 - 1600	25.0			119	1800		
1600 - 1650	10.0	10	23	233	1900		
	10.0			233	2000		
1750 - 1800	10.0	9		233	2000		
<sup>1</sup> Bearing capacity res	ults stated above ha	ve been inferred j	from Fig 2 –	Determination of allowable	2100	Informed Rearing	Canacity (50mm Intervale)
bearing pressure un conditions at the tin	der small structures, ie of test and will be	, M.J. Stockwell. heavily influence	The results a ed if significa	are relative to the ground ant gravel fraction is present.	2200	Interred Dearing	
The inferred values	should be used cons	servatively. IANZ	endorsemen	t does not apply to these values.		-Inferred Bearing	Capacity (300mm intervals)
NZS 3604:2011, Sec	tion 3.3.7.1 (b) state	s that the ultimat	e bearing cap	pacity of the foundation shall be	2300		
assumed to be not le equal to twice the w	ess than 300 kPa if this is the start of the start for start for the start for the start for the start for the sta	he number of blo ating below the "	ws per 100mi nderside of 4	m exceeds 5 down to a depth he proposed footing and 3 at			
greater depths.				r. posen jooning una 5 at			
	FIELD LOG: N	NZ Geotechn	ical Socie	ety Guidelines 2005 (Not l	ANZ Accredited);	Lot 273 - See Page 1	27 for location plan
Depth (mm)	Description		•				
0 to 100	Topsoil & vege	tation (organ	ic matter)	Tielde en de la Carala i al		a.a	
100 to 1000 *	Silt, non-plastic	ndy GRAVE c.	L. Moist.	lightly packed. Gravel, sul	bangular to subroun	ded, maximum partic	le size 53.0mm; Sand, fine to coarse;
* NZS 3604:2011,	Section 3.3.6 req	quires a minin	um 50mm	diameter auger hole to be co	ompleted to the depth	of each scala penetrom	eter probe. Unable to complete past the
ueptn indicated. Note:							
• The resu	lts stated above	e are specific	to the apr	proximate test locations as	recorded. CTS acce	epts no liability for an	w extrapolated use of this data.
• This rep	ort may not be i	reproduced e.	xcept in fi	ull.			· · · · · · · · · · · · · · · · · · ·
		- C D	- · ·		4		
lested By:	K. Hipkins, (	C. Pearson,	T. Shaw	v & C. Fisher Dat	e: 4 to 23	-May-22	
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Unecked By:	emplu	10				, cl	CREDITES
						P	0



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Page 41 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Ve	eros, <mark>st</mark>	ephenc(	averos.	<u>co.nz</u>		Attention:	S. Cornwall		
Job Description	on: W	'ooing '	<u>Tree S</u> u	bdivisio	n, Cromwell					
			DELTE	DOLOG			D 10-0 1	<u></u>		
	5	SCALA	PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 274 – Se	ee Page 127 for locat	tion plan		
Depth	Penetra	tion	Blo	ws /	Inferred Allowable					
(mm)	(mm/bl	low)	100	300	Bearing Capacity					
0.50		<u>,                                     </u>	mm	mm	(кра)		Inferred Bearing	(Capacity (kPa)		
0 - 50	50.0	)	3		68		8	,		
50 - 100	25.0	)			119	0	100 200	300 400 500 600		
100 - 150	25.0	) 7	5	14	119	0				
200 250	16.7	7			160	100				
200 - 250	16.7	7	6		160	100				
300 - 350	25.0	)			110	200				
350 - 400	50.0	)	3		68	300				
400 - 450	16.7	7			160					
450 - 500	10.7	)	8	20	233	400				
500 - 550	16.7	7			160	500				
550 - 600	8.3		9		267			<b>,</b>		
600 - 650 12.5 10 198 600										
650 - 700	8.3		10		267	700				
700 - 750	12.5	5	10	20	198	/00				
750 - 800	8.3		10	38	267	800				
800 - 850	7.1		10		299					
850 - 900	4.5		18		416	900				
900 - 950	3.1		20		548	1000				
950 - 1000	12.5	5	20		198	E B				
1000 - 1050	8.3		14	16	267	<u>E</u> 1100				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$										
1100 - 1150	$\frac{1200}{10}$									
1150 - 1200	8.3		12		267	A 1300				
1200 - 1250	25.0	)	-		119	1400				
1250 - 1300	16.7	7	5		160	1400				
1300 - 1350	16.7	7	-	21	160	1500				
1350 - 1400	12.5	5	/	21	198	1.000				
1400 - 1450	12.5	5	0		198	1600				
1450 - 1500	10.0	)	9		233	1700				
1500 - 1550	7.1		10		299		L			
1550 - 1600	10.0	)	12		233	1800				
1600 - 1650	16.7	7	6	24	160	1900				
1650 - 1700	16.7	7	0	24	160					
1700 - 1750	25.0	)	6		119	2000				
1750 - 1800	12.5	5	U		198	2100				
<sup>1</sup> Bearing capacity res	sults stated abov	ve have bee	en inferred j	from Fig 2 –	Determination of allowable	2100	Inferred Bearing	Capacity (50mm Intervals)		
conditions at the time	uer small struct ne of test and wi	ures, M.J. ill be heav	. Stockwell. ily influence	ne results a d if significa	ire relative to the ground int gravel fraction is present.	2200	Informed Boaring	Canacity (300mm intervale)		
The inferred values	should be used	conservat	ively. IANZ	endorsemen	t does not apply to these values.	2200	interreo Bearing (	Capacity (SUOIIIII IIIter VAIS)		
NZS 3604-2011 Sec	tion 3 3 7 1 (b)	states that	the ultimat	e hearing ca	nacity of the foundation shall be	2300				
assumed to be not le	ess than 300 kPa	a if the nu	mber of blo	ws per 100m	m exceeds 5 down to a depth					
equal to twice the w	idth of the wide.	est footing	below the u	nderside of tl	the proposed footing and $\overline{3}$ at					
greater depths.	FIFLDLO	C·NZ (	Seatechn	ical Socio	ty Guidelines 2005 (Not I	ANZ Accredited)	Lot 274 - See Page 1	27 for location plan		
Denth (mm)	Description	n	scotterill	icai Socie	ty Guidelines 2003 (NOU I	and Accidented);	101 214 - See I age I			
0 to 150	Topcoil &	 Vegetetic	n (organ	ic matter)						
U U I JU     TOPSUN & Vegetation (Organic matter).     Brown Silty Sondy CDAVEL Dry Losso Croud angular to submounded maximum nauticle size 52 0mm. Sond fine to accurate										
150 to 1500 *	Silt non-ph	y Sandy astic	GKAVE	L. Dry. Lo	oose. Gravel, angular to sub	rounded, maximum	particle size 53.0mm	; Sanu, fine to coarse;		
* NZS 3604:2011	Section 3.3 /	asuc. 6 require	s a minin	um 50mm	diameter auger hole to be co	mpleted to the depth	of each scala nenetrom	eter probe. Upable to complete past the		
depth indicated.		. i cyun c	~		and the second second second second					
Note:										
• The resu	ults stated ab	hove are	specific	to the app	proximate test locations as	recorded. CTS acco	ents no liability for an	w extrapolated use of this data		
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- Inis repo	on may not	Je repri	oanceu e.	xcept in fl	****					
Tested Bv:	K. Hipkin	is, C. P	earson.	T. Shaw	& C. Fisher Date	e: 4 to 23	-May-22			
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Reference No: 22/1550

Date: 26 May 2022

# <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

**Central Testing Services** 

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Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

Checked By:

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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing



#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Ver	os, <u>stephenc</u>	averos.	co.nz		Attention:	S. Cornwa	1
Job Descriptio	n: Wo	oing Tree Su	bdivisio	n, Cromwell				
	60	ALA DENET	ROMET	FR (N7S 4402.1000 Tast	652). Lat 270	See Page 127 for loss	ion nlan	
	50	Blo	ws /	Inferred Allowable	0.3.2, Lot $279 =$	See 1 age 127 101 10cat	tion pian	
Depth	Penetrati	on 100	300	Bearing Capacity <sup>1</sup>				
(mm)	(IIIII) DIO	mm	mm	(kPa)			c * 11	
0 - 50	50.0	4		68		Interred Bearing	Сарасну (кі	<sup>r</sup> a)
50 - 100	16.7		-	160	0	50 100 150	200 250	300 350 400
100 - 150	83	10	24	198	0			
200 - 250	12.5	10	-	198	100			
250 - 300	8.3	10		267	200			
300 - 350	7.1	15		299	200			
350 - 400	6.3	10	-	330	300			
400 - 450	7.1	15	46	299	400			
500 - 550	7.1			299	500			
550 - 600	5.6	16		359	500			
600 - 650	8.3	16		267	600			
650 - 700	5.0	10		388	700			
700 - 750	8.3	12	41	267	800			
/50 - 800	8.3		1	267				-
850 - 900	7.1	13		299	900			
900 - 950	8.3	11		267	1000			
950 - 1000	10.0	- 11		233	E 1100			
1000 - 1050	10.0	9	26	233	<u>u</u>			
1050 - 1100	12.5	-		198	1200			
1100 - 1150	16.7	6		160	<b>q</b> 1300			
1200 - 1200	16.7			160				
1250 - 1250	10.7	8		233	1400			
1300 - 1350	12.5	0	20	198	1500		<b>L</b>	
1350 - 1400	10.0	9	28	233	1600			
1400 - 1450	10.0	11		233	1000			
1450 - 1500	8.3			267	1700			
1500 - 1550	8.3	11		267	1800			
1550 - 1600	83		1	255	1000			
1650 - 1700	10.0	11	31	233	1900			
1700 - 1750	12.5	0		198	2000			
1750 - 1800	10.0	9		233	2100			
<sup>1</sup> Bearing capacity resu bearing pressure und	lts stated above l er small structur	have been inferred j es. M.I. Stockwell	from Fig 2 – The results o	Determination of allowable are relative to the ground	2200	Inferred Bearing C	Capacity (50mm Int	ervals)
conditions at the time	of test and will	be heavily influence	ed if significa	int gravel fraction is present.	2200	Inferred Bearing O	Capacity (300mm in	tervals)
The inferred values s	hould be used co	nservatively. IANZ	endorsemen	t does not apply to these values.	2300			
NZS 3604:2011, Secti	ion 3.3.7.1 (b) sta	tes that the ultimat	e bearing cap	pacity of the foundation shall be				
equal to twice the wia	s than 500 kr a lj lth of the widest j	footing below the u	nderside of th	he proposed footing and 3 at				
greater depths.	IFIDIOC	NZ Contonhy	ical Socia	ty Guidelines 2005 (Not I	ANZ Appredited	. Lot 270 Soc Dage 1	27 for location	nlan
Depth (mm)	Descriptio	n	iicai Socie	ty Guidennes 2005 (1901 I	And Accreaned)	, 101 277 - See rage 1	2/10/10Cation	ртан
0 to 50	Topsoil &	 vegetation (org	anic matte	er).				
50 to 1200	Grey / brow	wn Gravelly SA	ND with	minor silt. Moist. Tightly p	acked. Gravel, sub	angular to subrounded	, maximum par	icle size 63.0mm;
1200 to 1400 *	Light grey	SAND with tre	non-plasu	u. 10r silt Maist Tightly nacl	ed Sand fine to c	oarse: Silt non-plastic		
* NZS 3604:2011.	Section 3.3.6 r	SAND with tra	100 017 mm	diameter auger hole to be co	mnleted to the dent	h of each scala nenetrom	eter probe. Unab	le to complete past the
depth indicated.		equites a minim						complete past the
Note:								
<ul> <li>The result</li> <li>This report</li> </ul>	ts stated abo rt mav not bo	ve are specific e reproduced e	to the app xcept in fi	proximate test locations as ull.	recorded. CTS ac	cepts no liability for an	y extrapolated	use of this data.
Tested Bv:	K. Hinkins	C. Pearson	T. Shaw	& C. Fisher Date	2: 4 to 2	23-May-22		
		//	Shaw				REDIN	
Checked Bv•	limb	lio				ACC	ED	
Checked By.	10119-00							Test results indicated as not accredited are outside the scope of the



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laboratory's accreditation

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Reference No: 22/1550

as not accredited are outside the scope of the laboratory's

accreditation

TESTING LABORATO

Date: 26 May 2022

<b>Client Details:</b>	Veros,	tephenc	averos.	co.nz			Attention: S. C	Cornwall
Job Description	n: Wooing	Tree Su	bdivisio	n, Cromwell				
		BENE		D 0170 4400 1000 -				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 28	0 – See Page 127 for location pla	in
Depth	Penetration	BI0	WS /	Interred Allowable Bearing Consolty 1				
(mm)	(mm/blow)	100	300	(kPa)				
0 - 50	25.0	min	min	110			Inferred Bearing Cana	city (kPa)
50 - 100	25.0	4		119	1			v N /
100 - 150	16.7			160	1	0	<b>50 100 150 200</b>	250 300 350 400
150 - 200	8.3	9	23	267		0		
200 - 250	12.5	10		198		100		
250 - 300	8.3	10		267		200		
300 - 350	8.3	15		267	4	200		
350 - 400	5.6		-	359	-	300		
400 - 450	8.3	11	34	267	-	400		
450 - 500	10.0			198	-			
550 - 600	12.5	8		198	-	500 :		
600 - 650	12.5		1	198	1	600		
<u>650 - 7</u> 00	12.5	8		198	]	700		
700 - 750	16.7	6	21	160	1			
750 - 800	16.7	v	<u><u></u></u>	160	4	800		
800 - 850	16.7	7		160	-	900		
850 - 900	12.5			198	-	1000		
900 - 950	16.7	6		160	(u	1000		
<u>930 - 1000</u> 1000 - 1050	25.0		-	119	m	1100		
1050 - 1100	16.7	5	16	160	h (	1200		
1100 - 1150	25.0	_		119	ept	1200		
1150 - 1200	16.7	5		160	D	1300		
1200 - 1250	12.5	0		198		1400		
1250 - 1300	10.0	9	1	233	4			
1300 - 1350	10.0	13	37	233	4	1500		
1350 - 1400	6.3			330	4	1600		
1400 - 1450	5.6	15		359	-	1700		
1450 - 1500	ð.3 10 0	}		20/	-	T\00 ;		
1550 - 1600	8.3	11		267	1	1800		
1600 - 1650	10.0		1	233	1	1900		
<u> 165</u> 0 - 1700	12.5	9	32	198	]			
1700 - 1750	10.0	12	]	233	]	2000		
1750 - 1800	7.1	12		299	4	2100		
' Bearing capacity result bearing pressure und	lts stated above have b er small structures. M.	een inferred j J. Stockwell	from Fig 2 – The results a	Determination of allowable are relative to the ground	1	2200	Inferred Bearing Capacity	(50mm Intervals)
conditions at the time	of test and will be hea	vily influence	ed if significa	int gravel fraction is present.	1	2200		(300mm intervals)
The inferred values sl	nould be used conserve	uively. IANZ	endorsemen	t aoes not apply to these values.		2300		
NZS 3604:2011, Section	on 3.3.7.1 (b) states the	at the ultimat	te bearing cap	pacity of the foundation shall be mexceeds 5 down to a doubt				
equal to twice the wid	th of the widest footing	g below the u	nderside of th	he proposed footing and 3 at				
greater depths.	FIDIOC. NZ	Contach	ical Sani-	ty Cuidalinas 2005 (N-+)	LANZ A	oorod:4	ad). L at 280 San Dage 127 f	location plan
Denth (mm)	Description	Geotechn	iicai Socie	ty Guidennes 2005 (Not	IANZ A	ccrean	icu); Lot 200 - See rage 12/ for	location plan
0 to 200	Tonsoil & veget	ation (org	anic matte	۲).				
0 to 200 1 opsoil & vegetation (organic matter).								
200 to 1400 Sand, fine to coarse; Silt, non-plastic.								
1400 to 1500 *	Light grey SAN	D with tra	ce of / mir	nor silt. Moist. Tightly pac	ked. San	d, fine	to coarse; Silt, non-plastic.	
* NZS 3604:2011, Section 3.3.6 requires a minimum 50mm diameter auger hole to be completed to the depth of each scala penetrometer probe. Unable to complete past the								
depth indicated.								
Note:								
• The result	ts stated above ar	e specific	to the app	proximate test locations as	recorde	d. CTS	accepts no liability for any extra	polated use of this data.
This report	rt may not be rep	roduced e	xcept in fi	<i>ull.</i>				
Tested By: k	K. Hinkins. C	Pearson	T. Shaw	& C. Fisher Dat	e:	4 t	o 23-May-22	
restruty. r		. cai sully	1. Snaw	a company Dat	~•	71	5 -5 maj 22	
Checked Rv•	emplin						CCREDITE	6
CHURCH DY:	manul						٣	- Test results indicated



#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 45 of 127 Pages

Reference No: 22/1550

Test results indicated as not accredited are outside the scope of the

laboratory's accreditation

FS. TING LABORATO

Date: 26 May 2022

<b>Client Details:</b>	Veros,	tephenc	averos.	co.nz	Attention:	S. Cornwall				
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell						
	SCAT -	DENIET	DOMET	ED (N78 4403.1000 T4	6 5 7), I at 201	Soo Dago 127 for 1	ion nlan			
	SCAL	A FENEI Blo	KONE I	Inferred Allowable	0.5.2); Lot 281	- See rage 12/ lor local	non pran			
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>						
(mm)	(mm/blow)	mm	mm	(kPa)						
0 - 50	25.0	4		119		Interred Bearing	(Capacity (RPa)			
50 - 100	25.0	4		119	0	100 200	300 400 500			
100 - 150	16.7	11	35	160	0 †	· · · · · · · · · · · · · · · · · · ·				
150 - 200	6.3		_	330	100					
200 - 250	0.5 4 2	20		<u> </u>	100					
300 - 350	8.3			267	200					
350 - 400	5.0	16		388	300					
400 - 450	6.3	20	53	330	400					
450 - 500	4.2	20		444	400					
500 - 550	6.3	17		330	500					
550 - 600	5.0			359	600					
650 - 700	6.3	16		330						
700 - 750	6.3	12		330	700					
750 - 800	10.0	13	40	233	800					
800 - 850	12.5	11		198	900					
850 - 900	7.1	••		299						
900 - 950	6.3	18		330	Î 1000					
<u>950 - 1000</u> 1000 - 1050	5.0			388	E 1100					
1050 - 1100	12.5	8	31	198	<b>u</b> 1200					
1100 - 1150	16.7	~		160	ept		_			
1150 - 1200	25.0	$\frac{100}{25.0}$ 5 119 $\stackrel{\circ}{\frown}$ 1300								
1200 - 1250	25.0	7		119	1400					
1250 - 1300	10.0	-		233	1500					
1300 - 1350 1350 - 1400	/.1	13	32	299	1500					
1400 - 1450	7.1		_	299	1600					
1450 - 1500	10.0	12		233	1700					
1500 - 1550	8.3	10		267	1800					
1550 - 1600	12.5	10		198	1800					
1600 - 1650	12.5	8	29	198	1900					
1700 - 1750	10.0		_	233	2000					
1750 - 1800	8.3	11		267	21.00					
<sup>1</sup> Bearing capacity resu	Its stated above have b	een inferred	from Fig 2 –	Determination of allowable	2100	Inferred Bearing	Capacity (50mm Intervals)			
conditions at the time	er small structures, M. e of test and will be hea	J. Stockwell. vily influenc	ed if significe	int gravel fraction is present.	2200	Inferred Bearing	Capacity (300mm intervals)			
The inferred values s	hould be used conserve	tively. IANZ	endorsemen	t does not apply to these values.	2300					
NZS 3604:2011, Sector assumed to be not les equal to twice the wide	ion 3.3.7.1 (b) states the is than 300 kPa if the n lth of the widest footing	ut the ultimat umber of blo 3 below the u	te bearing cap ws per 100m nderside of t	pacity of the foundation shall be m exceeds 5 down to a depth he proposed footing and 3 at						
greater depths.	IELD LOC · NZ	Geotechr	ical Socia	ety Guidelines 2005 (Not 1	ANZ Accredit	ed): Lot 281 - See Page 1	27 for location plan			
Depth (mm)	Description	Sesterin	Soci			, Lot Lot Set rage 1	pini			
0 to 150	Topsoil & veget	ation (org	anic matte	er).						
150 to 1200	Grey / brown G	ravelly SA	AND with	minor silt. Moist. Tightly p	acked. Gravel, s	subangular to subrounded	, maximum particle size 53.0mm;			
1200 to 1300 *	Light grev SAN	arse; Silt, D with trs	non-plasti ace of / mi	e. nor silt. Moist. Tightly nacl	ked. Sand. fine f	o coarse: Silt. non-nlastic.				
* NZS 3604:2011, Section 3.3.6 requires a minimum 50mm diameter auger hole to be completed to the depth of each scala penetrometer probe. Unable to complete past the										
depth indicated.	-									
Note: • The resul • This repo	ts stated above ar rt may not be rep	e specific roduced e	to the app xcept in f	proximate test locations as full.	recorded. CTS	accepts no liability for an	y extrapolated use of this data.			
Tested By: I	K. Hipkins, C.	Pearson,	T. Shaw	v & C. Fisher Date	e: 4 to	o 23-May-22				
Checked By:	emplus					ACC	REDITED			
check by.	,						Test results indicated			

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#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 46 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Vero	s, <u>stephenc</u>	averos.	co.nz			Attention: S. Cornwall
Job Description	on: Woo	ing Tree Su	bdivisio	n, Cromwell			
	0.0		DOVER	ED (N/76) 4462 1000 T	( = )	T ( AA	
		ALA PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 28	282 – See Page 127 for location plan
Depth	Equivalen	t Blo	WS /	Interred Allowable Bearing Connected 1			
(mm)	renetratio	n 100	300	Bearing Capacity			
0.50	100.0	) mm	mm	(KI a)			
0 - 50	100.0	1		30	-		Inferred Bearing Capacity (kPa)
<u> </u>	50.0		1	50			
150 200	50.0	2	8	68	-	0.5	0 50 100 150 200 250 300 350
200 - 250	25.0			119			
250 - 300	167	- 5		160		100	0
300 - 350	25.0			119		200	
350 - 400	25.0	4		119		200	
400 - 450	16.7	-	10	160		300	0
450 - 500	25.0	5	18	119		400	0
500 - 550	10.0	0		233			
550 - 600	12.5	9		198		500	0
600 - 650	16.7	5		160		600	
650 - 700	25.0	5		119			
700 - 750	25.0	4	15	119		700	0
750 - 800	25.0	4	15	119		800	0
800 - 850	16.7	6		160			
850 - 900	16.7	0		160		900	0 <b></b>
900 - 950	16.7	4		160		1000	
950 - 1000	50.0	-		68	u)	1000	
1000 - 1050	16.7	5	14	160	mi	1100	0
1050 - 1100	25.0	5		119	h (	1200	
1100 - 1150	25.0	5		119	ept	1200	
1150 - 1200	16.7	-		160	D	1300	0
1200 - 1250	10.0	11		233		1400	
1250 - 1300	8.3		-	267	_	1400	
1300 - 1350	8.3	13	32	267		1500	
1350 - 1400	7.1			299		1.000	
1400 - 1450	10.0	8		233	-	1000	
1450 - 1500	10.7		-	100	-	1700	0
1500 - 1550	12.5	7		190		1900	
1600 1650	10.7			100		1800	
1650 - 1700	12.5	8	25	198		1900	0
1700 - 1750	10.0		-	233	-	2000	
1750 - 1800	10.0	10		233		2000	
1800 - 1850	8.3	-	-	267		2100	0
<sup>1</sup> Bearing capacity res	sults stated above ha	we been inferred	from Fig 2 –	Determination of allowable		2200	Inferred Bearing Capacity (50mm Intervals)
bearing pressure un	ider small structure	s, M.J. Stockwell.	The results a	are relative to the ground		2200	Inferred Bearing Capacity (300mm intervals)
The inferred values	should be used con	servatively. IANZ	ea ij signijica ' endorsemen	t does not apply to these values.		2300	0
N/70 2404 2011 0							
NZS 3604:2011, Sec assumed to be not la	ess than 300 kPa if t	es that the ultimat the number of blo	e bearing cap ws per 100mi	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the w	idth of the widest fo	ooting below the u	nderside of th	he proposed footing and $\hat{3}$ at			
greater depths.	FIFLDLOC	NZ Contoobr	ical Socia	ty Guidelines 2005 (Not 1	  AN7 -	Accredit	dited): Lat 282 - See Page 127 for location plan
Denth (mm)	Description		ical Soult			seer cul	uncuj, 101 202 - 500 1 age 127 101 location plan
0 to 150	Tonsoil & you	etation (organ	ic matter)				
0 10 150	Grev / brown	Cravelly SAN	D with mi	nor silt Moist Tightly noo	ked C	ravel en	subangular to subrounded maximum particle size 37 5mm.
150 to 1500 *	Sand. fine to c	oarse: Silt. no	n-plastic.	nor site worst. Fightly pac	Kcu. G	avei, su	subangular to subrounded, maximum particle size 57.5mm,
* NZS 3604:2011,	, Section 3.3.6 re	quires a minin	um 50mm	diameter auger hole to be co	omplete	d to the a	he depth of each scala penetrometer probe. Unable to complete past the
aepth indicated.							
Note:	ite stated about	a ava snasiG-	to the area	wavimata tast lacations	Pagend	ad CTC	TS accounts no lighility for any orthanolated use of this det-
Ine resu	uis statea abov	e are specific	w the app	oroximate test locations as	record	ea. CIS	15 accepts no hadnity for any extrapolatea use of this data.
• Inis rep	ort may not be	reproduced e	xcept in fi	ин.			
Tested By:	K. Hinkins	C. Pearson	T. Shaw	& C. Fisher Dat	e:	4 f	4 to 23-May-22
- corea Dy .			1. Shaw	Dati			
Checked By	und M.	0					CCREDITEN
CHECKEU DY:	rente						
							1 est results indicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing "Central Testing Services operates as a trading trust through Central Testing Services Limited as the sole trustee."

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 47 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc(	<u>averos.</u>	<u>co.nz</u>		Attention:	S. Cornwall	
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell				
		DENTE	DOLTE	D 0170 4400 1000	(			
	SCALA	A PENET	ROMETI	ER (NZS 4402:1988, Test	<u>6.5.2); Lot 283 – S</u>	See Page 127 for locat	on plan	
Depth	Penetration	Blo	ws /	Inferred Allowable				
(mm)	(mm/blow)	100	300	bearing Capacity				
0 50	50.0	mm	mm	(KI a)				
<u> </u>	50.0	4		160		Informed Desting	Canadity (IrDa)	
100 - 150	12.5			198		Interred bearing v	Lapacity (KF a)	
150 - 200	16.7	7	17	160	0	50 100 150	200 250 300 350 400	
200 - 250	16.7			160	0			
250 - 300	16.7	6		160	100			
300 - 350	16.7	6		160	-			
350 - 400	16.7	U		160	200			
400 - 450	12.5	7	20	198	300			
450 - 500	16.7	,		160	400			
500 - 550	12.5	7		198				
550 - 600	16./			100	500			
650 - 700	12.5	6		119	600	╶╶┊╴╶┊┍╾┼╝┗╸		
700 - 750	10.0			233	700			
750 - 800	5.0	15	30	388	/00			
800 - 850	10.0			233	800			
850 - 900	12.5	9		198	900			
900 - 950	25.0	5		119	1000			
950 - 1000	16.7	3		160	Î 1000			
1000 - 1050	50.0	3	10	68	1100			
1050 - 1100	25.0	5	10	119	ų 1200			
1100 - 1150	50.0	2		68	ebt			
1150 - 1200	50.0	_		68	<b>A</b> 1300			
1200 - 1250	25.0	3		119	1400			
1250 - 1300	50.0			68				
1350 1400	25.0	5	15	119	1500			
1400 - 1450	16.7			160	1600			
1450 - 1500	12.5	7		198	1700			
1500 - 1550	12.5			198	1,00			
1550 - 1600	12.5	8		198	1800			
1600 - 1650	16.7	6	10	160	1900			
1650 - 1700	16.7	0	19	160	2000			
1700 - 1750	25.0	5		119	2000			
1750 - 1800	16.7			160	2100	Informed Beauing Co	n a situ (50mm Intervals)	
1800 - 1850	16.7	- 	- Guam Eia 2	160 Determination of allowable	2200	Interreu Bearing Ca		
bearing pressure und	ler small structures, M.	J. Stockwell.	The results a	re relative to the ground		Inferred Bearing Ca	pacity (300mm intervals)	
conditions at the time	e of test and will be hea	vily influence tively IANZ	ed if significa	nt gravel fraction is present.	2300	•		
The injerrea values s	nouiu de useu conserva	uively. IANZ	enuorsemen	i uoes noi uppiy io inese values.				
NZS 3604:2011, Sector assumed to be not les	ion 3.3.7.1 (b) states the s than 300 kPa if the n	t the ultimat umber of blo	e bearing cap ws ner 100m	pacity of the foundation shall be mexceeds 5 down to a depth				
equal to twice the wid	th of the widest footing	g below the u	nderside of th	ne proposed footing and 3 at				
greater depths.	IFI DI OC. NZ	Contrak	ical Cast-	ty Cuidelines 2005 (N-+ 1	ANZ Aggradital).	Lat 292 Eas Dag- 14	7 for location plan	
F Denth (mm)	Description	Geotechn	ical Socie	ty Guidennes 2005 (1901 I	ANZ Accredited);	Lut 205 - See rage 12	a for location plan	
0 to 100	Tonsoil & vagatati	ion (organ	ic matter)					
100 to 1400 * Grey / brown SAND with trace of / minor silt Moist Tightly nacked / loose Sand fine to coarse. Silt non-plastic								
100 to 1400 *	Grey / Drown SAN	with tr	ace of / mi	diamatan augar hala ta h	keu / 100se. Sand, fil	ne to coarse; Silt, non-j	nasuc. tan proba Unable to commistet	
depth indicated.	эссион э.э.ө гедин	сэ а шппп	am somm	unameter auger noie to de co	mpicica to the aepth	oi cacii scaia penetrome	ter probe. Chable to complete past	
Note:								
• The resul	ts stated above ar	e specific	to the ann	vroximate test locations as	recorded. CTS acco	epts no liability for an	v extrapolated use of this data.	
This reno	rt may not be ren	roduced e	xcept in fi	ull.		-r.s. no moning for un	, aporatea ase oj tans atuta	
	,							
Tested By: I	K. Hipkins, C. l	Pearson,	T. Shaw	& C. Fisher Date	e: 4 to 23	3-May-22		
	//							
Checked By:	lmplus						REDITEN	



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Page 48 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc(	averos.	<u>20.nz</u>		Attention:	S. Cornwall	
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell				
	~~ -		DOLOG	B 0/20 / /02 / 000 -		D 447.0 1		
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	: 6.5.2); Lot 284 – Se	ee Page 127 for locat	tion plan	
Depth	Penetration	Blo	ws /	Inferred Allowable				
(mm)	(mm/blow)	100	300	(kPa)				
0 50	50.0	mm	mm	(KI a)		Informed Decrima	Canadity (1.Da)	
50 - 100	50.0	2		68		Interred Bearing	Сарасну (кга)	
100 - 150	16.7	_		160	0	100 200	300 400 500 600	
150 - 200	12.5	7	26	198	0	· · · · · · · · · · · · · · · · · · ·		
200 - 250	8.3	17		267	100			
250 - 300	4.5	17		416				
300 - 350	7.1	17		299	200			
350 - 400	5.0	17		388	300			
400 - 450	3.6	25	58	497	100			
450 - 500	4.5		-	416	400			
550 - 550	6.3	16		330	500			
600 - 650	6.3			330	600			
650 - 700	7.1	15		299				
700 - 750	5.0	17	1	388	700			
750 - 800	10.0	15	44	233	800			
800 - 850	7.1	14		299	000			
850 - 900	7.1	17		299	900			
900 - 950	10.0	8		233	<b>a</b> <sup>1000</sup>			
950 - 1000	16.7			160	8 1100			
1000 - 1050	12.5	9	24	198	1 ()			
1050 - 1100	10.0			233	E 1200			
1150 - 1200	12.3	7		190	a 1300			
1200 - 1250	12.5			198	1400			
1250 - 1300	10.0	9		233	1400			
1300 - 1350	12.5	10	25	198	1500			
1350 - 1400	8.3	10	35	267	1600			
1400 - 1450	7.1	16		299		1		
1450 - 1500	5.6	10		359	1700			
1500 - 1550	8.3	14		267	1800			
1550 - 1600	6.3		-	330	1000			
1600 - 1650	8.3	13	41	267	1900			
1050 - 1700	/.I 83			299	2000			
1750 - 1800	63	14		330	2100			
<sup>1</sup> Bearing capacity resu	lts stated above have b	een inferred j	from Fig 2 –	Determination of allowable		Inferred Bearing C	apacity (50mm Intervals)	
bearing pressure und conditions at the time	er small structures, M. of test and will be bee	J. Stockwell.	The results and if signification of the second s	re relative to the ground	2200		apacity (300mm intervals)	
The inferred values s	hould be used conserv	atively. IANZ	endorsemen	t does not apply to these values.	2300			
NZS 3604:2011, Secti assumed to be not les. eaual to twice the wid	on 3.3.7.1 (b) states th s than 300 kPa if the n Ith of the widest footin	at the ultimat umber of blo o below the u	e bearing cap ws per 100m nderside of t	pacity of the foundation shall be m exceeds 5 down to a depth ne proposed footing and 3 at				
greater depths.								
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not 1	IANZ Accredited);	Lot 284 - See Page 1	27 for location plan	
0 to 100	Topsoil & more	ation (an-	onic matt	)				
0 10 100	ropson & veget	rovolle CA	ND with	T). minar silt Maist Tisktler	asked Crevel subse	aular to enhumed ad	maximum nartiala siza (2 Amm.	
100 to 1300         Grey / brown Gravely SAND with minor silt. Moist. Lightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm;           Sand, fine to coarse; Silt, non-plastic.								
1300 to 1430 " Light grey SAND with trace of / minor sitt. Moist. Lightly packed. Sand, fine to coarse; Silt, non-plastic. * NZS 3604-2011. Section 3.3.6 requires a minimum 50mm diameter ager hale to be completed to the denth of each scale non-trameter probe. Unable to complete part the								
" NZS 3004:2011, S depth indicated.	эесноп э.э.ө гедин	res a minin	um somm	unameter auger hole to be co	ompleted to the depth o	n each scala penetrom	eier prode. Unable to complete past the	
Note:								
• The result • This report	ts stated above an rt may not be rep	e specific roduced e	to the app xcept in fi	roximate test locations as ıll.	recorded. CTS acce	pts no liability for an	y extrapolated use of this data.	
Fested By: F	K. Hipkins, C.	Pearson.	T. Shaw	& C. Fisher Dat	e: 4 to 23-	-May-22		
						····	REDIT	
Checked By:	emplus					ACC	Test results indicated	



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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	@veros.	<u>co.nz</u>		Attention:	S. Cornwall
Job Description	n: Wooin	g Tree Su	bdivisio	n, Cromwell			
	0.011	A DENET	DOVER	ED (N/76 4402 1000 T		0 D 105 C 1	
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 285 -	- See Page 127 for locat	ion plan
Depth	Penetration	BI0	WS /	Interred Allowable Rearing Capacity <sup>1</sup>			
(mm)	(mm/blow)	100	300	(kPa)			
0 50	25.0	mm	mm	(RI a) 110		Informed Doowing	Capacity (IrDa)
<u> </u>	25.0	4		119		Interred Bearing	Capacity (kPa)
100 - 150	167			160	0	100 200 300	400 500 600 700
150 - 200	8.3	9	24	267	0 :	····	
200 - 250	10.0			233	100		
250 - 300	8.3	11		267	100		
300 - 350	7.1	12		299	200		
350 - 400	8.3	13		267	300		
400 - 450	10.0	15	59	233			
450 - 500	5.0	15	50	388	400		
500 - 550	3.3	30		523	500		
550 - 600	3.3	50		523			
600 - 650	3.6	29		497	600		
650 - 700	3.3		-	523	700		
700 - 750	2.6	32	82	622			
/50 - 800	5.8		1	471	800		
800 - 850	4.5	21		410	900		
850 - 900	3.0		-	388	1000		
900 - 930	3.0	28		497	â 1000		
1000 - 1050	4 2			497	Ē 1100 -		
1050 - 1100	6.3	20	66	330	<b>H</b> 1200		
1100 - 1150	5.6			359	ebt		
1150 - 1200	5.6	18		359	A 1300		
1200 - 1250	5.6			359	1400		
1250 - 1300	4.5	20		416	1400		
1300 - 1350	3.8	24	(5	471	1500		
1350 - 1400	4.5	24	05	416	1600		
1400 - 1450	4.2	21		444			
1450 - 1500	5.6	21		359	1700		
1500 - 1550	4.5	21		416	1800		
1550 - 1600	5.0	21	_	388			
1600 - 1650	5.0	19	61	388	1900		
1650 - 1700	5.6			359	2000		
1700 - 1750	3.8	21		471	-		
1/50 - 1800	0.3 Its stated above have	heen inferred	from Fig 2 _	<b>330</b> Determination of allowable	2100	Inferred Bearing Ca	apacity (50mm Intervals)
bearing pressure und	er small structures, M	J. Stockwell.	The results a	re relative to the ground	2200	Inferred Bearing C	anacity (300mm intervals)
conditions at the time	of test and will be he	avily influence atively IANZ	ed if significa ' endorsemen	nt gravel fraction is present. t does not apply to these values	2300		apacity (Soonini intervals)
NZS 3604:2011, Secti assumed to be not less equal to twice the wid constant denths	on 3.3.7.1 (b) states th s than 300 kPa if the th of the widest footin	nat the ultimat number of blo ng below the u	te bearing cap ws per 100m nderside of th	pacity of the foundation shall be n exceeds 5 down to a depth te proposed footing and 3 at			
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not l	ANZ Accredited	l); Lot 285 - See Page 1	27 for location plan
Depth (mm)	Description	· · · · · · · · · · · · · · · · · · ·					
0 to 150	Topsoil & vege	tation (org	anic matte	er).	asked Car 1	hanaulau (a amb 🥂 🦄	
150 to 1300	Grey / brown C Sand, fine to co	aravelly SA	non-plasti	mmor sut. woist. Fightly p c.	acked. Gravel, su	bangular to subrounded	, maximum particle size 63.0mm;
1300 to 1400 *	Light grey SAN	D. Moist.	Tightly pa	cked. Sand, fine to coarse;	Silt, non-plastic.		
* NZS 3604:2011, S depth indicated.	Section 3.3.6 requi	res a minin	1 <i>um 50mm</i>	diameter auger hole to be co	ompleted to the dep	oth of each scala penetrom	eter probe. Unable to complete past the
Note:							
• The result • This report	ts stated above a rt may not be rep	re specific produced e	to the app xcept in fi	roximate test locations as ull.	recorded. CTS a	ccepts no liability for an	y extrapolated use of this data.
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e: 4 to	23-May-22	
Checked By:	emplux	7				ACC	CREDITED



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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

**Central Testing Services** 

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• This report may not be reproduced except in full.

Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher

emplus

**Checked By:** 

Date: 4 to 2

4 to 23-May-22



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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	averos.	co.nz		Attention:	S. Cornwall		
Job Descripti	on: Wooing	g Tree Su	bdivisio	n, Cromwell					
SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 287 – See Page 127 for location plan									
Denth	Penetration	Blo	ws /	Inferred Allowable					
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>					
()	(11111/01014)	mm	mm	(kPa)					
0 - 50	16.7	5		160		Inferred Bearing	Capacity (kPa)		
50 - 100	25.0	3		119					
100 - 150	16.7	7	21	160	0	50 100	150 200 250 300		
150 - 200	12.5	1	21	198	0				
200 - 250	12.5	0		198	100				
250 - 300	10.0	,		233					
300 - 350	16.7	5		160	200				
350 - 400	25.0	3		119	300				
400 - 450	16.7	7	17	160					
450 - 500	12.5	/	17	198	400				
500 - 550	16.7	5		160	500				
550 - 600	25.0	5		119					
600 - 650	25.0	4		119	600				
650 - 700	25.0	-	l	119	700				
700 - 750	25.0	5	14	119					
750 - 800	16.7	3	14	160	800				
800 - 850	16.7	5		160	900				
850 - 900	25.0	5		119					
900 - 950	25.0	4		119	☐ 1000				
950 - 1000	25.0		-	119	1100				
1000 - 1050	25.0	4	13	119	E 1100				
1050 - 1100	25.0	-	10	119	<b>4</b> 1200				
1100 - 1150	16.7	5		160	Je 1200				
1150 - 1200	25.0	5		119	1300				
1200 - 1250	25.0	4		119	1400				
1250 - 1300	25.0	-		119					
1300 - 1350	12.5	7	16	198	1500				
1350 - 1400	16.7	,	10	160	1600				
1400 - 1450	25.0	5		119	-				
1450 - 1500	16.7			160	1700				
1500 - 1550	16.7	7		160	1800				
1550 - 1600	12.5			198					
1600 - 1650	12.5	8	22	198	1900				
1650 - 1700	12.5	÷		198	2000				
1700 - 1750	16.7	7		160					
1750 - 1800	12.5			198	2100	Inferred Rearing C	anacity (50mm Intervals)		
bearing capacity res	suits stated above have l ider small structures, M	een inferred j J. Stockwell.	rom Fig 2 – The results a	Determination of allowable are relative to the ground	2200	Interred bearing e			
conditions at the tin	ne of test and will be he	wily influence	ed if significa	ant gravel fraction is present.		Inferred Bearing C	apacity (300mm intervals)		
The inferred values	should be used conserv	atively. IANZ	endorsemen	t does not apply to these values.	2300				
NZS 3604:2011, Sec	ction 3.3.7.1 (b) states th	at the ultimat	e bearing ca	pacity of the foundation shall be					
assumed to be not le	ess than 300 kPa if the i	umber of blo	ws per 100m ndarsida of t	m exceeds 5 down to a depth					
greater depths.	ann of the widest footh	g velow ine u	naerside of ti	ie proposeu jooting unu 5 ui					
]	FIELD LOG: NZ	Geotechn	ical Socie	ety Guidelines 2005 (Not l	ANZ Accredited);	Lot 287 - See Page 1	27 for location plan		
Depth (mm)	Description								
0 to 200	Topsoil & vegetar	tion (organ	ic matter)						
200 to 400 Grey / brown Gravelly SAND with trace of silt and trace of cobbles. Moist. Tightly packed. Gravel, subangular to subrounded, maximum									
particle size 75.0mm; Sand, fine to coarse; Silt, non-plastic.									
400 to 1500 *	Grey / brown SA	ND with m	inor silt. N	Aoist. Tightly packed. Sand	l, fine to coarse; Silt	, non-plastic.			
* NZS 3604:2011	Section 3.3.6 reaut	res a minin	um 50mm	diameter auger hole to be co	mpleted to the depth	of each scala penetrom	eter probe. Unable to complete past the		
depth indicated.									
Note:									
• The resu	ilts stated above a	re specific	to the app	proximate test locations as	recorded. CTS acc	epts no liability for an	y extrapolated use of this data.		
• This rep	ort may not be rei	roduced e	xcept in f	ull.			· · · · · · · · · · · · · · · · · · ·		
-1									
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	v & C. Fisher Date	e: 4 to 23	-May-22			
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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros	, stephenc	averos.	<u>co.nz</u>			Attention: S. Cornwall
Job Descripti	on: Wooii	ng Tree Su	ıbdivisio	n, Cromwell			
	SCA	LA PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 288	38 – See Page 127 for location plan
Depth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
,	(	mm	mm	(kPa)	-		
0 - 50	12.5	9		198			Inferred Bearing Capacity (kPa)
50 - 100	10.0	-	-	233	4		• • •
100 - 150	16.7	7	22	160	-	0	0 50 100 150 200 250 300
150 - 200	12.5			198	-	0	
200 - 250	16.7	6		160	-	100	
250 - 300	16./			160	-	200	
300 - 350	16.7	6		100	-	200	
<u> </u>	16.7			160		300	
400 - 430	16.7	6	18	160	-	400	
500 - 550	16.7			160	-		
550 - 600	16.7	- 6		160		500	
600 - 650	12.5			198		600	
650 - 700	12.5	8		198			
700 - 750	16.7			160	1	700	
750 - 800	16.7	6	19	160		800	
800 - 850	16.7	-	-	160			
850 - 900	25.0	5		119		900	
900 - 950	25.0	-		119	0	1000	
950 - 1000	16.7	3		160	, m		
1000 - 1050	25.0	4	12	119	(m	1100	
1050 - 1100	25.0	4	15	119	oth	1200	
1100 - 1150	25.0	4		119	)ep	-	
1150 - 1200	25.0	4		119	Γ	1300	
1200 - 1250	25.0	- 4		119	-	1400	
1250 - 1300	25.0	7		119		1500	
1300 - 1350	16.7	6	16	160		1200	
1350 - 1400	16.7	U	10	160		1600	
1400 - 1450	16.7	- 6		160	4	1700	
1450 - 1500	16.7	-		160		1/00	
1500 - 1550	16.7	7		160	-	1800	
1550 - 1600	12.5		_	198	-	1000	
1600 - 1650	16.7	6	23	160	-	1,000	
1050 - 1700	10./		-	100	-	2000	
1700 - 1750	10.0	10		233		2100	
<sup>1</sup> Bearing capacity res	10.0 Sults stated above have	e heen inferred	from Fig 2 –	233 Determination of allowable	-		Inferred Bearing Capacity (50mm Intervals)
bearing pressure un	der small structures,	M.J. Stockwell.	The results a	are relative to the ground		2200	Inferred Bearing Capacity (300mm intervals)
conditions at the tin The inferred values	ne of test and will be l should be used conse	heavily influence proatively IAN2	ed if significe endorsemen	ant gravel fraction is present. It does not apply to these values		2300	
NZS 3604:2011, Sec assumed to be not la equal to twice the w greater denths	ction 3.3.7.1 (b) states ess than 300 kPa if th idth of the widest foot	that the ultima e number of blo ting below the u	te bearing cap ws per 100m anderside of ta	pacity of the foundation shall be m exceeds 5 down to a depth he proposed footing and 3 at			
]	FIELD LOG: N	Z Geotechi	nical Socie	ety Guidelines 2005 (Not l	IANZ A	ccredit	ited); Lot 288 - See Page 127 for location plan
Depth (mm)	Description						
0 to 250	Topsoil & veget	ation (organ	ic matter)				
250 to 400	Grey / brown G Sand, fine to coa	ravelly SAN arse; Silt, no	D with tra on-plastic.	ace of silt. Moist. Tightly pa	acked. G	ravel, su	subangular to subrounded, maximum particle size 63.0mm;
400 to 1400 *	Grey / brown S	AND with m	inor silt. N	Moist. Tightly packed. Sand	d, fine to	coarse;	e; Silt, non-plastic.
* NZS 3604:2011, depth indicated.	Section 3.3.6 req	uires a minin	num 50mm	diameter auger hole to be co	ompletea	to the de	depth of each scala penetrometer probe. Unable to complete past the
Note:			_				
<ul><li>The result</li><li>This reput</li></ul>	llts stated above ort may not be re	are specific eproduced e	to the app except in f	proximate test locations as full.	record	ed. CTS	S accepts no liability for any extrapolated use of this data.
Tested By:	K. Hipkins, C	. Pearson	, T. Shav	v & C. Fisher Dat	e:	4 to	to 23-May-22
Checked By:	emplu	0					PCCREDITED



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Reference No: 22/1550

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accreditation

Date: 26 May 2022

<b>Client Details</b>	: Ver	os, <mark>stephenc</mark>	@veros.	<u>co.nz</u>				Atter	ntion:		S. Cori	nwall		
Job Description	on: Wo	oing Tree Su	ıbdivisio	n, Cromwell										
			DOLES		· · · · · -				<b>AF A</b>					
	SC	CALA PENEI	ROMET	ER (NZS 4402:1988, Test	t 6.5.2); L	ot 289	9 – See I	Page 1	27 for	locatio	n plan			
Depth	Penetrati	ion Blo	ws /	Inferred Allowable										
(mm)	(mm/blo	w) <sup>100</sup>	300	Bearing Capacity										
0.70	25.0	mm	mm	(KF8)	-									
0 - 50	25.0	4		119	-		In	ferre	d Bear	ing C	apacity	(kPa)		
50 - 100	25.0		_	119	_									
100 - 150	10.7	5	14	100	_	0	) 5	50	100	150	200	250	300	350
200 250	25.0			119										
200 - 230	16.7	5		119	-	100								
300 350	25.0			110	-	200								
350 - 400	25.0	- 4		119					L					
400 - 450	16.7			160	-	300								
450 - 500	16.7	6	14	160	_	400								
500 - 550	25.0		-	119	_									
550 - 600	25.0	- 4		119		500								
600 - 650	16.7	-		160		600								
650 - 700	25.0	5		119										
700 - 750	16.7	-	14	160		700			_					
750 - 800	25.0	5	14	119		800								
800 - 850	25.0	4		119										
850 - 900	25.0	4		119		900								
900 - 950	16.7	5		160		1000								
950 - 1000	25.0	3		119	III	1100			++					
1000 - 1050	25.0	3	11	119	(II	1100								
1050 - 1100	50.0	5	11	68	oth	1200			┿┺┯					
1100 - 1150	25.0	3		119	)er	1200								
1150 - 1200	50.0	5		68	I	1300								
1200 - 1250	25.0	3		119	4	1400								
1250 - 1300	50.0	5	_	68	_	1500								
1300 - 1350	16.7	5	15	160	_	1500								
1350 - 1400	25.0		10	119		1600						-		
1400 - 1450	12.5	7		198	-									
1450 - 1500	16.7			160	_									
1500 - 1550	12.5	8		198	-	1800								
1550 - 1600	12.5		_	198	_	1900								
1650 1700	10.0	10	30	233	_	-								
1050 - 1700	10.0		_	233	-	2000								
1750 1800	7.1	12		200	-	2100								
<sup>1</sup> Bearing capacity res	ults stated above	have been inferred	from Fig 2 –	Determination of allowable	_			—— Infe	ired Bea	ring Cap	acity (50mn	1 Intervals)		
bearing pressure un	der small structu	res, M.J. Stockwell.	The results a	re relative to the ground		2200	_	Infe	ired Bea	ing Cap	acity (300m	m intervals	5)	
conditions at the tim The inferred values	e of test and will should be used c	be heavily influence onservatively, IAN2	ed if significa Zendorsemen	int gravel fraction is present. t does not apply to these values.		2300 <sup>1</sup>						and a second sec		
NZS 3604:2011, Sec assumed to be not le	tion 3.3.7.1 (b) st ess than 300 kPa	ates that the ultima if the number of blo	te bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth										
equal to twice the w	idth of the widest	footing below the u	nderside of th	he proposed footing and 3 at										
greater depths.	TELDIOC	NZ Contach	viaal Sagi-	ty Cuidelines 2005 (N-+1	 	anodia	- I (bo	+ 700	Sec. D.	000 125	forlas	tion nl-	n	
Donth (mm)	Description	. INZ Geotechi	ncai Socie	ay Guidennes 2005 (Not	IANZ AC	create	eu); L0	1 209 -	see Pa	ige 12/	101 1008	nion pia	11	
Deptil (IIIII)	Toposil 9	actation (	in matters											
0 10 300	Topsoll & ve	getation (organ	ne matter)		ahad C			ant-	<b>b</b>	4.4 -			aino 27 5	
300 to 500	Sand, fine to	coarse; Silt, no	on-plastic.	ice of silt. Woist. Fightly pa	acked. Gr	avel, si	ubangu	ar to s	ubrour	iaea, m	aximum	particle	size 37.5	mm;
500 to 1400 *	Grey / brow	n SAND with m	inor silt. N	loist. Tightly packed. San	d, fine to c	coarse;	; Silt, no	n-plas	tic.					
* NZS 3604:2011,	Section 3.3.6	requires a minin	num 50mm	diameter auger hole to be co	ompleted to	o the de	lepth of e	each sca	ala pene	tromete	er probe.	Unable to	complete	e past the
Net a														
Note:	14		4- 41-			CTC			1:1:				-64	
<ul> <li>The resu</li> <li>This repo</li> </ul>	its stated abo ort may not b	ve are specific e reproduced e	to the app except in fi	proximate test locations as ull.	recorded	. CTS	accepts	no lía	bility f	or any	extrapol	ated use	of this d	ata.
Tested By:	K. Hipkins	, C. Pearson	T. Shaw	& C. Fisher Dat	e:	4 to	o 23-M	[ay-22	2					
	1	//								ACCRE	DITED			
Checked By:	limp	lin								•		Test	results in	dicated



**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 54 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: V	'eros, <mark>s</mark>	<u>tephenc</u>	<u>averos.c</u>	co.nz			F	Attention	:	S. Cori	nwall		
Job Description	on: V	Vooing	Tree Su	bdivisio	n, Cromwell									
		3	_											
		SCALA	<b>PENET</b>	ROMETI	ER (NZS 4402:1988, Test	6.5.2);	Lot 29	0 – See Pa	age 127 for	· locatio	n plan			
<b>D</b> (1	<b>D</b> (		Blo	ws /	Inferred Allowable									
Depth	Penetra	ation	100	300	Bearing Capacity <sup>1</sup>									
(mm)	(mm/b	olow)	mm	mm	(kPa)									
0 - 50	25	0	mm		119			Tnf	ownod Dog	ning C	oposity	$(l_2 \mathbf{D}_2)$		
<u> </u>	16	7	5		160			11110	erreu bea	ring C	apacity	(KE A)		
100 150	16	7			160		(	50	100	150	200	250	300	350
150 200	9.2	2	9	26	267		0 -		100		200			
200 250	0.	, 5			109				L					
200 - 250	12.	5	12		198	-	100							
250 - 300	0.3	, -			330	-	200							
300 - 350	12.	5	7		198		200							
350 - 400	16.	7			160		300							
400 - 450	25.	0	7	21	119									
450 - 500	10.	0			233		400							
500 - 550	16.	7	7		160		500				_			
550 - 600	12.	5	,		198					L				
600 - 650	16.	7	6		160		600							
650 - 700	16.	7	U		160		70.0							
700 - 750	16.	7	E	10	160		/00							
750 - 800	16.	7	0	19	160		800							
800 - 850	16.	7			160					L L				
850 - 900	12.	5	1		198	1	900							
900 - 950	25.	0	_		119		1000							
950 - 1000	16.	7	5		160	m (m	10000		L					
1000 - 1050	25	0			119	m	1100			_				
1050 - 1100	16	7	5	14	160	h (	1200							
1100 1150	25	, 0			110	pt	1200							
1150 1200	23.	0	4		119	De	1300							
1200 1250	25.	0			119	-								
1200 - 1250	25.	0	4		119	-	1400							
1250 - 1300	25.	0		-	119	-	1500			Г				
1300 - 1350	16.	7	6	17	160		1000							
1350 - 1400	16.	7			160		1600							
1400 - 1450	12.	5	7		198	-	1700							
1450 - 1500	16.	7	-		160		1/00							
1500 - 1550	12.	5	8		198		1800							
1550 - 1600	12.	5	0		198									
1600 - 1650	12.	5	8	24	198		1900							
1650 - 1700	12.	5	0	24	198		2000							
1700 - 1750	12.	5	0		198		2000							
1750 - 1800	12.	5	ð		198		2100							
<sup>1</sup> Bearing capacity res	ults stated abo	we have be	en inferred j	from Fig 2 –	Determination of allowable	]	2200		– Inferred Be	aring Cap	acity (50mr	n Intervals)		
bearing pressure un	der small stru	ctures, M	J. Stockwell.	The results a	re relative to the ground		2200		Inferred Be	aring Cap	acity (300m	ım intervals	)	
The inferred values	should be used	d conserva	tively. IANZ	endorsement	t does not apply to these values.		2300	-						
NZS 3604:2011, Sec assumed to be not le	tion 3.3.7.1 (b)	) states tha Pa if the m	t the ultimat umber of blo	e bearing cap ws ner 100mm	pacity of the foundation shall be mexceeds 5 down to a depth									
equal to twice the w	idth of the wid	lest footing	below the u	nderside of th	ne proposed footing and 3 at									
greater depths.		~	~			 								
l	FIELD LO	G: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	IANZ A	Accredi	ted); Lot	290 - See P	age 12'	7 for loca	tion pla	n	
Depth (mm)	Descriptio	on												
0 to 100	Topsoil &	vegetati	on (organ	ic matter).										
100 to 1400 *	Grey / bro Sand. fine	wn Grav to coars	velly SAN e; Silt. no	D with tra n-plastic.	ce of silt. Moist. Tightly pa	icked. (	Gravel, s	subangula	r to subrou	nded, n	aximum	particles	size 37.5n	nm;
* NZS 3604:2011, depth indicated.	Section 3.3.	.6 requir	es a minim	um 50mm	diameter auger hole to be co	ompleted	d to the c	lepth of eac	ch scala pen	etromet	er probe.	Unable to	complete	past the
Note:														
The second	Its stated ~	howa	a spaaifia	to the arr	rovimata tast locations an	roond	ad CTO	accorts -	na liahilin.	for an.	avtuanal	atad use	of this d	ata
• Ine resu	us suiten a	the set	e specijič	want in f		record	ea. C13	accepts h	w nabiniy	<i>for any</i>	елнироі	uteu use	oj inis al	
<ul> <li>Inis repo</li> </ul>	ori may noi	ı ve repi	vuucea e.	cept in fi	<i>и</i> .									
Cested Rv.	K Hinki	ns <u>C</u> I	Pegrenn	T Show	& C Fisher Dat	۰.	1	o 23_Mo	v_??					_
i csicu Dy:	т. тирки	us, C. I	cai suil,	1. Shaw	a c. risiici Dati	L.	41	10 2 <b>3-</b> 1918	y-22					
<b>a</b> 1 1 5														
Checked By:	lm	hlio								CCI	EDITE	1		
										P	-0			



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 55 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros, s	stephence	<u>(a)veros.</u>	<u>co.nz</u>			Att	ention:	S. Co	ornwall		
Job Description	on: Wooing	Tree Su	bdivisio	n, Cromwell								
	SCAL .	DENET	DOMET	ED (NIZS 4403-1000 T 4	( <b>5</b> 1) · <b>T</b> · ·	201 4	Eas Dee	127 f )	action -1			
	SCALA	A PENET	KUMET	LK (INZS 4402:1988, Test	0.3.2); Lot	291 – S	see rage	12/ IOP 10	cation plai	11		
Depth	Penetration	BIO	WS /	Interred Allowable								
(mm)	(mm/blow)	100	300	Bearing Capacity								
0 70		mm	mm	(KFa)			T C	1.0	<i>c</i>			
0 - 50	25.0	5		119			Interr	ed Bearin	ig Capaci	ity (kPa)		
50 - 100	16.7	÷		160		0	100	200	200	40.0	500	60.0
100 - 150	16.7	6	32	160		) +	100	200	300	400	500	000
150 - 200	16.7		-	160			L					
200 - 250	2.9	21		573	10	0						
250 - 300	12.5			198	20							
300 - 350	12.5	7		198								
350 - 400	16.7	1		160	30	0						
400 - 450	12.5	7	19	198	40							
450 - 500	16./			160	40							
500 - 550	25.0	5		119	50	0	Г					
550 - 600	16./	1		100	60							
650 700	12.5	8		198	00							
050 - 700	12.5		1	198	70	D =	- I					
750 800	25.0	5	19	119	00							
/50 - 800	10./		1	100	80							
800 - 850	16.7	6		160	90	0						
850 - 900	16./			100	100							
900 - 950	12.5	7		198	(a) 100							
950 - 1000	16.7			100	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>	o ]		_				
1000 - 1050	10.7	5	17	100								
1050 - 1100	25.0	-		119	120 I							
1100 - 1150	10.7	5		100	Q 130	) <u> </u>						
1150 - 1200	25.0			119								
1200 - 1250	25.0	4		119	1400 1500	0						
1250 - 1500	25.0			119		, i						
1300 - 1350	12.5	8	20	190								
1350 - 1400	12.5			190	160	0						
1400 - 1450	12.5	8		190	170							
1430 - 1300	12.3			170	2,0			- I I				
1500 - 1550	10.0	10		233	180	0						
1600 - 1650	10.0			233	190							
1650 - 1700	12.5	9	30	198	250							
1700 - 1750	83			267	200	0						
1750 - 1800	10.0	11		233	210	, i						
<sup>1</sup> Bearing capacity res	ults stated above have be	een inferred j	from Fig 2 –	Determination of allowable	210		—— In	ferred Bearin	g Capacity (50	0mm Interval	s)	
bearing pressure un	der small structures, M.	J. Stockwell.	The results a	re relative to the ground	220	0	— In	ferred Bearin	σ Canacity (3)	00mm interva	ls)	
Conditions at the tin The inferred values	ie of test and will be hea should be used conserva	vily influence itively, IANZ	ea if significa ' endorsemen	int gravel fraction is present. t does not apply to these values.	230				g enpirenty (et			
NZS 3604:2011, Sec assumed to be not le	tion 3.3.7.1 (b) states the ess than 300 kPa if the n	at the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth								
equal to twice the war greater depths.	uain of the widest footing	g delow the u	nderside of th	ie proposed footing and 3 at								
l	FIELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ Accre	dited):	; Lot 291	- See Pag	e 127 for lo	ocation pla	ın	
Depth (mm)	Description							8				
0 to 250	Topsoil & vegetati	ion (organ	ic matter)	•								
250 40 1000 *	Grey / brown Gra	velly SAN	D with tra	ice of cobbles and trace of s	silt. Moist. T	ightly r	oacked. (	Gravel / cob	bles, suban	igular to su	brounded	I,
250 to 1000 *	maximum particle	e size 75.01	nm; Sand	, fine to coarse; Silt, non-pl	astic.	5 7			,			
* NZS 3604:2011,	Section 3.3.6 requir	res a minin	num 50mm	diameter auger hole to be co	mpleted to th	e depth	of each s	cala penetro	ometer prob	e. Unable te	o complete	past the
depth indicated.												
Note:	_											
• The resu	lts stated above ar	e specific	to the app	proximate test locations as	recorded. C	TS acc	epts no l	iability for	any extrap	olated use	of this da	uta.
• This repo	ort may not be rep	roduced e	xcept in fi	ull.								
Tested By:	K. Hipkins, C. I	Pearson,	T. Shaw	& C. Fisher Date	2:	4 to 23	3-May-2	22				
Chooked Pre-	grand l.											
спескеа ву:	empino								CCREDITA	5.		
									P			ndlast-1
											SU LESUITS I	nuicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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Reference No: 22/1550

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accreditation

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	@veros.	co.nz		Attention:	S. Cornwall
Job Description	on: Wooing	g Tree Su	bdivisio	n, Cromwell			
<b>^</b>							
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 292	- See Page 127 for loca	tion plan
Donth	Departmention	Blo	ows /	Inferred Allowable			
Depth	renetration (mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
(mm)	(IIIII/DIOW)	mm	mm	(kPa)			
0 - 50	25.0			119		Inferred Bearing	g Capacity (kPa)
50 - 100	25.0	4		119			
100 - 150	12.5			198	0	50 100	150 200 250 300
150 - 200	10.0	9	22	233	0		
200 - 250	16.7	_		160	100		
250 - 300	8.3	9		267			
300 - 350	12.5			198	200		
350 - 400	16.7	7		160	300		
400 - 450	25.0			110			
450 - 500	50.0	3	13	68	400		
500 - 550	50.0			68	500		
550 - 600	25.0	3		119	500		
600 - 650	50.0	1	1	68	600		
650 - 700	16.7	4		160			
700 - 750	25.0		1	110	700		
750 800	25.0	4	12	117	800		
730-800	25.0			119			
000-000	25.0	4		119	900		
850 - 900	25.0			119	1000		
900 - 950	25.0	4		119	E 1000		
950 - 1000	25.0		-	119	E 1100		
1000 - 1050	50.0	3	12	68		-	
1050 - 1100	25.0			119	1200		
1100 - 1150	16.7	5		160	0 1300		
1150 - 1200	25.0			119	1300		
1200 - 1250	16.7	5		160	1400		
1250 - 1300	25.0	-		119			
1300 - 1350	16.7	9	21	160	1500		
1350 - 1400	8.3	-		267	1600		
1400 - 1450	12.5	7		198			
1450 - 1500	16.7	-		160	1700		
1500 - 1550	25.0	3		119	1800		
1550 - 1600	50.0	-		68	1000		
1600 - 1650	25.0	4	13	119	1900		
1650 - 1700	25.0		10	119			
1700 - 1750	16.7	6		160	2000		
1750 - 1800	16.7	v		160	2100		
<sup>1</sup> Bearing capacity res	sults stated above have b oder small structures M	een inferred	from Fig 2 – The results (	Determination of allowable		Inferred Bearing	Capacity (50mm Intervals)
conditions at the tin	ne of test and will be hea	wily influenc	ed if significa	int gravel fraction is present.	2200	Inferred Bearing	Canacity (300mm intervals)
The inferred values	should be used conserv	atively. IANZ	endorsemen	t does not apply to these values.	2300		
NZS 3604:2011. Sec	tion 3.3.7.1 (b) states th	at the ultima	te hearing cau	pacity of the foundation shall be	2500		
assumed to be not la	ess than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the w	ndth of the widest footin	g below the u	nderside of tl	ne proposed footing and 3 at			
greater aepins.	FIELD LOG- NZ	Gentechr	nical Socia	ty Guidelines 2005 (Not 1	ANZ Accredite	ed): Lot 292 - See Page 1	127 for location plan
Denth (mm)	Description	Stottem	Soen	Surdennes 2005 (10t)			
	Topsoil & vogotot	ion (orga-	ic matter)				
0 10 50	Crew / how or C	ion (organ	D mith t	• • • • • • • • • • • • • • • • • • • •	14 Maint Thild	humashad Coursel ( - 111	las anhonoulan to art-re-re-ded
50 to 1450 *	Grey / brown Gra	iveny SAN	D with tra	fine to contract Silt non -	sut. 1v101st. Tight Astic	iy packed. Gravel / cobbl	ies, subangular to subrounded,
* NZS 3604-2011	Section 3.3.6 room	c 512C / 5.01	11111; 58110 111111 ; 58110	, inc to coarse; Sitt, 1100-pl	asuc. mnleted to the de	onth of each scala nonotron	neter probe Unable to complete post the
depth indicated.	Section S.S. 0 Lequin	с <i>э а шиш</i>	iam Jomm	anameter auger note to be to	mprice to the de	pen or cach scara penetron	
Note							
The rest	Its stated above a	o snocific	to the arr	provimate test locations as	recorded CTS	accents no liability for a	nv extranolated use of this data
- ine resu	ans suuren ubove al out man vot ho	e specijić	w ine upp	nommute test tocations as ti	recoraea. CIS	accepts no taotitiy jor a	ny entrupotatea use oj titis aata.
• This rep	ort may not be rep	roauced e	xcept in fi	<i>и</i>			
Tested Rv.	K Hinkins C	Pearson	T Show	& C Fisher Dat	e• / +c	23_May_22	
i csicu Dy:	K. IIIPKIIIS, C.	i cai suff,	1. SHAW	a c. risher Dat		23-111ay-22	
	. //						
Cnecked By:	empurio	1					CREDITE
	-					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	· · · · · · · · · · · · · · · · · · ·

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Page 57 of 127 Pages

Reference No: 22/1550

as not accredited are outside the scope of the laboratory's

accreditation

Date: 26 May 2022

Client Details	: Veros,	stephenc	@veros.	co.nz			Attention:	S. Cornwa	ıll	
Job Description	on: Wooing	g Tree Su	bdivisio	n, Cromwell						
						-				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 29.	3 – See Page 127 for loca	tion plan		
Depth	Penetration	Blo	ws /	Inferred Allowable						
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>						
	(	mm	mm	(kPa)						
0 - 50	12.5	14		198	-		Inferred Bearing	Capacity (kI	Pa)	
50 - 100	5.0		-	388	-					
100 - 150	7.1	12	32	299	-	0	0 100 200	300	400	500
150 - 200	10.0		-	233	-		L			
200 - 250	16.7	6		160	-	100				
250 - 500	10.7			100	-	200				
350 - 350	16.7	5		119	-	200				
400 - 450	25.0			110	1	300				
450 - 500	12.5	6	19	198	-	400				
500 - 550	12.5	_	-	198						
550 - 600	12.5	8		198		500				
600 - 650	12.5	-		198	1	600	── <b>─</b>			
650 - 700	16.7	7		160						
700 - 750	25.0	5	17	119	1	700				
750 - 800	16.7	3	17	160		800				
800 - 850	16.7	5		160		000				
850 - 900	25.0	3		119		900				
900 - 950	16.7	6		160		1000				
950 - 1000	16.7	U		160	un	1100				
1000 - 1050	16.7	6	20	160	(D	1100				
1050 - 1100	16.7	v		160	pth	1200				
1100 - 1150	12.5	8		198	Del	1300				
1150 - 1200	12.5	-		198	_	1500				
1200 - 1250	12.5	8		198		1400				
1250 - 1300	12.5		-	198	-	1500				
1300 - 1350	/.1	12	32	299	-			4		
1350 - 1400	10.0			233	-	1600				
1450 - 1500	7 1	12		233	-	1700				
1500 - 1550	7.1			299						
1550 - 1600	4.5	18		416	1	1800				
1600 - 1650	5.6			359		1900				
1650 - 1700	10.0	14	44	233	1	2000				
1700 - 1750	8.3	10		267	1	2000				
1750 - 1800	8.3	12		267		2100				
<sup>1</sup> Bearing capacity res	ults stated above have l	een inferred	from Fig 2 –	Determination of allowable		22.00	Inferred Bearing (	apacity (50mm Int	ervals)	
conditions at the time	aer small structures, M ie of test and will be he	.J. Stockwell. wily influence	d if significa	ire relative to the ground int gravel fraction is present.			Inferred Bearing (	Capacity (300mm in	tervals)	
The inferred values	should be used conserv	atively. IANZ	endorsemen	t does not apply to these values.		2300 1		I		
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states th	at the ultimat	e bearing car	pacity of the foundation shall be						
assumed to be not le	ess than 300 kPa if the i	umber of blo	ws per 100m	m exceeds 5 down to a depth						
equal to twice the ward greater depths.	uun oj ine widest footin	g delow the u	naersiae of th	ie proposea jooting and 3 at						
I	FIELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	IANZ A	.ccredit	ted); Lot 293 - See Page	127 for location	n plan	
Depth (mm)	Description									
0 to 250	Topsoil & vegetat	tion (organ	ic matter)							
250 to 1350 *	Grey / brown Gra	velly SAN	D with tra	ice of cobbles and trace of s	silt. Moi	st. Com	pact. Gravel / cobbles, su	bangular to sub	rounded, may	ximum
200 10 1000	particle size 75.0r	nm; Sand,	fine to coa	arse; Silt, non-plastic.	_					
* NZS 3604:2011, denth indicated	Section 3.3.6 requi	res a minin	1 <i>um 50mm</i>	diameter auger hole to be co	ompletea	to the a	lepth of each scala penetron	eter probe. Una	ble to complete	e past the
Notes										
Note:	Its stated about -	a space:	to the area	vovimata tast locations	Racond	d CTC	acconts no liability for -	m artuan lat	usa of this J	lata
Ine resu	uis stated above al	re specific	w ine app	oroximate test locations as	recorde	ea. CIS	accepts no hability for a	ny extrapolatea	i use of this d	ata.
• This repo	ort may not be rep	roauced e	xcept in fi	<i>ин.</i>						
Tested Bv:	K. Hipkins, C.	Pearson.	T. Shaw	& C. Fisher Date	e:	4 t	to 23-May-22			
····· • • · · · ·		50119		Date Date						
Checked Rv•	emples	,								
Checked By.	Jorgan							CREDITEN	ĺ	
							r.		Test results	indicated


**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

outside the scope of the laboratory's

accreditation

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	stephenc	@veros.	co.nz			Attention:	S. Cornwa	11	
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell						
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); I	Lot 294	- See Page 127 for locat	tion plan		
Denth	Penetration	Blo	ws /	Inferred Allowable						
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>						
()	(	mm	mm	(kPa)						
0 - 50	50.0	4		68	l		Inferred Bearing	Capacity (k)	Pa)	
50 - 100	16.7	4		160						
100 - 150	16.7	7	17	160	]	0	50 100 150	200 250	300 350	400
150 - 200	12.5	/	17	198		0 -				
200 - 250	25.0	6		119		100				
250 - 300	12.5	U		198				_		
300 - 350	25.0	-		119		200				
350 - 400	16.7	3		160		300				
400 - 450	25.0	6	17	119						
450 - 500	12.5	0	17	198		400				
500 - 550	16.7	6		160		500				
550 - 600	16.7	0		160	]					
600 - 650	16.7	6		160	]	600	<b>K</b>			
<u>650 - 7</u> 00	16.7	0		160		700				
700 - 750	10.0	0	24	233	]	/00				
750 - 800	12.5	9	24	198		800				
800 - 850	12.5	0	1	198	1	-				
850 - 900	10.0	9		233		900				
900 - 950	12.5	_	t	198	1	1000				
950 - 1000	16.7	7		160	m)	-				
1000 - 1050	10.0		1	233	<u> </u>	1100				
1050 - 1100	10.0	10	28	233	h	1200				
1100 - 1150	8.3			267	ept	1200		_		
1150 - 1200	10.0	11		233	De	1300		-		
1200 - 1250	16.7	t	1	160	1	1400				
1250 - 1300	12.5	7		198	1	1400				
1300 - 1350	16.7	<u> </u>	1	160	1	1500				
1350 - 1400	10.7	8	23	233	1					
1400 - 1450	12.5		1	108	1	1600 -				
1450 - 1500	12.5	8		108	1	1700				Longer extension
1500 1550	12.3			170	1					
1550 1600	10.0	10		233	1	1800				
1600 1650	5.0	<u> </u>	1	399	1	1000				
1650 1700	10.0	15	34	233	1	1900				
1700 1750	10.0	<u> </u>	1	100	1	2000				
1750 1900	12.3	9		170	1	1100				
<sup>1</sup> Bearing canacity resu	10.0 Its stated above have b	een inferred	from Fig 2 -	233 Determination of allowable	1	2100	Inferred Bearing (	apacity (50mm Int	ervals)	
bearing pressure und	ler small structures, M.	J. Stockwell.	The results a	are relative to the ground		2200		,, (comm 110		
conditions at the time	e of test and will be hea	vily influence	ed if significa	ant gravel fraction is present.		-	Inferred Bearing C	apacity (300mm in	itervals)	
ine injerrea values s	nouta de usea conserva	и <i>вче</i> ву. 1АМZ	enuorsemen	i aves not apply to these values.		2300 1		l		
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be						
assumed to be not les equal to twice the wi	ss than 300 kPa if the n ath of the widest footing	umber of blo g below the u	ws per 100m nderside of tl	m exceeds 5 down to a depth he proposed footing and 3 at						
greater depths.		,		······································						
F	IELD LOG: NZ	Geotechn	ical Socie	ety Guidelines 2005 (Not l	IANZ Ac	credite	d); Lot 294 - See Page 1	27 for location	ı plan	
Depth (mm)	Description									
0 to 50	Topsoil & vegetat	ion (organ	ic matter)							
50 4a 1 400 ±	Grey / brown Gra	velly SAN	D with tra	ice of cobbles and trace of s	silt. Mois	t. Tightl	ly packed. Gravel / cobbl	es, subangular	to subrounde	ed,
50 to 1400 *	maximum particle	<u>e size 75.</u> 01	<u>mm; San</u> d	, fine to coarse; Silt, non-pl	astic.					
* NZS 3604:2011,	Section 3.3.6 requir	res a minin	num 50mm	diameter auger hole to be co	ompleted t	to the de	pth of each scala penetrom	eter probe. Una	ble to complet	te past the
depth indicated.										
Note:										
• The resul	ts stated above ar	e specific	to the app	proximate test locations as	recorded	l. CTS d	accepts no liability for an	y extrapolated	use of this d	data.
• This repo	rt may not be rep	roduced e	xcept in fi	ull.						
		-								
Tested By: I	K. Hipkins, C. 1	Pearson,	T. Shaw	v & C. Fisher Date	e:	4 to	23-May-22			
	11									
Checked Bv:	emplus									
· · ·							~0	CREDITED		
							r		Test results	s indicated
									as not accr	edited are

**(TS**)

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Page 59 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros	s, <u>stephenc</u>	averos.	<u>co.nz</u>			Attention:	S. Cornwa	11
Job Description	on: Wooi	ng Tree Su	bdivisio	n, Cromwell					
	~~~	I A DESITE	DOLTE	D AIZO 4402 1000 -		x , 20-	G D 107.0 1		
	SCA	LA PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 295	- See Page 127 for loca	tion plan	
Depth	Penetration	1 BI0	WS /	Interred Allowable Rearing Capacity <sup>1</sup>					
(mm)	(mm/blow)	100	300	(kPa)					
0 - 50	25.0	111111	111111	119			Inferred Bearing	Capacity (k	Pa)
50 - 100	12.5	6		198					,
100 - 150	16.7			160		0	50 100 150	200 250	300 350 400
150 - 200	12.5	7	21	198		0		-	
200 - 250	12.5			198		100			
250 - 300	12.5	0		198		200	L		
300 - 350	16.7	10		160	_				
350 - 400	7.1		1	299		300			
400 - 450	12.5	8	25	198	-	400			
500 - 550	16.7		-	150	-	500			
550 - 600	12.5	7		198	-	500			
600 - 650	16.7			160		600			
650 - 700	16.7	6		160		700			
700 - 750	10.0	Q	22	233				<b>_</b>	
750 - 800	16.7	0		160		800			
800 - 850	16.7	8		160	_	900			
850 - 900	10.0	-		233					
900 - 950	12.5	7		198	(u	1000			
950 - 1000	10.7			100	mn	1100			
1050 - 1100	10.0	9	25	233	h (	1200			
1100 - 1150	16.7		-	160	ept	1200			
1150 - 1200	8.3	9		267	Ď	1300			
1200 - 1250	10.0	14		233		1400			
1250 - 1300	5.6	14		359		1400			
1300 - 1350	10.0	11	39	233		1500			- <b>h</b>
1350 - 1400	8.3	11		267		1600			
1400 - 1450	8.3	14		267					
1450 - 1500	6.3			330	_	1700			
1500 - 1550	9.2	- 11		255		1800			
1600 - 1650	5.6		-	359	-	1000			
1650 - 1700	7.1	16	40	299	-	1900			
1700 - 1750	12.5	12		198	-	2000			
1750 - 1800	5.6	13		359		2100			
<sup>1</sup> Bearing capacity res	ults stated above ha	ve been inferred	from Fig 2 –	Determination of allowable			Inferred Bearing	Capacity (50mm In	tervals)
conditions at the tim	ie of test and will be	heavily influence	ed if significa	int gravel fraction is present.		2200	Inferred Bearing	Capacity (300mm i	ntervals)
The inferred values	should be used cons	ervatively. IANZ	endorsemen	t does not apply to these values.		2300			
NZS 3604:2011, Sec assumed to be not le	tion 3.3.7.1 (b) state ss than 300 kPa if th	s that the ultimat he number of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth					
equal to twice the w	idth of the widest foo	oting below the u	nderside of tl	he proposed footing and 3 at					
	FIELD LOG: N	NZ Geotechn	ical <u>Soc</u> ie	ty Guidelines 2005 (Not l	IANZ A		d); Lot 295 - See Page 1	27 for location	plan
Depth (mm)	Description								
0 to 250	Topsoil & vege	tation (organ	ic matter)						
250 to 1500 *	Grey / brown (	Fravelly SAN	D with tra	ice of cobbles and trace of s	silt. Mo Iastic	ist. Tight	ly packed. Gravel / cobbl	es, subangular t	to subrounded,
* NZS 3604:2011, depth indicated	Section 3.3.6 req	uires a minin	num 50mm	diameter auger hole to be co	ompleted	to the de	pth of each scala penetrom	eter probe. Unal	ble to complete past the
Note.									
• The resu	Its stated above	are specific	to the apr	proximate test locations as	record	ed. CTS	accepts no liability for a	w extranolated	use of this data
• This rep	ort may not be i	reproduced e	xcept in fi	ull.	10001	<i>.u. .</i> 131	accepts no anouny jor ar	у сли ирошией	use oj inis uuu.
Tested By:	K. Hipkins, C	C. Pearson,	T. Shaw	& C. Fisher Dat	e:	4 to	23-May-22		
		/							
Checked By:	emplu	0						REDU	
							AC	CREDITED	
									Test results indicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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Page 60 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

#### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	, stephenc	averos.	<u>co.nz</u>			Attention: S. Cornwall
Job Description	on: Wooin	ng Tree Su	ıbdivisio	n, Cromwell			
	00.0		DOLTE		<	x	
	SCA	LA PENEI	ROMET	ER (NZS 4402:1988, Test	: 6.5.2);	Lot 29	96 – See Page 127 for location plan
Depth	Penetration	BI0	ows /	Interred Allowable Bearing Connecteu 1			
(mm)	(mm/blow)	100	300	(kPa)			
0.50	16.7	mm	mm	(KI a) 160			Inferred Bearing Capacity (kPa)
<u> </u>	10.7	8		233			8
100 - 150	10.0			233		(	0 50 100 150 200 250 300 350 400
150 - 200	16.7	8	27	160		0	
200 - 250	12.5		_	198		100	
250 - 300	7.1	- 11		299			
300 - 350	8.3	10		267		200	
350 - 400	12.5	10		198		300	
400 - 450	16.7	0	20	160		100	
450 - 500	10.0	o	30	233		400	
500 - 550	12.5	12		198		500	
550 - 600	6.3			330		60.0	
600 - 650	16.7	6		160	-	000	
650 - 700	16.7		-	160	4	700	
750 800	10./	7	19	100	1	800	
800 850	12.5		1	198	1	000	
850 - 900	12.5	6		119		900	
900 - 950	12.5			198		1000	
950 - 1000	10.0	- 9		233	m)	1000	
1000 - 1050	7.1			299	(m	1100	
1050 - 1100	8.3	13	30	267	th	1200	
1100 - 1150	16.7	0		160	epi		
1150 - 1200	10.0	8		233	D	1300	
1200 - 1250	12.5	10		198		1400	
1250 - 1300	8.3	10		267			
1300 - 1350	10.0	10	33	233	-	1500	
1350 - 1400	10.0		_	233	-	1600	
1400 - 1450	6.3	13		233		1700	
1430 - 1300	83			267		1/00	
1550 - 1600	5.0	16		388		1800	
1600 - 1650	7.1			299		1900	
1650 - 1700	5.0	17	43	388			
1700 - 1750	12.5	10		198		2000	
1750 - 1800	8.3	10		267		2100	
<sup>1</sup> Bearing capacity res	ults stated above have	e been inferred M_I_Stockwell	from Fig 2 – The results (	Determination of allowable			Inferred Bearing Capacity (50mm Intervals)
conditions at the tin	ie of test and will be h	eavily influenc	ed if significa	ant gravel fraction is present.		2200	Inferred Bearing Capacity (300mm intervals)
The inferred values	should be used conse	rvatively. IANZ	endorsemen	t does not apply to these values.		2300	
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states	that the ultima	te bearing cap	pacity of the foundation shall be			
equal to twice the w	ess than 500 kPa if the idth of the widest foot	c numper of blo ing below the u	nderside of t	m exceeas 5 aown to a depth he proposed footing and 3 at			
greater depths.		7.0	. 10 .	-			4 D I 4007 C D 407 C L 4 1
Donth (mm)	Description	L Geotechr	iical Socie	ery Guidelines 2005 (Not I	IANZ A	ccredi	iteu); Lot 296 - See rage 127 for location plan
0 to 100	Topsoil & vagate	ation (organ	ic matter)				
0.00100	Grey / brown G	ravelly SAN	D with tre	 ace of silt. Moist. Tightly ng	ncked. G	aravel. •	subangular to subrounded, maximum narticle size 37.5mm
100 to 1400 *	Sand, fine to coa	rse; Silt, no	n-plastic.	and a state of the			
* NZS 3604:2011, denth indicated	Section 3.3.6 requ	iires a minin	num 50mm	diameter auger hole to be co	ompletea	l to the a	depth of each scala penetrometer probe. Unable to complete past the
Note:							
• The resu	lts stated above a	are specific	to the app	proximate test locations as	record	ed. CTS	'S accepts no liability for any extrapolated use of this data.
• This rep	ort may not be re	produced e	xcept in f	ull.			1 ····································
T		<b>D</b>	·			4	4. 22 M. 22
i estea By:	K. Hipkins, C	. rearson,	1. Shaw	v & C. Fisner Date	e:	4 (	10 23-1v1ay-22
Charles D							
спескей Ву:	emplu	0					PCCREDITED



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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Page 61 of 127 Pages

Reference No: 22/1550

outside the scope of the laboratory's

accreditation

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	Veros,	stephenc	<u>averos.</u>	<u>co.nz</u>			Attention: S. Cornwall
Job Description	on: Wooing	g Tree Su	bdivisio	n, Cromwell			
		A DENEZ	DOVER	ED AUZO 4402 1000 T	( = 2)	T / AA	
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	: <b>6.5.2</b> );	Lot 29	97 – See Page 127 for location plan
Depth	Penetration	BI0	WS /	Inferred Allowable Boaring Capacity <sup>1</sup>			
(mm)	(mm/blow)	100	300 mm	(kPa)			
0 - 50	25.0			119			Informed Rearing Canacity (1/Pa)
50 - 100	25.0	4		119			merred bearing Capacity (Kr a)
100 - 150	16.7	(	17	160			0 50 100 150 200 250 300 350 400
150 - 200	16.7	0	17	160		0	
200 - 250	16.7	7		160		100	
250 - 300	12.5	,		198	_		
300 - 350	12.5	9		198		200	
<u> </u>	12.5			198		300	
450 - 500	12.5	8	23	198		400	
500 - 550	16.7			160	1	100	
550 - 600	16.7	0		160		500	
600 - 650	16.7	6		160		600	
650 - 700	16.7	v		160	_	70.0	
700 - 750	16.7	6	16	160		/00	
750 - 800	10.7			100		800	
850 - 900	25.0	4		119		900	
900 - 950	16.7			160	1		
950 - 1000	16.7	6		160	(u	1000	
1000 - 1050	12.5	12	26	198	mr	1100	
1050 - 1100	6.3	12		330	th (	1200	
1100 - 1150	12.5	8		198	ept	1200	
1200 1250	12.5			198	Q	1300	
1250 - 1250	16.7	8		160	1	1400	
1300 - 1350	16.7	0		160		1500	
1350 - 1400	10.0	8	29	233		1500	
1400 - 1450	8.3	13		267	_	1600	
1450 - 1500	7.1	10		299	_	1700	
1500 - 1550	6.3	17		330			
1600 - 1650	5.0		1	359		1800	
1650 - 1700	10.0	14	41	233		1900	
1700 - 1750	10.0	10		233		2000	
1750 - 1800	10.0	10		233			
1800 - 1850	6.3	-	-	330	-	2100	Inferred Bearing Canacity (50mm Intervals)
bearing capacity res	ults stated above have l der small structures, M	een inferred j .J. Stockwell.	The results a	Determination of allowable ire relative to the ground		2200	Informed Poaring Connective (300mm intervale)
conditions at the tim	e of test and will be he should be used conserv	wily influence atively IANZ	ed if significa endorsemen	int gravel fraction is present. t does not apply to these values		2300	
NZS 3604:2011, Sec assumed to be not le equal to twice the wi greater depths.	tion 3.3.7.1 (b) states th ss than 300 kPa if the r dth of the widest footin	at the ultimat number of blo g below the u	te bearing cap ws per 100m nderside of th	pacity of the foundation shall be m exceeds 5 down to a depth he proposed footing and 3 at			
H	TIELD LOG: NZ	Geotechr	ical Socie	ety Guidelines 2005 (Not l	IANZ A	ccredi	ited); Lot 297 - See Page 127 for location plan
Depth (mm)	Description						
0 to 300	Topsoil & vegetat	ion (organ	ic matter)	•			
300 to 1500 *	Grey / brown Gra Sand, fine to coar	velly SAN se; Silt, no	D with tra n-plastic.	ace of silt. Moist. Tightly pa	icked. C	Fravel, s	subangular to subrounded, maximum particle size 37.5mm;
" NZS 3604:2011, depth indicated.	section 3.3.6 requi	res a minin	um 50mm	unameter auger hole to be co	ompleted	to the d	uepth of each scala penetrometer probe. Unable to complete past the
Note:							
<ul><li>The resu</li><li>This repo</li></ul>	lts stated above an ort may not be rep	re specific roduced e	to the app xcept in fi	proximate test locations as ull.	record	ed. CTS	S accepts no liability for any extrapolated use of this data.
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Dat	e:	4 1	to 23-May-22
							CCREDITE.
Checked By:	, empurico	1					P 50
							as not accredited are



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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	<u>@veros.</u>	co.nz		Attention:	S. Cornwa	ll
Job Description	on: Wooin	g Tree Su	bdivisio	n, Cromwell				
A		-						
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 298	8 – See Page 127 for loca	tion plan	
Denth	Penetration	Blo	ows /	Inferred Allowable				
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>				
(11111)	(IIIII/DIOW)	mm	mm	(kPa)				
0 - 50	25.0	5		119		Inferred Bearing	g Capacity (k	Pa)
<u>50 - 1</u> 00	16.7	3		160				
100 - 150	16.7	7	20	160	0	) 50 100 150	200 250	300 350 400
150 - 200	12.5	/	20	198	U			
200 - 250	12.5	0		198	100			
250 - 300	12.5	ð		198				
300 - 350	12.5	10		198	200			
350 - 400	8.3	10		267	300			
400 - 450	12.5	•	20	198				
450 - 500	10.0	9	28	233	400			
500 - 550	12.5	•		198	500			
550 - 600	10.0	9		233	200			
600 - 650	12.5	•		198	600			
650 - 700	10.0	9		233	70.0			
700 - 750	25.0			119	/00			
750 - 800	25.0	4	19	119	800			
800 - 850	25.0	-	1	119				
850 - 900	12.5	6		198	900			
900 - 950	5.6			359	_ 1000			
950 - 1000	12.5	13		198	(m			
1000 - 1050	16.7			160	E 1100			
1050 - 1100	12.5	7	28	198	ų 1200			
1100 - 1150	12.5			198	1200			
1150 - 1200	12.5	8		198	<b>Q</b> 1300			
1200 1250	12.3			150	-			
1200 - 1230	9 2	9		267	1400			
1230 - 1300	0.5			207	1500			
1300 - 1350	10.0	13	35	233				
1350 - 1400	0.5		-	222	1600			
1400 - 1450	10.0	13		233	1700			
1450 - 1500	0.3			330	1700			
1500 - 1550	7.1	16		299	1800		<b>I</b>	
1550 - 1600	5.0		-	359	1000			
1000 - 1050	10.0	11	34	233	1900			
1650 - 1700	8.3			26/	2000			
1750 1990	10./	7		100				
1/50 - 1800	12.5	haan infamad	fuom Eig ?	198 Determination of allowable	2100	Inferred Bearing	Canacity (50mm In	(ale viat
bearing cupacity res	der small structures, N	J.J. Stockwell.	The results a	are relative to the ground	2200	THELLED DEAL ING	capacity (somm III	
conditions at the tin	e of test and will be he	eavily influence	ed if significa	ant gravel fraction is present.		Inferred Bearing	Capacity (300mm i	itervals)
The inferred values	should be used conser	vatively. IANZ	endorsemen	t does not apply to these values.	2300			
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states t	hat the ultima	te bearing cap	pacity of the foundation shall be				
assumed to be not le	ess than 300 kPa if the	number of blo	ws per 100m	m exceeds 5 down to a depth				
greater depths.	uun oj ine wiaest jooti	ng velow the u	naersiae of ti	ie proposea jooung ana 5 at				
I	FIELD LOG: NZ	Z Geotechi	ical Socie	ety Guidelines 2005 (Not I	ANZ Accredit	ted); Lot 298 - See Page 1	127 for location	ı plan
Depth (mm)	Description							
0 to 250	Topsoil & vegeta	tion (organ	ic matter)					
	Grev / brown Gr	avelly SAN	D with tra	nce of silt Moist Tightly no	cked Gravel s	uhangular to subrounded	maximum par	ticle size 37 5mm·
250 to 1500 *	Sand, fine to coa	rse: Silt. no	n-nlastic	ice of site moise rightly pa	cheu. Gravel, S	abangular to subroullucu	, maximum par	ucic size 57.511111,
* NZS 3604:2011.	Section 3.3.6 rean	ires a minin	num 50mm	diameter auger hole to be co	mpleted to the a	lepth of each scala penetron	neter probe. Una	ble to complete past the
depth indicated.								, p uit
Note:								
• The resu	lts stated above of	re specific	to the ann	proximate test locations as	recorded. CTS	accepts no liability for a	ny extrapolated	use of this data.
This ren	ort may not he re	produced a	xcent in fi	ull.			, apointeu	
- 1113100	may not be re	, ounced t	acepi in Ji	****				
Tested By:	K. Hipkins, C.	Pearson.	T. Shaw	& C. Fisher Date	e: 4 t	o 23-May-22		
J *		,				v		
Checked Ry.	em l.	7					CREDIN	1
CHURCH Dy.	rigna					AC	CREDITED	
								Test results indicated
								as not accordited and



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

**CTS** 

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Page 63 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros	s, <u>stephenc</u>	averos.	<u>co.nz</u>			Attention: S. Cornwall
Job Description	on: Wooi	ng Tree Su	bdivisio	n, Cromwell			
						_	
	SCA	LA PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 29	299 – See Page 127 for location plan
Depth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
	,	mm	mm	(kPa)			
0 - 50	25.0	4		119	-		Interred Bearing Capacity (kPa)
50 - 100	25.0		-	119	-		0 50 100 150 200 250 300 350
100 - 150	16.7	7	18	160		0	
150 - 200	12.5		-	198	-		
200 - 250	10.7	7		100	-	100	
250 - 300	12.5		-	198	-	200	
350 400	12.5	8		198			
<u> </u>	12.3			150		300	
450 - 500	16.7	6	22	160	1	400	
500 - 550	16.7			160			
550 - 600	10.0	- 8		233	1	500	
600 - 650	12.5			198		600	
650 - 700	10.0	9		233	1		
700 - 750	12.5	_	1	198	1	700	
750 - 800	16.7	7	24	160	1	800	
800 - 850	12.5			198	1		
850 - 900	12.5	8		198	1	900	
900 - 950	16.7	(		160		1000	
950 - 1000	16.7	0		160	Î.		
1000 - 1050	16.7	5	10	160	(m	1100	
1050 - 1100	25.0	3	10	119	th	1200	
1100 - 1150	12.5	7		198	ep		
1150 - 1200	16.7	,		160	D	1300	
1200 - 1250	25.0	4		119		1400	
1250 - 1300	25.0	-		119			
1300 - 1350	10.0	11	25	233		1500	
1350 - 1400	8.3		20	267		1600	
1400 - 1450	10.0	10		233			
1450 - 1500	10.0	10		233		1700	
1500 - 1550	7.1	13		299	-	1800	
1550 - 1600	8.3	-	-	267			
1600 - 1650	6.3	15	39	330		1900	
1650 - 1700	7.1		-	299		2000	
1750 1800	8.3	11		26/	-		
1/50 - 1800	10.0 ults stated above hav	e heen inferred	from Fig 2 _	233 Determination of allowable	-	2100	Inferred Bearing Canacity (50mm Intervals)
bearing pressure un	der small structures,	M.J. Stockwell.	The results a	re relative to the ground		2200	
conditions at the tim	e of test and will be	heavily influence	ed if significa andorsaman	nt gravel fraction is present.			Inferred Bearing Capacity (300mm intervals)
The injerreu values	snouia be usea cons	ervauvery. 17112	enuorsemen	i uoes noi uppiy io inese values.		2300	)
NZS 3604:2011, Sector	tion 3.3.7.1 (b) states	s that the ultimat	e bearing cap	pacity of the foundation shall be			
equal to twice the wi	dth of the widest foo	w number of blo nting below the u	ws per 100m nderside of th	n exceeds 5 down to a depth ne proposed footing and 3 at			
greater depths.		-					
F	TELD LOG: N	Z Geotechn	ical Socie	ty Guidelines 2005 (Not I	IANZ A	ccredi	dited); Lot 299 - See Page 127 for location plan
Depth (mm)	Description						
0 to 300	Topsoil & vege	tation (organ	ic matter)	•			
300 to 1350 *	Light brown Sa	andy GRAVE	EL with tra	ace of / minor silt. Dry. Loo	ose. Gra	vel, sul	ubangular to subrounded, maximum particle size 37.5mm;
* NZS 3604.2011	Sand, line to co	arse; Silt, no	n-plastic.	diamatar augar halo to be as	mulator	to the	a danth of anoh scala nanatromatar prohe. Unable to complete root the
depth indicated	5ecuon 5.5.0 req	uires a minin	ium somm	unameter auger noie to be co	mpieteo	i iu the i	e depin of each scala penetrometer probe. Unable to complete past the
Note.							
• The resu	lts stated above	are specific	to the apr	proximate test locations as	record	od CT	TS accents no lighility for any extrapolated use of this data
<ul> <li>This ron</li> </ul>	ns suice ubove	enroduced e	xcent in fi	and the second sec			is accepts no anomy for any extrapolated use of this data.
- Inis repu	n muy noi be i	eproduced e	acepi in Ji	****			
Tested By:	K. Hipkins, C	C. Pearson.	T. Shaw	& C. Fisher Date	e:	4	4 to 23-May-22
		/					•
Checked By:	emple	e)					
Checked By	10119-00						PCCREDITED
							Test results indicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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Page 64 of 127 Pages

Reference No: 22/1550

accreditation

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	averos.	<u>:0.nz</u>			Attention:	S. Cornw	all
Job Descripti	on: Wooing	g Tree Su	bdivisio	n, Cromwell					
	~~ -		DOLOR						
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lo	ot 301 -	See Page 127 for loca	tion plan	
Depth	Penetration	Blo	ws /	Inferred Allowable					
(mm)	(mm/blow)	100	300	Bearing Capacity					
0.50	50.0	mm	mm	(KF a)			Tu formed Dearing	Canadity ()	(D_)
0 - 50	50.0	2		68			Interred Bearing	Сарасну (к	Pa)
<u> </u>	50.0			68		0	50 100	150	200 250
150 - 200	16.7	- 4	11	160		0 +			
200 - 250	16.7			160		100			
250 - 300	25.0	5		119		100			
300 - 350	25.0	_		119		200			
350 - 400	16.7	2		160		300			
400 - 450	16.7	6	16	160					
450 - 500	16.7	U	10	160		400			
500 - 550	25.0	5		119		500			
550 - 600	16.7	-		160					
600 - 650	16.7	5		160		600			
650 - 700	25.0		-	119		700			
750 800	<u> </u>	5	16	119		800			
800 850	10./	+	1	100					
850 - 900	16.7	6		160	1	900			
900 - 950	16.7			160	1	000			
950 - 1000	16.7	6		160	(m				
1000 - 1050	16.7			160	<u> </u>	100			
1050 - 1100	16.7	6	18	160	the	200			
1100 - 1150	16.7	(		160	ebi				
1150 - 1200	16.7	0		160	<b>Q</b> 1	300		L	
1200 - 1250	12.5	7		198	1	400			
1250 - 1300	16.7	/		160					
1300 - 1350	12.5	8	23	198	1	500			
1350 - 1400	12.5	0	20	198	1	600			
1400 - 1450	12.5	8		198					
1450 - 1500	12.5	-		198	1	/00			
1500 - 1550	12.5	8		198	1	800			
1550 - 1600	12.5		-	198	1	000			
1650 1700	12.5	8	22	190	1	500			
1700 - 1750	12.3		1	160	2	000			
1750 - 1800	16.7	6		160	2	100			
<sup>1</sup> Bearing capacity res	sults stated above have l	been inferred	from Fig 2 –	Determination of allowable	2		Inferred Bearing C	apacity (50mm In	itervals)
bearing pressure un	der small structures, M	J. Stockwell.	The results a	re relative to the ground	2	200	——Inferred Bearing C	apacity (300mm i	intervals)
The inferred values	should be used conserv	atively. IANZ	ea ij signijica ' endorsemen	t does not apply to these values.	2	300		1 7 1	
N75 3604.2011 Sa	tion 3 3 7 1 (b) states th	at the ultime	a haanina aar	naits of the foundation shall be					
assumed to be not l	ess than 300 kPa if the i	unine unimat number of blo	e vearing cap ws per 100mi	n exceeds 5 down to a depth					
equal to twice the w	idth of the widest footin	g below the u	nderside of th	te proposed footing and $\overline{3}$ at					
greater aepins.	FIELD LOG: NZ	Geotechr	ical Socie	ty Guidelines 2005 (Not I	ANZ Acc	redited	: Lot 301 - See Page 1	27 for locatio	on nlan
Depth (mm)	Description	Stottell	Soul			- curred)	, stor berager	-/ ioi iocatio	- Paul
0 to 200	Topsoil & vegetat	tion (organ	ic matter)						
	Grey / brown Gre	velly SAN	D with so	ne silt. Moist. Tightly nack	ed. Grave	l. subanc	ular to subrounded m	aximum narti	cle size 37.5mm:
200 to 1250 *	Sand, fine to coar	se; Silt, no	n-plastic.		Grave	., sabang			
* NZS 3604:2011,	Section 3.3.6 requi	res a minin	num 50mm	diameter auger hole to be co	mpleted to	the dept	h of each scala penetrom	eter probe. Un	able to complete past the
depth indicated.									
Note:			-						
• The resu	its stated above a	re specific	to the app	voximate test locations as	recorded.	CTS ac	cepts no liability for a	ny extrapolate	d use of this data.
This rep	ort may not be rep	produced e	xcept in fi	ull					
Tested Rv.	K Hinkins C	Pearcon	T Shaw	& C Fisher Date	<b>.</b> .	4 to ?	3-May-??		
i csicu Dy:	K. IIIPKIIIS, C.	i cai sull,	1. Shaw	a c. risher Date		4 10 2	5-141ay-22		
Charlend Dr.	en la								
спескей Ву:	romanico	,					PCC PCC	REDITED	
									Test results indicated
									as not accredited are
									outside the scope of the laboratory's



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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Ver	ros, <u>stephenc</u>	averos.	co.nz			Attention: S. Cornwall
Job Descripti	on: Wo	oing Tree Su	ıbdivisio	n, Cromwell			
						_	
	SC	CALA PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 30	302 – See Page 127 for location plan
Depth	Penetrati	ion Blo	ws /	Inferred Allowable			
(mm)	(mm/blo	w) 100	300	Bearing Capacity <sup>1</sup>			
()	(	mm	mm	(kPa)			
0 - 50	50.0	3		68			Inferred Bearing Capacity (kPa)
50 - 100	25.0			119			0 50 100 150 200 250 200 250 400
100 - 150	50.0	- 4	9	68		0	0 50 100 150 200 250 300 350 400
150 - 200	16.7			160			
200 - 250	50.0	2		68		100	0
250 - 300	50.0			08		200	
300 - 350	25.0	- 4		119			
<u> </u>	16.7		-	119		300	
400 - 430	16.7	6	14	160		400	0
500 - 550	25.0			119			
550 - 600	25.0	- 4		119		500	0
600 - 650	25.0			119		600	0
650 - 700	16.7	5		160			
700 - 750	25.0		1	119		700	0
750 - 800	25.0	- 4	14	119		800	0
800 - 850	16.7	-	1	160		000	
850 - 900	25.0	2		119		900	
900 - 950	16.7	5		160	0	1000	10
950 - 1000	25.0	5		119	m	44.00	
1000 - 1050	12.5	8	23	198	u)	1100	
1050 - 1100	12.5	0	23	198	th	1200	0
1100 - 1150	10.0	10		233	)ep	1200	
1150 - 1200	10.0	10		233	Ι	1300	
1200 - 1250	10.0	10		233		1400	0
1250 - 1300	10.0	10	_	233		1500	
1300 - 1350	7.1	14	40	299		1200	
1350 - 1400	7.1			299		1600	10
1400 - 1450	6.3	16		330		1700	n
1450 - 1500	0.3			330		1/00	
1500 - 1550	7.1	14		299		1800	10
1600 - 1650	63		-	330		1900	10
1650 - 1700	6.3	16	44	330		22000	
1700 - 1750	6.3			330		2000	0
1750 - 1800	8.3	14		267		2100	0
<sup>1</sup> Bearing capacity res	sults stated above	have been inferred	from Fig 2 –	Determination of allowable			Inferred Bearing Capacity (50mm Intervals)
bearing pressure un	ider small structu na of tast and will	res, M.J. Stockwell.	The results of a signification of the second	are relative to the ground		2200	Inferred Bearing Capacity (300mm intervals)
The inferred values	should be used co	onservatively. IAN2	endorsemen	t does not apply to these values.		2300	
NZS 3604-2011 Sa	tion 3 3 7 1 (b) ++	ates that the ultime	te hearing on	nacity of the foundation shall be			
assumed to be not l	ess than 300 kPa	if the number of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the w greater denths	nath of the widest	footing below the u	nderside of th	he proposed footing and 3 at			
S.c	FIELD LOG	: NZ Geotechi	nical Socie	ety Guidelines 2005 (Not I	ANZ A	Accredi	edited); Lot 302 - See Page 127 for location plan
Depth (mm)	Description	210000					
0 to 200	Topsoil & ve	getation (organ	ic matter)				
200 / 1500 /	Light brown	Gravelly SAN	D with tra	ce of silt. Dry. Loose. Grave	el, suba	ngular	ar to subrounded, maximum particle size 37.5mm:
200 to 1500 *	Sand, fine to	coarse; Silt, no	on-plastic.		.,	-9	particle of the main state of
* NZS 3604:2011	, Section 3.3.6	requires a minin	num 50mm	diameter auger hole to be co	mpletee	d to the	he depth of each scala penetrometer probe. Unable to complete past the
depth indicated.							
Note:							
• The resu	ilts stated abo	ve are specific	to the app	proximate test locations as	record	ed. CT.	TS accepts no liability for any extrapolated use of this data.
• This rep	ort may not b	e reproduced e	except in f	ull.			
-	17 11	C D	T C			,	
Tested By:	K. Hipkins	, C. Pearson	T. Shaw	v & C. Fisher Date	e:	4	4 to 25-May-22
	//	//					
Checked By:	lmp	luo					CREDIN
							ACONTED



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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	s: V	/eros, <mark>s</mark>	stephenc	averos.	<u>co.nz</u>		Attention:	S. Cornwall	
Job Descripti	on: V	Vooing	g Tree Su	bdivisio	n, Cromwell				
		0011		DOLTE	DD 0170 4400 1000 7		G D 1050 1	· ,	
		SCAL	<u>A PENET</u>	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 303	– See Page 127 for locat	ion plan	
Depth	Penetr	ation	Blo	ws /	Inferred Allowable				
(mm)	(mm/l	olow)	100	300	Bearing Capacity				
		·	mm	mm	(KPa)		Informed Descript	Canadity (LDa)	
0 - 50	50	.0	2		68		Interreu bearing	Capacity (KF a)	
50 - 100	50	.0		-	68	0	50 100	150 200	250
100 - 150	50	.0	2	7	68	0 :			
150 - 200	50	.0			68				
200 - 250	50	.0	3		68	100			
250 - 300	25.	.0			119	200			
300 - 350	25.	.0	5		119			7	
350 - 400	16	.7			160	300			
400 - 450	25	.0 7	5	15	119	400			
450 - 500	10	./			100			L	
500 - 550	16	.0	5		119	500			
600 650	25	., 0			110	600			
650 - 700	16	7	5		160				
700 - 750	16	7		1	160	700			
750 - 800	25	., 0	5	14	110	800			
800 - 850	25	0			119				
850 - 900	25	0	4		119	900			
900 - 950	25	0			119	1000			
950 - 1000	25	0	4		119	(m i i i i i i i i i i i i i i i i i i i			
1000 - 1050	25	0			119	<u> </u>			
1050 - 1100	25	0	4	13	119	ų 1200			
1100 - 1150	25	0			119				
1150 - 1200	16	.7	5		160	A 1300			
1200 - 1250	16	.7	_		160	1400			
1250 - 1300	12	.5	7		198	1400			
1300 - 1350	16	.7	5	10	160	1500			
1350 - 1400	25	.0	3	10	119	1600			_
1400 - 1450	25	.0	6		119	1000			
1450 - 1500	12	.5	U		198	1700			
1500 - 1550	16	.7	6		160	1800			
1550 - 1600	16	.7	-	-	160				
1600 - 1650	10	.0	9	25	233	1900			
1050 - 1700	12	.5		-	198	2000			
1750 1800	10	. <u>v</u> 0	10		200				
<sup>1</sup> Bearing capacity res	sults stated abo	ove have h	een inferred	from Fig 2 –	233 Determination of allowable	2100	Inferred Bearing C	apacity (50mm Intervals)	
bearing pressure un	nder small stru	ctures, M.	J. Stockwell.	The results of	re relative to the ground	2200	mg c		
conditions at the tin The inferred values	ne of test and s should be use	will be hea ed conserva	ivily influence atively. IANZ	ea if significa ' endorsemen	int gravel fraction is present. t does not apply to these values.		Interred Bearing C	apacity (300mm intervals)	
N/20 2004 2023 -						2300 -	I		
NZS 3604:2011, Sec assumed to be not I	ction 3.3.7.1 (l ess than 300 k	) states th Pa if the n	at the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth				
equal to twice the w	vidth of the wid	lest footing	g below the u	nderside of th	he proposed footing and 3 at				
greater depths.	FIFIDIC	C.NZ	Geotophy	ical Soai	ty Guidalinas 2005 (Nat 1	ANZ Acondita	d). Lat 303 See Dage 1'	27 for location plan	
Depth (mm)	Descripti	on	Geoleciil	ical Socie	ny Guidennes 2005 (1901 I	AND ACCREDITE	uj, Lui 505 - See rage 1.	27 Ior location plan	
0 to 50	Topsoil &	vegetat	ion (organ	ic matter)					
50 4 1500 1	Light bro	wn Grav	velly SANI	) with tra	ce of silt. Drv. Loose. Grave	el, subangular to	subrounded, maximum n	article size 37.5mm:	
50 to 1500 *	Sand, fine	to coar	se; Silt, no	n-plastic.			,	- /	
* NZS 3604:2011 depth indicated	, Section 3.3	5.6 requi	res a minin	1 <i>um 50mm</i>	diameter auger hole to be co	mpleted to the dep	pth of each scala penetrome	eter probe. Unable to complete	past the
Note:									
• The res	ilts stated a	ahove av	e snecific	to the arr	proximate test locations as	recorded CTS	accents no liability for an	v extranolated use of this do	ita
<ul> <li>The result</li> <li>This ron</li> </ul>	ort may no	t he ren	roducod o	xcent in f	ull.			y chirupotatea use oj tias da	
- 1115100	<i>muy 1</i> 0	. <i></i>	. ounceu e	pi in J	••••				
Tested By:	K. Hipki	ns, C. I	Pearson,	T. Shaw	& C. Fisher Date	e: 4 to	23-May-22		

Checked By:

emplus	



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 67 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	tephenc	averos.	co.nz			Attention:	S. Cornwall	
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell					
	SCAL	<u>A PENET</u>	ROMET	ER (NZS 4402:1988, Test	t 6.5.2); Lot	304 -	See Page 127 for locat	ion plan	
Depth	Equivalent	Blo	ws /	Inferred Allowable					
(mm)	Penetration (mm/blow)	100	300	Bearing Capacity					
0.50	(IIIII/DIOW)	mm	mm	(кга)			Inferred Rearing	Canacity (kPa)	
0 - 50	150.0	0.7		25	-		mierrea Dearing	Capacity (KI a)	
<u> </u>	150.0		1	25	-	0	50 100 150	200 250 300	350 400
150 - 200	50.0	1.3	8	68		0			
200 - 250	16.7			160	10	00			
250 - 300	16.7	6		160					
300 - 350	16.7	7		160	20	00			
350 - 400	12.5	/		198	3(	00	└╴┖┿━━┓╎╴		
400 - 450	16.7	6	16	160	40				
450 - 500	16.7	Ů	10	160	-+(				
500 - 550	25.0	3		119	50	00 :			
550 - 600	50.0		-	68	6	00			
600 - 650	50.0	3		08	-				
700 750	23.0		1	68	70	00			
750 - 800	25.0	3	10	110	80	00			
800 - 850	25.0		1	119		-			
850 - 900	25.0	4		119	90	00	──┤──┤┡┿┓╎──		
900 - 950	25.0			119	100	00			
950 - 1000	25.0	4		119	(m				
1000 - 1050	25.0	2	14	119	<u></u>	00			
1050 - 1100	50.0	3	14	68	<b>4</b> 12	00			
1100 - 1150	16.7	7		160	)ep	:	1 4		
1150 - 1200	12.5	'		198	A 130				
1200 - 1250	16.7	7		160	14	00 :			
1250 - 1300	12.5			198	15	00			
1300 - 1350	10./	7	19	100	1.57				
1400 - 1450	16.7			158	16	00			
1450 - 1500	25.0	5		119	17	00			
1500 - 1550	8.3			267					
1550 - 1600	8.3	12		267	18	00		•	
1600 - 1650	8.3	12	40	267	19	00			
1650 - 1700	8.3	12	40	267	201				
1700 - 1750	6.3	16		330	200				
<u>1750 - 1800</u>	6.3		(	330	21	00			
bearing capacity resu bearing pressure und	ler small structures, M.	J. Stockwell.	The results a	are relative to the ground	22	00	Interred Bearing C	apacity (50mm Intervals	
conditions at the time	e of test and will be hea hould be used conserve	vily influence	ed if significa andorsaman	ant gravel fraction is present.			Inferred Bearing C	apacity (300mm interval	s)
The injerrea values s				. wes not upply to inese values.	230	00 1	<u> </u>		I
NZS 3604:2011, Secta assumed to be not les	ion 3.3.7.1 (b) states the is than 300 kPa if the n	at the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a denth					
equal to twice the wid	lth of the widest footing	g below the u	nderside of th	he proposed footing and 3 at					
greater depths.	IELD LOC · NZ	Geotechr	ical Socie	ty Guidelines 2005 (Not 1	ANZ Accr	edited)	: Lot 304 - See Page 1	27 for location nlar	1
Depth (mm)	Description	Storein	icai Socie	<i>i</i> 5 uutines 2005 (1011	an 2 Au	cuncu)	, 100004 - 500 1 agt 1.	-, for location plan	•
0 to 200	Topsoil & veget	ation (org	anic matte	er).					
200 / 1200	Brown Gravelly	SAND w	ith trace o	f/minor silt. Moist. Tightl	v packed. G	ravel. s	ubangular to subround	ed, maximum partic	ele size 37.5mm:
200 to 1300	Sand, fine to coa	arse; Silt,	non-plasti	c.				,	,
1300 to 1500 *	Grey / brown SA	AND with	trace of /	minor silt. Moist. Tightly p	acked. Sand	l; fine t	to coarse; Silt, non-plast	tic.	
* NZS 3604:2011,	Section 3.3.6 requir	res a minin	num 50mm	diameter auger hole to be co	ompleted to t	he dept	h of each scala penetrom	eter probe. Unable to	complete past the
deptn indicated.									
Note:	to stated -t		to the	monimento tont 1 ti	nacord-1 4		conto no lightitit. f.	autuan al-4-1-	fthis data
The resul     This reno	is stated above ar	e specific	to the app	proximate test locations as	recorded. (	. 15 ac	cepts no liability for an	y extrapolated use o	oj this data.
- inis repo	n muy noi ve rep	iouuceu e	лсері in Ji	****					
Tested By: I	K. Hipkins, C. I	Pearson,	T. Shaw	& C. Fisher Dat	e:	4 to 2	3-May-22		
	//						c.	CREDITE	
Checked By:	1mplus						AC	<b>*0</b>	t vasults indiasted



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#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 68 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

#### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	:	Veros,	stephenc	<u>@veros.</u>	co.nz				Attentio	n:	<b>S.</b> C	ornwa	all		
Job Description	on:	Wooing	Tree Su	bdivisio	n, Cromwell										
A		- C													
		SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 30	5 – See P	age 127 f	or loca	tion pla	ın			
Denth	Equ	ivalent	Blo	ws /	Inferred Allowable										
(mm)	Pene	etration	100	300	Bearing Capacity <sup>1</sup>										
()	(mn	n/blow)	mm	mm	(kPa)										
0 - 50	1	00.0	1		36			Inf	erred Be	earing	Capac	ity (k	Pa)		
50 - 100	1	00.0	1		36										
100 - 150	4	50.0	2	6	68		(	0 50	100	150	200	250	300	350	400
150 - 200	5	50.0	-	Ū	68		0								
200 - 250	2	25.0	3		119		100								
250 - 300	5	50.0	5		68		-								
300 - 350	2	25.0	3		119		200								
350 - 400	5	50.0	5		68		300		╘┿╖						
400 - 450	1	16.7	5	13	160		10.0		-+						
450 - 500	2	25.0		10	119	_	400								
500 - 550	1	16.7	5		160	_	500								
550 - 600	2	25.0			119				- I I						
600 - 650	2	25.0	4		119		600								
650 - 700	1	25.0	-	4	119	-	700								
700 - 750	1 2	25.0	4	13	119	4									
750 - 800		25.0	-		119	-	800								
800 - 850		16.7	5		160	-	900				_				
850 - 900	2	25.0			119	-									
900 - 950		12.5	8		198	- -	1000								
950 - 1000	_	12.5		-	198	nn	1100								
1000 - 1050		16.7	5	25	160	1 (1					_				
1050 - 1100	4	25.0			119	ptł	1200								
1100 - 1150		5.6	12		359	De	1300								
1150 - 1200		16.7		1	160										
1200 - 1250		10./	7		100	-	1400								
1250 - 1300		12.5		-	198	-	1500				Ц				
1300 - 1350		12.5	8	23	198	-	1000								
1350 - 1400		12.5			198	-	1600				_				
1400 - 1430	1	12.5	8		198	-	1700					_			
1430 - 1300	1	12.5			198	-									
1500 - 1550	1	12.5	8		198	-	1800				-				
1600 - 1650	1	167		-	150	-	1900								
1650 - 1700	1	12.5	7	24	198										
1700 - 1750	1	10.0			233		2000								
1750 - 1800	1	12.5	9		198	1	2100								
<sup>1</sup> Bearing capacity res	sults stated	above have b	een inferred	from Fig 2 –	Determination of allowable	1			— Inferred I	Bearing C	apacity (	50mm In	tervals)		
bearing pressure un	nder small s	structures, M.	J. Stockwell.	The results a	are relative to the ground		2200		Inferred H	Bearing C	apacity (;	300mm ir	itervals)		
Conditions at the fin The inferred values	should be	na will be hea used conserva	atively. IANZ	eu ij significa ' endorsemen	ini gravei fraction is present. t does not apply to these values.		2300				F				
N/76 A/6 / A011 -							2000								
NZS 3604:2011, Sec assumed to be not la	tion 3.3.7.1 ess than 30	i (b) states th 0 kPa if the n	at the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth										
equal to twice the w	idth of the	widest footing	g below the u	nderside of th	he proposed footing and 3 at										
greater depths.	TIFLDI		Contack	iaal Sagi-	ty Cuidelines 2005 (N-+1	LANZ 4	l aarad:	tod). I at	205 8	Dage 1	27 far	losette	n nlar		
Donth (mm)	Deseri-	LUG: NZ	Geotechn	ncal 50016	ay Guidennes 2005 (Not I	IANZ A	scerear	ieu); Lot	303 - See	rage I	2 / 10r	iocatio	n pian		
Deptii (IIIII)	Tara	0	·												
0 to 100	1 opsoil	& vegetat	ion (organ	ic matter)	• • • • • • • • • • • • • • • • • • •		<u> </u>							= -	
100 to 1500 *	Brown Sand, fi	Gravelly S ne to coar	SAND with se; Silt, no	trace of / n-plastic.	minor silt. Moist. Tightly p	packed.	Gravel	, subangu	lar to subi	rounde	a, maxii	num pa	article s	size 37.5	mm;
* NZS 3604:2011, depth indicated.	Section .	3.3.6 requi	res a minin	num 50mm	diameter auger hole to be co	ompletee	d to the d	depth of ea	ch scala po	enetrom	eter pro	be. Una	ble to c	omplete	past the
Note:															
• The resu	lts state	d above ar	e specific	to the ann	proximate test locations as	record	ed. CT	S accents	no liabilit	v for a	ny extra	polated	d use of	f this da	ta.
This ren	ort may	not be ren	roduced e	xcept in fi	ull.					, <b>,</b>	.,	r			
- 1113100	y	oc rep	. Juneta G	pi in Ji											
Fested By:	K. Hip	kins, C.	Pearson,	T. Shaw	w & C. Fisher Date	e:	4 1	to 23-Ma	ay-22						
·	1	11	,						-						
Checked Bv:	las	sples									CREDIS		1		
j.	1000									AC	UNEDI	ED			
													Test	roculte i	ndicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 69 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS



The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
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4 to 23-May-22

#### Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date:

**Checked By:** 

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 70 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephene	averos.	<u>co.nz</u>				Atte	ention:		S. Corn	wall		
Job Description	on: Wooing	Tree Su	bdivisio	n, Cromwell										
	ε ε			) · · -										
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); I	Lot 30	7 – See 1	Page	127 for	locatio	n plan			
		Blo	ws /	Inferred Allowable	Γ								-	
Depth	Penetration	100	200	Bearing Canacity <sup>1</sup>			In	lferr	ed Bea	ring C	apacity	(kPa)		
(mm)	(mm/blow)	100	500	(kPa)										
0 50	25.0	111111		110		(	) 10	00	200	300	400	500	600	700
<u> </u>	25.0	4		119	-	0								
50 - 100	25.0			119	-	100								
100 - 150	25.0	4	17	119	-									
150 - 200	25.0			119		200								
200 - 250	16.7	9		160	-	300								
250 - 300	8.3	-		267										
300 - 350	12.5	7		198		400								
350 - 400	16.7			160					L					
400 - 450	16.7	7	23	160		500 -								
450 - 500	12.5	,	20	198		600								
500 - 550	12.5	9		198		-								
550 - 600	10.0	,		233		700			_					
600 - 650	16.7	6		160		800				_				
650 - 700	16.7	0		160		000					_			
700 - 750	10.0	0	20	233		900								
750 - 800	12.5	9	30	198		1000								
800 - 850	8.3	1.5		267	(u	1000								
850 - 900	5.6	15		359	mn	1100								
900 - 950	5.6	10		359	1 (1									
950 - 1000	5.6	18		359	ptł	1200								
1000 - 1050	83			267	Del	1300								
1050 - 1100	33	21	59	523	T	1300								
1100 - 1150	5.0			388		1400								
1150 1200	5.0	20		388		-								
1200 1250	4.5			416		1500								
1200 - 1230	4.5	20		350		1600								
1230 - 1300	2.0		_ 02	471										
1350 - 1330	3.0	28	= 02	4/1 523		1700								
1350 - 1400	3.5			525	-	1900								
1400 - 1450 D.C. J	2.5	-		645	-	1000								
Refusal					-	1900								
<sup>1</sup> Bearing capacity res	ults stated above have b	een inferred j	from Fig 2 –	Determination of allowable		2000								
conditions at the tim	der small structures, M. e of test and will be hea	J. Stockwell. wilv influence	The results a ed if significa	ire relative to the ground int gravel fraction is present.		2000								
The inferred values	should be used conserve	atively. IANZ	endorsemen	t does not apply to these values.		2100								
N70 2(04.2011 C	den 2271(1) et et et de			and the state of the formula diameter when the state of t				Inf	ferred Bea	aring Cap	acity (50mm	Intervals)		
assumed to be not le	ss than 300 kPa if the n	umber of blo	e bearing cap ws per 100mi	m exceeds 5 down to a depth		2200 :	_	Int	ferred Bea	ring Cap	acity (300m	n intervals)		
equal to twice the wi	dth of the widest footing	g below the u	nderside of tl	he proposed footing and $\hat{3}$ at		2300				<u> </u>				
greater depths.														
H	FIELD LOG: NZ	Geotechn	ical Socie	ety Guidelines 2005 (Not I	ANZ Ac	credit	ed); Lo	t 307	- See Pa	age 127	for locat	ion plan		
Depth (mm)	Description			<b>K N</b>										
0 to 250	Tonsoil & vegetat	ion (organ	ic matter)	-										
0.00 100	Brown Silty Sand	v GRAVE	L Moist	Tightly nacked Gravel cut	hangular	to sub	rounded	l mor	rimum r	article	size 19 Am	m. Sand	fine to c	oarse
250 to 1500	Silt. non-nlastic	J GRAVE	L. MIUISL	ingnuy packeu. Gravel, sui	Jangulai	to sub	iounutu	, ma	sinninn h		312C 17.0II	ini, Gailu,	inc to t	oarse,
* NZS 3604:2011	Section 3.3.6 requir	res a minin	um 50mm	diameter auger hole to be co	omnleted i	to the o	lenth of e	ach s	cala nen	etromete	er probe.			
Note:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				p.c.cu i				pen					
The more	Its stated about	a manic -	to the are-	novimata tast location	unaced -	I CTO	a	ne l	abilit	for and	auturn al-	tad usa -	f this day	a
• Ine resu	us statea adove al	e specific	w the app	vroximate test locations as	recorded	<i>i</i> . CIS	accepts	no li	аошту ј	or any	extrapola	iea use oj	inis dai	<i>a</i> .

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Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

Checked By:

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 71 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc	@veros.	<u>co.nz</u>				At	tenti	on:		S. Cori	nwall		
Job Descriptio	on: Wooing	Tree Su	ıbdivisio	n, Cromwell											
								-							
	SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lo	ot 308	s – See	e Pag	e 127	for le	ocatio	n plan			
Depth	Penetration	Blo	ws /	Inferred Allowable											
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			]	Infer	red I	Beari	ng Ca	pacity	(kPa)		
. ,	· ,	mm	mm	(kPa)		0		100	20	0	200	40.0	500	60.0	70.0
0 - 50	50.0	2		68		0 +		100				400	500		
50 - 100	50.0	_		68		1									
100 - 150	25.0	6	14	119	-	100									
150 - 200	12.5		-	198	-	200									
200 - 250	16.7	6		160											
250 - 300	16.7			160		300		1	1						
300 - 350	16.7	6		160		400									
350 - 400	16.7		-	160											
400 - 450	25.0	4	17	119	-	500									
450 - 500	25.0		-	119	-	600									
500 - 550	10./	7		100	1	700			ŀ						
550 - 600	12.5			198		/00									
650 700	12.3	9		233		800									
700 750	16.7		-	160		000									
750 - 800	16.7	6	23	160		900									
800 - 850	12.5		-	100	$\overline{}^{1}$	1000			_						
850 - 900	12.5	8		198	un 1	1100									
900 - 950	16.7			160	u) i										
950 - 1000	12.5	7		198	pth _	1200									
1000 - 1050	16.7			160	Del	1300									
1050 - 1100	10.0	8	25	233											
1100 - 1150	10.0			233	1	1400		-		[					
1150 - 1200	10.0	10		233	1	1500		_							
1200 - 1250	8.3			267											
1250 - 1300	10.0	11		233	1	1600									
1300 - 1350	10.0	12	40	233	1	1700		_							
1350 - 1400	7.1	12	49	299		-									
1400 - 1450	8.3	26		267	1	1800									
1450 - 1500	2.5	20		645	1	1900		_							
Refusal						2000									
' Bearing capacity resu	ults stated above have b der small structures M	een inferred J 1 Stockwell	from Fig 2 – The results i	Determination of allowable	4	-000									
conditions at the time	e of test and will be hea	vily influence	ed if significa	int gravel fraction is present.	2	2100			n former	Doart	ng Car a	city (50mm	Intoracia	1	
The inferred values s	should be used conserva	tively. IANZ	endorsemen	t does not apply to these values.	2	2200	-		uterrec	Deal.1	ng capa	city (Somn	a antervals)		
NZS 3604:2011, Sect	tion 3.3.7.1 (b) states the	at the ultimat	e bearing ca	pacity of the foundation shall be			L •	1	nferred	l Beari	ng Capa	city (300m	m intervals	)	
assumed to be not les	ss than 300 kPa if the n	umber of blo	ws per 100m ndarsida of t	m exceeds 5 down to a depth	2	2300 1		I	l.		l				
greater depths.	ain oj ine wiaesi jooling	y below the u	nuersiue of u	ie proposeu jooting und 5 ui											
F	TELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not l	ANZ Acc	credit	ed); L	ot 30	8 - Se	e Pag	ge 127	for loca	ation pla	n	
Depth (mm)	Description														
0 to 150	Topsoil & vegetati	ion (organ	ic matter)	•											
150 to 1500	Brown Silty Sandy	GRAVE	L. Dry. Lo	oose. Gravel, subangular to	subround	led, m	aximu	m pa	rticle	size 1	9.0mn	ı; Sand,	fine to c	oarse;	
130 10 1300	Silt, non-plastic.		-	-				-							
* NZS 3604:2011, J	Section 3.3.6 requir	es a minin	1 <i>um 50mm</i>	diameter auger hole to be co	ompleted to	the d	epth of	<sup>r</sup> each	scala j	penet	romete.	r probe.			
Note:															
• The resul	lts stated above ar	e specific	to the app	proximate test locations as	recorded.	CTS	accep	ts no	liabil	ity fo	r any e	extrapol	ated use	of this d	ata.

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Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

Checked By:

emplus



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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 72 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	@veros.	<u>co.nz</u>		Att	ention:	S. Cornwa	all		
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell							
A				•							
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 309	9 – See Page	127 for locat	ion plan			
Denth	Equivalent	Blo	ws /	Inferred Allowable							
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>		Inferr	ed Bearing	Capacity (kl	Pa)		
(mm)	(mm/blow)	mm	mm	(kPa)							
0 - 50	100.0			36	0	100	200 300	400	500 0	500	700
50 - 100	100.0	1		36							
100 - 150	25.0	-	10	119	100						_
150 - 200	16.7	5	10	160			ן ו				
200 - 250	25.0			119	200						
250 - 300	25.0	4		119	300	<b>  </b>	•				
300 - 350	25.0			119	400						
350 - 400	25.0	4		119	400						
400 - 450	16.7	-	10	160	500						
450 - 500	12.5		19	198	600						
500 - 550	12.5	0		198	000						
550 - 600	12.5	ð		198	700					_	_
600 - 650	8.3	12		267							
650 - 700	8.3	12		267	800						_
700 - 750	12.5	0	20	198	900						
750 - 800	12.5	ð	30	198	1000						
800 - 850	12.5	10		198	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>						_
850 - 900	8.3	10		267	E 1100						
900 - 950	12.5	0		198	ų ir i						
950 - 1000	10.0	,		233	Dd 1200						_
1000 - 1050	12.5	10	20	198	A 1300			_			
1050 - 1100	8.3	10	50	267				-			
1100 - 1150	7.1	11		299	1400						_
1150 - 1200	12.5	11		198	1500						_
1200 - 1250	12.5	11		198	1.00						
1250 - 1300	7.1			299	1000						
1300 - 1350	5.6	16	53	359	1700						
1350 - 1400	7.1	10		299	1000						
1400 - 1450	8.3	26		267	1800						
1450 - 1500	2.5			645	1900						
Refusal		· · · · · · · · · · · · · · · · · · ·	Gum Etc 2		2000						
bearing capacity resu bearing pressure und	lits statea above nave b ler small structures. M.	een inferrea j J. Stockwell.	The results a	Determination of allowable we relative to the ground	2000						
conditions at the time	e of test and will be hea	vily influence	ed if significa	nt gravel fraction is present.	2100						
The inferred values s	hould be used conserve	tively. IANZ	endorsemen	t does not apply to these values.	2200	In	ferred Bearing Ca	apacity (50mm Int	tervals)		
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states th	at the ultimat	te bearing cap	oacity of the foundation shall be	2200	—_In	ferred Bearing Ca	apacity (300mm in	tervals)		
assumed to be not les	ss than 300 kPa if the n	umber of blo	ws per 100m	n exceeds 5 down to a depth	2300 ±						
greater depths.	un oj ine widesi jooling	g below the u	naersiae oj u	ie proposeu jooung and 5 ai							
F	IELD LOG: NZ	Geotechn	nical Socie	ty Guidelines 2005 (Not l	ANZ Accredit	ed); Lot 309	- See Page 1	27 for locatio	n plan		
Depth (mm)	Description										
0 to 100	Topsoil & vegetat	ion (organ	ic matter)								
100 to 1500	Brown Silty Sand Silt, non-plastic	y GRAVE	L. Dry. Lo	oose. Gravel, subangular to	subrounded, m	naximum par	ticle size 19.01	nm; Sand, fin	e to coars	se;	
* NZS 3604:2011,	Section 3.3.6 requi	res a minin	num 50mm	diameter auger hole to be co	mpleted to the d	lepth of each s	scala penetrom	eter probe.			
Note:											I
• The resul	ts stated above ar	e specific	to the app	proximate test locations as	recorded. CTS	accepts no l	liability for an	y extrapolated	d use of t	this data	1.

• This report may not be reproduced except in full.

Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

Checked By:

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 73 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc	averos.	<u>co.nz</u>			Attention:	S. Cornwall
Job Descriptio	on: Wooing	Tree Su	bdivisio	n, Cromwell				
· · · · · · · · · · · · · · · · · · ·								
	SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 31	0 – See Page 127 for locat	ion plan
Denth	Demotion	Blo	ws /	Inferred Allowable			Informed Desping	Capacity (1/Da)
Depth	Penetration	100	300	Bearing Capacity 1			Interred Bearing	Capacity (kra)
(mm)	(mm/blow)	mm	mm	(kPa)		(	0 100 200 300	400 500 600 700
0 - 50	50.0	2		68		0 :		
50 - 100	25.0	3		119		100		
100 - 150	50.0		•	68		100		
150 - 200	16.7	4	20	160		200		
200 - 250	8.3	10		267		300		
250 - 300	7.1	13		299		500		
300 - 350	8.3	10		267		400		
350 - 400	12.5	10		198	1	500		
400 - 450	10.0	10	27	233	1			
450 - 500	10.0	10	27	233	1	600		
500 - 550	16.7	7		160	1	700		
550 - 600	12.5			198	1			
600 - 650	10.0	10		233		800		
650 - 700	10.0	10		233		900		
700 - 750	7.1	10	40	299				
750 - 800	4.2	19	42	444	(u	1000		
800 - 850	8.3	12		267	mr	1100		
850 - 900	7.1	15		299	h (	1200		
900 - 950	7.1	15		299	pt	1200		
950 - 1000	6.3	15	<b>=</b> 70	330	De	1300		
1000 - 1050	2.5	-		645		1400		
Refusal						1400		
						1500		
						1600		
						1000		
<sup>1</sup> Bearing capacity resu	ilts stated above have b	een inferred	from Fig 2 –	Determination of allowable		1700		
bearing pressure und	ler small structures, M.	J. Stockwell.	The results a	re relative to the ground		1800		
conditions at the time The inferred values s	e of test and will be hea should be used conserva	vily influence tively, IANZ	ed if significa ' endorsemen	nt gravel fraction is present. t does not apply to these values.				
						1900		
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states the	tt the ultimat	e bearing cap ws par 100m	acity of the foundation shall be n acceads 5 down to a depth		2000		
equal to twice the wi	dth of the widest footing	below the u	nderside of th	e proposed footing and 3 at				
greater depths.						2100	Inferred Bearing Ca	apacity (50mm Intervals)
						2200		
						2200	Interreu Bearing Ca	apacity (soomin intervais)
						2300		
F	TELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredi	ted); Lot 310 - See Page 12	27 for location plan
Depth (mm)	Description							•
0 to 100	Topsoil & vegetati	ion (organ	ic matter)					
	Light brown Sand	v GRAVE	L with mi	nor silt. Drv. Loose. Grave	el, suban	gular f	o subrounded, maximum n	article size 37.5mm;
100 to 1450	Sand, fine to coars	se; Silt, no	n-plastic.	nor shu Dişi Looser Gruve	.,	5	o subiounicu, musimum p	
* NZS 3604:2011,	Section 3.3.6 requir	es a minin	num 50mm	diameter auger hole to be co	ompleted	to the e	lepth of each scala penetrome	eter probe.
Note:								
• The resul	ts stated above ar	e specific	to the app	roximate test locations as	recorde	ed. CTS	S accepts no liability for an	y extrapolated use of this data.
• This repo	ort may not be rep	roduced e	xcept in fi	ıll.				
1	· · · · · · · · · · · · · · · · · · ·		. ,					

Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher

emplus

Checked By:

CCREDITED TESTING LABORATOR Nº 434

4 to 23-May-22

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

Date:

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand
 P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz

Page 74 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	averos.	co.nz		Attention:	S. Cornwall
Job Description	on: Wooing	Tree Su	ıbdivisio	n, Cromwell			
			DOLTE	ED 0170 4400 1000 -			· · ·
	SCAL	A PENET	KOMET	ER (NZS 4402:1988, Test	: 6.5.2); Lot 311 – S	See Page 127 for locat	tion plan
Depth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity			
0.50	50.0	mm	mm	(кга)			
0 - 50	50.0	3		08	4	Interred Bearing	Capacity (kPa)
50 - 100	25.0	ł	1	119	0	50 100 150	200 250 300 350 400
150 - 200	25.0	4	22	119	0		
200 - 250	63			330	100		
250 - 300	7.1	15		299	100		
300 - 350	5.6			359	200		
350 - 400	6.3	17		330	300		
400 - 450	16.7	(	20	160			
450 - 500	16.7	0	28	160	400		
500 - 550	25.0	5		119	500		
550 - 600	16.7	5		160			
600 - 650	12.5	8		198	600		
650 - 700	12.5	0	_	198	700		
700 - 750	12.5	8	24	198			
750 - 800	12.5	-		198	800		
800 - 850	12.5	8		198	900		
850 - 900	12.5			198			
900 - 950	12.5	8		198	Î 1000		
950 - 1000	12.5			190	<b>H</b> 1100		
1000 - 1050	25.0	7	19	233	<b>h</b>		
1100 - 1150	25.0		-	119	1200 j		
1150 - 1200	25.0	4		119	<b>Õ</b> 1300		
1200 - 1250	16.7			160	1400		
1250 - 1300	25.0	5		119	1400		
1300 - 1350	12.5	0		198	1500		
1350 - 1400	12.5	8	25	198	1600		
1400 - 1450	8.3	12	1	267	1000		
1450 - 1500	8.3	12		267	1700		
1500 - 1550	7.1	13		299	1800		
1550 - 1600	8.3	15		267			
1600 - 1650	10.0	10	32	233	1900		
1650 - 1700	10.0			233	2000		
1700 - 1750	12.5	9		198	2100		
1/50 - 1800	10.0	een inforrod	from Fig ? _	233 Determination of allowable	2100	———Inferred Bearing C	apacity (50mm Intervals)
bearing pressure un	der small structures, M.	J. Stockwell.	The results a	are relative to the ground	2200	Inferred Bearing C	anacity (300mm intervals)
conditions at the tin The inferred values	ie of test and will be hea should be used conserv-	wily influence atively 14N7	ed if significa ' endorsemen	ant gravel fraction is present. t does not apply to these values	2300		
The injerreu vulues	snoutu oc useti conservi	very. 1/1/VZ	chuoisemen	i aces not apply to these values.	2300		
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states th	at the ultimat	e bearing cap ws per 100	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the w	idth of the widest footing	g below the u	nderside of th	he proposed footing and 3 at			
greater depths.		0 1	. 10 .	4 0 11 P 0008 01 13		T ( )11 0 B 4	
Donth ()	PIELD LOG: NZ	Geotechn	iical Socie	ety Guidelines 2005 (Not l	ANZ Accredited);	; Lot 311 - See Page 1	27 for location plan
Depth (mm)	Description	·					
0 to 50	1 opsoil & vegetat	ion (organ	ic matter)				27 Farmer Care J. Care 4
50 to 1600 *	Light brown Grav	velly Silty	SAND. Dr	y. Loose. Gravel, subangul	ar to subrounded, n	naximum particle size	57.5mm; Sand, fine to coarse;
* NZS 3604:2011.	Section 3.3.6 reaning	res a minin	um 50mm	diameter auger hole to be co	mpleted to the denth	of each scala nenetrom	eter probe. Unable to complete past the
depth indicated.				and the second s	,		
Note:							
• The resu	lts stated above ar	e specific	to the app	proximate test locations as	recorded. CTS acc	epts no liability for an	y extrapolated use of this data.
• This repo	ort may not be rep	roduced e	xcept in f	ull.		••	_ *
	**	D		a ci Et :			
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	v & C. Fisher Date	e: 4 to 23	3-May-22	
Checked By:	lompuluo	1				_0	CREDITED
						P-	<b>v</b>



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 75 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	tephenc	@veros.	<u>20.nz</u>		Attention:	S. Cornw	all
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 312 -	- See Page 127 for locat	ion plan	
Denth	Penetration	Blo	ows /	Inferred Allowable				
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>				
()	()	mm	mm	(kPa)				
0 - 50	25.0	4		119			~	
50 - 100	25.0			119		Inferred Bearing	Capacity (k	Pa)
100 - 150	25.0	7	20	119	0	50 100 150	200 250	300 350 400
150 - 200	10.0		-	233	0 +	····		
200 - 250	10.0	9		233	100			
250 - 300	12.5			198	100			
300 - 350	8.3	12		267	200			
350 - 400	8.3		_	26/	300			
400 - 450	10.0	12	30	233				
430 - 300	16.7			160	400			
550 600	16.7	6		160	500			
600 650	12.5			100				
650 - 700	12.5	8		198	600			
700 - 750	12.5		1	198	700			
750 - 800	12.5	8	31	198	000			
800 - 850	10.0		1	233	800			
850 - 900	5.0	15		388	900			
900 - 950	12.5			198	1000			
950 - 1000	25.0	6		119	(m i			
1000 - 1050	12.5	_		198	<u> </u>			
1050 - 1100	16.7	7	17	160	· 1200			
1100 - 1150	25.0			119	ebi			
1150 - 1200	25.0	4		119	<b>A</b> 1300			
1200 - 1250	25.0			119	1400			
1250 - 1300	25.0	4		119	1500			
1300 - 1350	12.5	0	10	198	1500			
1350 - 1400	12.5	8	18	198	1600		_	
1400 - 1450	16.7	(		160	1700			
1450 - 1500	16.7	0		160	1/00			
1500 - 1550	25.0	-		119	1800			
1550 - 1600	16.7	5		160	1000			
1600 - 1650	12.5	6	15	198	1900			
1650 - 1700	25.0	0	15	119	2000			
1700 - 1750	25.0	- 1		119	2100			
1750 - 1800	25.0	-		119		Inferred Bearing Ca	apacity (50mm In	tervals)
<sup>1</sup> Bearing capacity resu	Its stated above have b	een inferred	from Fig 2 –	Determination of allowable	2200	Inferred Bearing Ca	apacity (300mm i	ntervals)
conditions at the time	of test and will be hea	J. Slockwell. vily influence	ed if significa	nt gravel fraction is present.	2300			
The inferred values s	hould be used conserve	tively. IANZ	endorsemen	t does not apply to these values.				
NZS 3604:2011, Secti	on 3.3.7.1 (b) states the	at the ultimat	te bearing cap	pacity of the foundation shall be				
assumed to be not les	s than 300 kPa if the n	umber of blo	ws per 100m	n exceeds 5 down to a depth				
equal to twice the wid greater denths.	th of the widest footing	g below the u	nderside of th	te proposed footing and 3 at				
F	IELD LOG: NZ	Geotechn	nical Socie	ty Guidelines 2005 (Not l	ANZ Accredited	I); Lot 312 - See Page 12	27 for locatio	n plan
Depth (mm)	Description			-		··· • • •		-
0 to 150	Topsoil & veget	ation (org	anic matte	er).				
150 / 1000	Brown Gravelly	SAND wi	ith minor s	silt. Dry. Tightly packed. G	ravel, subangular	r to subrounded. maximi	ım particle siz	xe 37.5mm;
150 to 1200	Sand, fine to coa	arse; Silt,	non-plasti	c			r	,
1200 to 1500 *	Light grey SAN	D with tra	ace of / mir	or silt. Dry. Loose. Sand, f	ine to coarse; Silt	, non-plastic.		
* NZS 3604:2011. S	Section 3.3.6 requir	res a minin	num 50mm	diameter auger hole to be co	ompleted to the dep	oth of each scala penetrom	eter probe. Una	able to complete past the
depth indicated.	1			5	-		-	
Note:								
• The result	ts stated above ar	e specific	to the app	proximate test locations as	recorded. CTS a	ccepts no liability for an	y extrapolate	d use of this data.
• This report	rt may not be rep	roduced e	xcept in fi	ull.			-	-
Tested By: F	K. Hipkins, C. 1	Pearson,	T. Shaw	& C. Fisher Date	e: 4 to	23-May-22		
	//					- 01	REDITA	
Checked By:	emplus					ACC	ED	
	-							Test results indicated
								outside the scope of the

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Page 76 of 127 Pages

Reference No: 22/1550

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Date: 26 May 2022

## TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, s	tephenc	averos.	<u>co.nz</u>			Attention:	S. Cornwa	11
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell					
						_			
	SCAL	A PENET	ROMETI	ER (NZS 4402:1988, Test	6.5.2);	Lot 31.	3 – See Page 127 for locat	ion plan	
Denth	Equivalent	Blo	ws /	Inferred Allowable					
(mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>					
()	(mm/blow)	mm	mm	(kPa)					
0 - 50	100.0	1		36					
50 - 100	100.0	1		36			Inferred Bearing	Capacity (kl	Pa)
100 - 150	16.7	0	10	160			. 50 100 150	200 250	200 250 400
150 - 200	10.0	ð	19	233		0 +	5 50 100 150	200 250	500 550 400
200 - 250	10.0	10		233					
250 - 300	10.0	10		233	1	100			
300 - 350	16.7			160		200			
350 - 400	16.7	6		160		200			
400 - 450	12.5	_		198	1	300			
450 - 500	16.7	7	22	160		100			
500 - 550	12.5			198		400			
550 - 600	10.0	9		233		500		4	
600 - 650	16.7			160		600			
650 - 700	12.5	7		198	1	000		_	
700 - 750	12.5			108	1	700			
750 800	14.3	7	20	170	1	-			
800 850	10./			100	1	800			
850 000	16.7	6		160	-	900			
000 050	10.7			100	-	1000			
900 - 930	12.5	8		190	(u	1000			
950 - 1000	12.5			198	mr	1100			
1000 - 1050	12.5	7	20	198	1 ()				
1050 - 1100	16.7			160	ptl	1200			
1100 - 1150	25.0	5		119	De	1300			
1150 - 1200	16.7			160				4	
1200 - 1250	16.7	5		160		1400			
1250 - 1300	25.0	-		119	-	1500			
1300 - 1350	10.0	12	31	233				r <mark>h</mark> ired	
1350 - 1400	7.1		•••	299		1600			
1400 - 1450	8.3	14		267		1700			
1450 - 1500	6.3			330		1,000			
1500 - 1550	8.3	11		267		1800			
1550 - 1600	10.0	11		233		1000			
1600 - 1650	10.0	10	21	233		1900			
1650 - 1700	10.0	10	51	233		2000			
1700 - 1750	10.0	10		233		2100			
1750 - 1800	10.0	10		233		2100	Inferred Bearing C	apacity (50mm Int	ervals)
<sup>1</sup> Bearing capacity resu	ilts stated above have b	een inferred j	from Fig 2 –	Determination of allowable		2200	Inferred Bearing C	anacity (300mm in	torvale)
bearing pressure una	ler small structures, M. a of test and will be bee	J. Stockwell. vilv influence	The results and if signification	tre relative to the ground		2200	Interred Bearing C	apacity (50011111 III	tervais)
The inferred values s	hould be used conserve	tively. IANZ	endorsemen	t does not apply to these values.		2300 -			
N70 2404 2011 G									
NZS 3604:2011, Sect assumed to be not les	ion 3.3.7.1 (b) states the is than 300 kPa if the n	ut the ultimat umber of blo	e bearing cap ws per 100mi	pacity of the foundation shall be m exceeds 5 down to a depth					
equal to twice the wid	th of the widest footing	g below the u	nderside of th	he proposed footing and 3 at					
greater depths.	ELDIOG NZ	<u> </u>	. 10 .				( )) I ( )10 ( ) ) ( )	27.6 1	1
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	IANZ A	ccredit	teu); Lot 313 - See Page 1	2 / for location	pian
Depth (mm)	Description								
0 to 200	Topsoil & vegetat	ion (organ	ic matter)	•					
200 to 1500 *	Brown Gravelly S	AND with	minor silt	t. Dry. Tightly packed. Gra	vel, sub	angulai	r to subrounded, maximum	particle size 3	7.5mm;
	Sand, fine to coars	se; Silt, no	n-plastic.		_				-
* NZS 3604:2011, donth indicated	Section 3.3.6 requir	es a minim	um 50mm	diameter auger hole to be co	mpleted	to the a	lepth of each scala penetrom	eter probe. Unal	ne to complete past the
aepin maicated.									
Note:									
• The resul	ts stated above ar	e specific	to the app	proximate test locations as	recorde	ed. CTS	accepts no liability for an	y extrapolated	use of this data.
<ul> <li>This repo</li> </ul>	rt may not be rep	roduced e.	xcept in fi	ull.					
Tested D		D	TO	OCELLE D		4.	- 22 Ma - 22		
rested By:	K. Hipkins, C.	rearson,	1. Shaw	a C. Fisher Date	e:	4 t	to 25-May-22		
Checked By:	emplus							RED	1
-							AC	TED	1
									Test results indicated
							-		as not accredited are

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Page 77 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

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TESTING LABORATO

Nº 434

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	@veros.	<u>co.nz</u>			Attention: S. Cornwall
Job Descriptio	n: Wooing	g Tree Su	bdivisio	n, Cromwell			
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 31	14 – See Page 127 for location plan
Denth	Equivalent	Blo	ws /	Inferred Allowable			
(mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>			
(IIIII)	(mm/blow)	mm	mm	(kPa)			
0 - 50	100.0	1		36			Informed Dogwing Consolity (1/Da)
50 - 100	100.0	1		36			interred bearing Capacity (Kra)
100 - 150	50.0	2		68			0 50 100 150 200 250 300 350
150 - 200	50.0	2	ð	68		0	
200 - 250	16.7	-		160		100	
250 - 300	25.0	5		119		100	
300 - 350	16.7	_		160		200	
350 - 400	12.5	7		198			
400 - 450	16.7	_		160		300	
450 - 500	12.5	7	18	198		400	
500 - 550	50.0			68			
550 - 600	167	- 4		160		500	
600 - 650	50.0			68		600	
650 - 700	25.0	3		110	1	000	
700 750	50.0	-	1	60	1	700	
750 000	25.0	3	6.3	110	1	000	
/50 - 800	25.0		-	119	-	800	
800 - 850	300.0	0.33		14		900	
850 - 900	300.0			14	-		
900 - 950	300.0	0.33		14		1000	
950 - 1000	300.0			14	un	1100	
1000 - 1050	300.0	0.33	37	14	(D	1100	
1050 - 1100	300.0	0.55	5.7	14	oth	1200	
1100 - 1150	50.0	2		68	)ep	1000	
1150 - 1200	25.0	3		119	Π	1300	
1200 - 1250	12.5	0		198		1400	
1250 - 1300	12.5	ð		198			
1300 - 1350	12.5		1	198		1500	
1350 - 1400	12.5	8	27	198		1600	
1400 - 1450	10.0			233		1000	
1450 - 1500	83	11		267		1700	
1500 - 1550	10.0			207		1000	
1550 1600	83	11		255		1800	
1600 1650	0.J 9.2			267		1900	
1650 1700	0.5 9 2	12	38	267			
1030 - 1700	0.5		-	207		2000	
1750 1900	0.3	15		330	-	2100	
1/50 - 1800	/.l	an infamad	fuer Eig 2	299 Determination of allowable			Inferred Bearing Capacity (50mm Intervals)
bearing capacity resu bearing pressure und	ler small structures, M	J. Stockwell.	The results of	re relative to the ground		2200	Inferred Bearing Canacity (300mm intervals)
conditions at the time	of test and will be hea	wily influence	ed if significa	int gravel fraction is present.		2200	
The inferred values s	hould be used conserv	atively. IANZ	endorsemen	t does not apply to these values.		2300	
NZS 3604:2011, Secti	ion 3.3.7.1 (b) states th	at the ultimat	e bearing ca	pacity of the foundation shall be			
assumed to be not les	s than 300 kPa if the r	umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the wid	tth of the widest footin	g below the u	nderside of ti	ne proposed footing and 3 at			
Sreater acpins.	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not 1	ANZ A	ccredi	lited): Lot 314 - See Page 127 for location nlan
Denth (mm)	Description	Scotten					
0 to 100	Topsoil & war	tation (are	onio mott.	) )			
0 10 100	Topson & vege	ation (org	AND	ы). р	<u></u>		
100 to 1300	Light grey / bro	own Silty S	AND with	minor gravel. Dry. Loose.	Gravel	, suban	agular to subrounded, maximum particle size 26.5mm;
	Sand, fine to co	arse; Silt,	non-plasti	U. AND Moist Tiability as -1	d Cro	al cont	angular to subrounded maximum particle size 27 5-
1300 to 1500 *	Sand fine to co	own Grave	ny Silty S. non-plass	arab. moist. rightly packe	u. Grav	ci, suda	angunar to subrounded, maximum particle size 37.5mm;
* NZS 3604-2011	Sand, nine to co	aist, Sill, rec g minin	1011-p1880 1111 50mm	diameter auger hole to be ea	mnlotor	to the	denth of each scala nenetrometer probe. Unable to complete past th
denth indicated	ллин э.э.ө гедин	сэ а ШШШ	iam Jomm	unanteter auger note to De Co	mpiereo	w me	acpen of cach scala penetrometer prove. Unable to complete past the
Nota:							
ivote:	44-4-3-1		4- 41-			.1.00	
• The result	is statea above ai	e specific	to the app	voximate test locations as	record	ea. CT	s accepts no hability for any extrapolated use of this data.
This repo	rt may not be rep	roduced e	xcept in f	ull.			
Footod D	Z Himbing C	Deerse	T Cha	C Fisher Det		4	to 22 May 22
i esteu By: P	x. hipkins, C.	rearson,	1. Snaw	a C. risner Date	e:	4	CREDIN
	//						PCS ED
Checked By:	1mplus	1					Test results indicated
•							as not accredited are
							outside the scope of the

Page 78 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

**Central Testing Services** 

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz



The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
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Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

Checked By:

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

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Reference No: 22/1550

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	tephenc	averos.	<u>co.nz</u>				At	tention:		S. Corn	wall		
Job Description	n: Wooing	Tree Su	bdivisio	n, Cromwell										
				,										
	SCALA	A PENET	ROMETI	ER (NZS 4402:1988, Test	6.5.2);	Lot 31	6 – Se	e Pag	e 127 for	locatio	n plan			
Denth	D	Blo	ws /	Inferred Allowable				Infon	and Doo	uina C	maaitr	(l-Da)		
Depth (mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>				inter	гео Беа	ring Ca	apacity	(KPa)		
(mm)	(mm/biow)	mm	mm	(kPa)		0	)	100	200	300	400	500	600	700
0 - 50	25.0	2		119		0 ;								
50 - 100	50.0	3		68		100	l l							
100 - 150	50.0	2	14	68		100								
150 - 200	50.0	2	14	68		200								
200 - 250	10.0	0		233		200								
250 - 300	12.5	,		198		300								
300 - 350	7.1	15		299		400		_		L				
350 - 400	6.3	15		330		500								
400 - 450	5.6	16	55	359		500								
450 - 500	7.1	10	00	299		600	_	_					_	
500 - 550	6.3	24		330		700						L		
550 - 600	3.1			548	-	/00 :								
600 - 650	3.3	35	110	523		800								
650 - 700	2.5		= 110	645	-	000								
700 - 750	2.5	-		645	-	500								
Refusal						1000								
					nm	1100								
					1 (L									
					pth	1200								
					Del	1300								
						1400		-						
<sup>1</sup> Reasing congritures	te statad aboua hava b	aan informad	fuom Fig 2	Determination of allowable		1500								
bearing pressure under	er small structures, M.	J. Stockwell.	The results a	re relative to the ground		-								
conditions at the time	of test and will be hea	vily influence	ed if significa	nt gravel fraction is present.		1600								
The injerrea values sh	iouia de usea conserva	uively. IANZ	enuorsemeni	aves not apply to these values.		1700								
NZS 3604:2011, Sectio	on 3.3.7.1 (b) states the	at the ultimat	e bearing cap	acity of the foundation shall be		-								
assumed to be not less equal to twice the widt	than 300 kPa if the n th of the widest footing	umber of blo g below the u	ws per 100m nderside of th	n exceeds 5 down to a depth he proposed footing and 3 at		1800								
greater depths.	, , ,	,	2			1900								
						-								
						2000								
						2100								
								I	nferred Bea	ring Capa	city (50mn	1 Intervals)		
						2200		I	nferred Bea	ring Capa	city (300m	m intervals)	)	
						2300 ±	-							
		~												
FI FI	ELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not l	IANZ A	ccredit	ed); I	.ot 31	6 - See P	age 127	for loca	tion plan	<u> </u>	
Depth (mm)	Description													
0 to 100 T	opsoil & vegetati	ion (organ	ic matter).											
100 to 1500 B	Brown Gravelly S Silt, non-plastic.	ilty SAND	. Moist. Ti	ightly packed. Gravel, sub	angular	to subr	ounde	d, ma	kimum pa	article si	ze 53.0m	m; Sand,	fine to c	oarse;
* NZS 3604:2011, S	Section 3.3.6 requir	res a minin	num 50mm	diameter auger hole to be co	ompletea	to the a	lepth o	f each	scala pene	etromete	r probe.			
Note:														
• The result	's stated above ar	e specific	to the app	roximate test locations as	record	ed. CTS	accep	ots no	liability f	for any o	extrapolo	ited use o	of this da	ıta.

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Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date:

Checked By:

emplus



4 to 23-May-22

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P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS



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Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

Checked By:

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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS



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#### Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

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Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

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Reference No: 22/1550

outside the scope of the

laboratory's accreditation

TESTING LABORATO

Nº 434

Date: 26 May 2022

# <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

<b>Client Details</b>	: Vero	s, <u>stephenc</u>	averos.	co.nz			Attention:	S. Cornwa	all
Job Description	on: Woo	ing Tree Su	bdivisio	n, Cromwell					
	SC	ALA PENET	ROMET	ER (NZS 4402:1988. Test	6.5.2): Lot	319 -	See Page 127 for locat	ion plan	
		Blo	ws /	Inferred Allowable	,		······································		
Deptn (mm)	(mm/blow	n 100	300	Bearing Capacity <sup>1</sup>					
()	(1111)/010/0	/ mm	mm	(kPa)	-				
0 - 50	50.0	2		68			Informed Rearing	Canadity (1	(Da)
<u>50 - 100</u> 100 - 150	50.0		1	<u> </u>			Interreu bearing	Capacity (K	1 a)
150 - 200	7.1	10	44	299	-	0	100 200 300	400	500 600 700
200 - 250	2.5	32		645		0			
250 - 300	4.2	52		444	10	00			
300 - 350	7.1	12		299	20	00			
400 - 450	5.6		1	359	30	00			
450 - 500	5.0	- 19	44	388	40	00			
500 - 550	10.0	13		233	50	1			
550 - 600	6.3			330	50			7	
650 - 700	63	14		330	60	00			
700 - 750	7.1	1.7	20	299	70	00			
750 - 800	6.3	15	39	330	80	00			
800 - 850	10.0	10		233	90	00			
850 - 900	10.0			233					
950 - 1000	7.1	14		299	(m <sup>100</sup>				
1000 - 1050	12.5	0	22	198	<u>H</u> 110	00			
1050 - 1100	10.0	9	32	233	41 120	00			
1100 - 1150	10.0	9		233	Del 130	00			
1150 - 1200 1200 - 1250	12.5			198	14(	10			
1250 - 1250	16.7	8		160	110			7	
1300 - 1350	8.3	11	33	267	150			7	
1350 - 1400	10.0		55	233	160	00 :			
1400 - 1450	8.3	14		267	170	00			
1500 - 1550	8.3			267	180	00		1	
1550 - 1600	6.3	14		330	10(	10			
1600 - 1650	8.3	12	40	267	100				
1650 - 1700	8.3			267	200	00			
1750 - 1800	6.3	14		330	210	00	Inferred Bearing C	anacity (50mm In	itervals)
<sup>1</sup> Bearing capacity res	sults stated above ha	ve been inferred	from Fig 2 –	Determination of allowable	220	00	Inferred Bearing C	anacity (300mm i	ntervals)
conditions at the tin	der small structures ne of test and will be	s, M.J. Stockwell. heavily influence	d if significa	are relative to the ground ant gravel fraction is present.	230	00			
The inferred values	should be used con	servatively. IANZ	endorsemen	t does not apply to these values.					
NZS 3604:2011, Sec assumed to be not h	tion 3.3.7.1 (b) state ess than 300 kPa if i	es that the ultimat he number of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a denth					
equal to twice the w	idth of the widest fo	oting below the u	nderside of th	he proposed footing and 3 at					
greuter uepins.	FIELD LOG: 1	NZ Geotechr	ical Socie	ety Guidelines 2005 (Not I	ANZ Accr	edited)	; Lot 319 - See Page 1	27 for locatio	on plan
Depth (mm)	Description			· ·					
0 to 100	Topsoil & vege	etation (organ	ic matter)	•				/	
100 to 1450 *	Grey / brown (	Gravelly SAN	D with tra ticle size 74	ace of / minor silt and trace 5.0mm: Sand, fine to coarse	of cobbles. e: Silt. non-	Moist. ' plastic	Tightly packed. Gravel	/ cobbles, sub	angular to
* NZS 3604:2011,	Section 3.3.6 re	quires a minin	um 50mm	diameter auger hole to be co	ompleted to t	he depti	h of each scala penetrom	eter probe. Una	able to complete past the
depth indicated.									
Note: The result	Its stated above	are snecific	to the arr	proximate test locations as	recorded 1	TS	cents no liability for an	w extranolate	d use of this data
<ul> <li>The result</li> <li>This replaced</li> </ul>	ort may not be	reproduced e	xcept in fi	ull.	recoraea.	. 15 uC		y chirapotate	u use oj inis udid.
T ( 10	17 11 1					44.5	2.3.4		
i ested By:	K. Hipkins,	C. Pearson,	1. Shaw	v & C. Fisher Date	e:	4 to 2	3-1v1ay-22		
Checked Rv•	empla	~						EDIS	
Checken Dy.	1011900						ACCI	ED	
									Test results indicated as not accredited are

**CTS** 

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 P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz

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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	: Veros, s	tephenc	averos.	co.nz				Atten	tion:	S. Cornw	all	
Job Description	on: Wooing	Tree Su	bdivisio	n, Cromwell								
	SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 32	0 – Se	e Page 12	27 for loca	tion plan		
Donth	Ponotration	Blo	ws /	Inferred Allowable								
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>								
()	(11111/010/w)	mm	mm	(kPa)								
0 - 50	16.7	0		160				Inferred	l Bearing	Capacity (	kPa)	
50 - 100	10.0	8		233	1				-			
100 - 150	10.0	10		233		(	0	100	200 30	0 400	500 60	00 700
150 - 200	3.8	18	5/	471	1	0						
200 - 250	2.6	21		622		100						
250 - 300	4.2	31		444							1	
300 - 350	6.3			330	1	200						
350 - 400	5.6	17		359	1	300						
400 - 450	8.3			267	1	500						
450 - 500	16.7	9	34	160		400						
500 - 550	12.5			198		500			P			
550 - 600	12.5	8		198		500						
600 - 650	16.7			160		600						
650 - 700	25.0	5		119	1							
700 - 750	167		1	160	1	700						
750 - 800	16.7	6	16	160	1	800						
800 - 850	25.0		1	110	1	000		L.				
850 900	167	5		119	-	900						
900 950	10.7			100	-	1000			-			
950 1000	12.3	7		150	n)	1000						
930 - 1000 1000 1050	25.0			110	mı	1100						
1000 - 1050	25.0	5	18	119	n (				-			
1050 - 1100	10.7			100	ptl	1200						
1100 - 1150	12.5	6		198	De	1300						
1150 - 1200	25.0			119								
1200 - 1250	25.0	4		119	-	1400		-				
1250 - 1300	25.0		-	119	-	1500						
1300 - 1350	10.0	15	36	233		1500						
1350 - 1400	5.0			388		1600						
1400 - 1450	7.1	17		299		1700						
1450 - 1500	5.0			388		1/00						
1500 - 1550	8.3	13		267		1800						
1550 - 1600	7.1			299								
1600 - 1650	8.3	12	37	267		1900						
1650 - 1700	8.3		• • •	267		2000						
1700 - 1750	10.0	12		233		2000						
1750 - 1800	7.1	12		299		2100				1		
<sup>4</sup> Bearing capacity rest	ults stated above have bo der small structures M	een inferred j 1 Stockwell	from Fig 2 – The results (	Determination of allowable		2200		Infer	red Bearing (	Capacity (50mm I	ntervals)	
conditions at the tim	e of test and will be hea	vily influence	ed if significa	int gravel fraction is present.		2200		Infer	red Bearing (	apacity (300mm	intervals)	
The inferred values	should be used conserva	tively. IANZ	endorsemen	t does not apply to these values.		2300	-					
NZS 3604:2011. Sec	tion 3.3.7.1 (b) states the	at the ultimat	e bearing cau	pacity of the foundation shall be								
assumed to be not le	ss than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth								
equal to twice the wi	dth of the widest footing	g below the u	nderside of tl	he proposed footing and 3 at								
greater depins.	TELD LOC: N7	Geotechn	ical Socio	ty Guidelines 2005 (Not I	ANZ A	ccredi	ted)• I	of 320 -	See Paro 1	27 for location	nn nlan	
Denth (mm)	Description	Stotelin	Sould	Suldenies 2005 (110t I		ul			or i age i	_, 101 10cath	pian	
0 to 150	Tonsoil & vogotot	on (orac-	in metta-									
0 10 150	Crew / house C	on (organ	n matter)	•	af : 11	Jac P		· · · ·	/ aal 13		anh 1	J
150 to 1300 *	Grey / brown Gra	velly SAN	D with tra	fine to coarse: Silt nor -1	of cobb	oies. Dr	y. Loos	e. Gravel	/ cobbles,	subangular to	subrounde	a,
* NZS 3604.2011	Section 3.2.6 recuir	size / 5.01	1111; 5and	, me to coarse; silt, non-pl	asuc.	to the	lenth a	feach soo	a nonotrom	eter probe Un	able to come	lete nest the
depth indicated.	section 5.5.0 requir	с <i>э а шиши</i>	am Sviiiili	ummenes auger none to be co	mpiciel		при 0	e cacii stal	ս թանաստո	prove. Ull	aon to comp	на раз ше
Nota:												
• The resu	Its stated above an	o snocific	to the arr	provimate test locations as	rocard	od CT	accor	ts no lial	hility for a	w øxtranolati	nd use of the	is data
- The resul	ns suice avove ar	e specijič roduord s	veant in f	and annual test tocations as all	record	.a. UI2	, accep	as no uul	any jor di	у сличрошие	u use oj ill	s uutu.
<ul> <li>Inis repo</li> </ul>	ni may not be rep	гописеа е.	xcept in fi	ин.								
Tested Rv•	K. Hinkins C	Pearson	T. Shaw	& C. Fisher Data	e:	4	to 23-1	Mav-27				
i concu Dy.	ь. таркінз, с. 1	. cai 3011,	1. Shaw	a c. Fisher Dau			.0 40-	-1ay-22				
Charles												
Cnecked By:	empuro								PCC PCC	REDITED		
	-								r.	· ·	Test result	ts indicated
											as not acci	redited are
											outside the	e scope of the

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

TESTING LABORATOR

Nº 434

laboratory's accreditation

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz Page 84 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

## **TEST REPORT – SCALA PENETROMETER RESULTS**

<b>Client Details:</b>	Veros, s	tephenc	averos.c	<u>:0.nz</u>		Attention:	S. Cornwall	
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell				
	COAL	DENIET	DOMET	ED (N7S 4403.1000 T 4	65 )). I + 201	Soo Dage 127 f 1	tion plan	
	SCALA	A PENEI Plo	ROME II	LK (NZS 4402:1988, Test	6.5.2); Lot 321	- See Page 12/ for loca	tion plan	
Depth	Penetration	D10	200	Rearing Capacity <sup>1</sup>				
(mm)	(mm/blow)	100	500 mm	(kPa)				
0 - 50	50.0			68				
50 - 100	50.0	2		68		Inferred Bearing	Capacity (kPa)	
100 - 150	25.0			119		8		
150 - 200	8.3	8	21	267	0	50 100	150 200	250 300
200 - 250	8.3	11		267	0			
250 - 300	10.0	11		233	100			
300 - 350	10.0	10		233	200			
350 - 400	10.0	10		233	200			
400 - 450	12.5	7	24	198	300			
450 - 500	16.7	-		160	400			
500 - 550	16.7	7		160	500			
550 - 600	12.5			198				
650 700	12.5	7		198	600			
700 - 750	16.7		1	160	700			
750 - 800	25.0	5	17	119	800			
800 - 850	16.7	-	1	160	000			
850 - 900	25.0	5		119	900			
900 - 950	25.0	4		119	_ 1000			
950 - 1000	25.0	4		119	1100			
1000 - 1050	50.0	2	10	68	<u> </u>			
1050 - 1100	50.0	2	10	68	41 1200			
1100 - 1150	25.0	4		119	a 1300			
1150 - 1200	25.0	•		119				
1200 - 1250	25.0	5		119	1400			
1250 - 1300	16.7	-		160	1500			
1300 - 1350	12.5	10	22	198	1600			
1350 - 1400	8.3			267	1000			
1400 - 1450	10.7	7		100	1700			
1500 - 1550	12.5			198	1800			
1550 - 1600	16.7	7		160				
1600 - 1650	25.0			119	1900			
1650 - 1700	16.7	5	21	160	2000			
1700 - 1750	10.0	0		233	2100			
1750 - 1800	12.5	9		198	2100	Inferred Bearing C	apacity (50mm Interva	ls)
<sup>1</sup> Bearing capacity resu	ilts stated above have be	een inferred j	from Fig 2 –	Determination of allowable	2200		apacity (300mm interva	als)
conditions at the time	ter small structures, M. e of test and will be hea	J. Stockwell. vily influence	1 he results a ed if significa	re relative to the ground nt gravel fraction is present.	2300		· · · ·	
The inferred values s	hould be used conserva	tively. IANZ	endorsement	t does not apply to these values.				
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	acity of the foundation shall be				
assumed to be not les	s than 300 kPa if the n	umber of blo	ws per 100mi	n exceeds 5 down to a depth				
greater depths.	un of the whitest footing	s below the U	nuersule of th	e proposeu jooung unu 5 ui				
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ Accredite	ed); Lot 321 - See Page	27 for location pl	an
Depth (mm)	Description							
0 to 200	Topsoil & vegetati	ion (organ	ic matter).	•				
200 to 1450 *	Grey / brown Gra	velly SAN	D with tra	ce of / minor silt and trace	of cobbles. Dry.	Loose. Gravel / cobbles,	subangular to subr	ounded,
* NZC 2(04-2011	maximum particle	e size 75.01	nm; Sand,	fine to coarse; Silt, non-pl	astic.			· · · · · · · · · · · · · · · · · · ·
depth indicated.	зесион э.э.ө requi	es a miniñ	um somm	unameter auger noie to be co	параелей то тае de	pin of each scala penetron	eter prove. Unable i	o complete past the
Note:								
• The resul	ts stated above ar	e specific	to the app	roximate test locations as	recorded. CTS	accepts no liability for a	ny extrapolated us	e of this data.
This reno	rt may not be ren	roduced e	xcept in fi	ell.			., som aporator us	,
- 11131000		. Juneta G	pi in ji					
Tested By: 1	K. Hipkins, C. l	Pearson,	T. Shaw	& C. Fisher Date	e: 4 to	23-May-22		
	11							
Checked By:	emplus					-0	REDITA	
·						ACC	60	
							Tes	t results indicated
							out	side the scope of the



ESTING LABORATOF

laboratory's accreditation

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 85 of 127 Pages

Reference No: 22/1550

outside the scope of the

laboratory's accreditation

ESTING LABORATOF

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros,	stephenc	averos.	<u>co.nz</u>			Attention: S. Cornwall
Job Description	on: Wooing	g Tree Su	bdivisio	n, Cromwell			
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 32	22 – See Page 127 for location plan
Denth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
()	(	mm	mm	(kPa)			
0 - 50	50.0	2		68			Inferred Bearing Capacity (kPa)
50 - 100	50.0	-	1	68			0 50 400 450 500
100 - 150	50.0	,	9	68		0	U         50         100         150         200         250         300         350
150 - 200	50.0	2	,	68		0	
200 - 250	25.0	5		119		100	
250 - 300	16.7	3		160			
300 - 350	25.0	5		119		200	
350 - 400	16.7	3		160		300	
400 - 450	25.0	5	16	119			
450 - 500	16.7	3	10	160		400	
500 - 550	25.0	6		119		500	
550 - 600	12.5	U		198			
600 - 650	12.5	11		198		600	
650 - 700	7.1	11	]	299		700	
700 - 750	16.7	7	25	160		/00	
750 - 800	12.5	/	25	198		800	
800 - 850	12.5	7		198		000	
850 - 900	16.7	/		160		900	
900 - 950	16.7	5		160		1000	
950 - 1000	25.0	2		119	m		
1000 - 1050	16.7	-	14	160	(m	1100	
1050 - 1100	25.0	5	14	119	th	1200	
1100 - 1150	25.0		1	119	ep		
1150 - 1200	25.0	4		119	D	1300	
1200 - 1250	25.0			119		1400	
1250 - 1300	25.0	4		119		1400	
1300 - 1350	16.7			160		1500	
1350 - 1400	12.5	7	18	198		1.500	
1400 - 1450	16.7	_		160		1600	
1450 - 1500	12.5	7		198		1700	
1500 - 1550	16.7			160			
1550 - 1600	25.0	5		119		1800	
1600 - 1650	16.7			160		1900	
1650 - 1700	12.5	7	20	198			
1700 - 1750	12.5			198		2000	
1750 - 1800	12.5	8		198		2100	
<sup>1</sup> Bearing capacity res	ults stated above have l	een inferred	from Fig 2 –	Determination of allowable		2100	
bearing pressure un	der small structures, M	J. Stockwell.	The results a	are relative to the ground		2200	Inferred Bearing Canacity (300mm intervals)
conditions at the tin The inferred values	ie of test and will be he should be used conserv	avity influence atively. IANZ	ea if significa ' endorsemen	int gravel fraction is present. t does not apply to these values.		2200	-interieu bearing Capacity (Suommi mitervais)
			-			2300	
NZS 3604:2011, Sec assumed to be not h	tion 3.3.7.1 (b) states th ess than 300 kPa if the	at the ultimat	e bearing cap ws ner 100m	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the w	idth of the widest footin	g below the u	nderside of th	he proposed footing and 3 at			
greater depths.		~		-			
	FIELD LOG: NZ	Geotechn	ical Socie	ety Guidelines 2005 (Not I	ANZ A	Accredi	ited); Lot 322 - See Page 127 for location plan
Depth (mm)	Description						
0 to 100	Topsoil & vegeta	tion (organ	ic matter)				
100 to 1550 *	Grey / brown Gra	avelly SAN	D with tra	ace of / minor silt and trace	of cobl	oles. Dr	ry. Loose. Gravel / cobbles, subangular to subrounded,
100 00 1550	maximum particl	e size 75.0	mm; Sand	, fine to coarse; Silt, non-pl	astic.		
* NZS 3604:2011,	Section 3.3.6 requi	res a minin	1 <i>um 50mm</i>	diameter auger hole to be co	mpleted	to the d	depth of each scala penetrometer probe. Unable to complete past the
aeptn indicated.							
Note:						. ~~	
• The resu	its stated above a	re specific	to the app	proximate test locations as	record	ed. CTS	S accepts no liability for any extrapolated use of this data.
• This rep	ort may not be rep	oroduced e	xcept in f	ull.			
T		D	TC			4	4. 22 M. 22
lested By:	K. Hipkins, C.	Pearson,	T. Shaw	v & C. Fisher Date	e:	4 1	to 23-May-22
	//						
Checked By:	longhlin	,					CCREDITE
	<i>,</i>						P
							Test results indicated

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Page 86 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros, s	tephenc	<u>(a)veros.</u>	<u>co.nz</u>			Attention: S. Cornwall
Job Description	on: Wooing	Tree Su	bdivisio	n, Cromwell			
			DOI				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 32	23 – See Page 127 for location plan
Denth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
()	(11111/01011)	mm	mm	(kPa)			
0 - 50	50.0	•		68			
50 - 100	50.0	2		68			Inferred Bearing Capacity (kPa)
100 - 150	7.1	1.5		299			
150 - 200	6.3	15	27	330		0	0 50 100 150 200 250 300 350 400
200 - 250	8.3	1.0		267		0	
250 - 300	12.5	10		198		100	
300 - 350	16.7			160			
350 - 400	16.7	6		160		200	
400 450	16.7		-	160	1	300	
450 500	16.7	6	20	160	-		
500 550	12.5			100	-	400	
550 600	12.3	8		178	-	500	
550 - 600	12.5			198	-		
600 - 650	16.7	6			-	600	
650 - 700	16.7		_	160		700	
700 - 750	12.5	8	21	198		700	
750 - 800	12.5			198		800	
800 - 850	16.7	7		160		000	
850 - 900	12.5	,		198		900	
900 - 950	16.7	6		160		1000	
950 - 1000	16.7	U		160	um		
1000 - 1050	50.0	2	10	68	(III	1100	
1050 - 1100	25.0	3	12	119	th	1200	
1100 - 1150	25.0			119	ep		
1150 - 1200	50.0	3		68	D	1300	
1200 - 1250	25.0			119	1	1400	
1250 - 1300	25.0	4		119			
1300 - 1350	25.0		-	119		1500	
1350 - 1400	56	11	25	350		1600	
1400 1450	9.2		-	267		1000	
1400 - 1430	0.5	10		108	-	1700	
1450 - 1500	12.5			190	-	1000	
1500 - 1550	12.5	8		198	-	1800	
1550 - 1600	12.5	-		198		1900	
1600 - 1650	25.0	6	27	119	-		
1650 - 1700	12.5	-		198		2000	
1700 - 1750	8.3	13		267		2100	
1750 - 1800	7.1		<u> </u>	299	l		Inferred Bearing Capacity (50mm Intervals)
<sup>1</sup> Bearing capacity res	ults stated above have b	een inferred	from Fig 2 –	Determination of allowable		2200	Inferred Bearing Capacity (300mm intervals)
conditions at the tim	ie of test and will be hea	s. Slockwell. vily influence	ed if significa	int gravel fraction is present.		2300	
The inferred values	should be used conserve	tively. IANZ	endorsemen	t does not apply to these values.			
N75 2604-2011 See	tion 2271 (b) states the	~ 4 4	a kanina an	a site of the foundation shall be			
assumed to be not le	ess than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the w	idth of the widest footing	g below the u	nderside of th	he proposed footing and $\frac{1}{3}$ at			
greater depths.	TELDLOG NZ	<u> </u>	• 10 •				
	TELD LUG: NZ	Geotechn	iical Socie	ty Guidennes 2005 (Not I	IANZ A	ccredi	iteu); Lot 323 - See Fage 127 for location plan
Depth (mm)	Description						
0 to 150	Topsoil & vegetat	ion (organ	ic matter)	•			
150 to 1600 *	Grey / brown Gra subrounded, maxi	velly SAN	D with tra ticle size 7:	ice of / minor silt and trace 5.0mm; Sand, fine to coarse	of cobl e; Silt, 1	oles. Mo 10n-pla	oist. Tightly packed. Gravel / cobbles, subangular to istic.
* NZS 3604:2011,	Section 3.3.6 requir	res a minin	num 50mm	diameter auger hole to be co	ompleted	to the d	depth of each scala penetrometer probe. Unable to complete past the
depth indicated.							
Note:							
• The resu	lts stated above ar	e specific	to the app	proximate test locations as	record	ed. CTS	S accepts no liability for any extrapolated use of this data.
• This rep	ort may not be rep	roduced e	xcept in fi	ull.			· - · · · ·
······································	· · · · ·		1				
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e:	4	to 23-May-22
·		,					•
Checked Rv•	emplin						CRED (S
Checked By.	, congress						PCCREDITED
							Test needle indicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz Page 87 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Vero	s, <u>stephenc</u>	@veros.	co.nz		Attention:	S. Cornwall
Job Description	on: Woo	ing Tree Su	bdivisio	n, Cromwell			
	~~~						
	SCA	ALA PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 324	4 – See Page 127 for loca	tion plan
Depth	Penetratio	n Blo	ws /	Inferred Allowable			
(mm)	(mm/blow	) 100	300	Bearing Capacity			
0.50	50.0	mm	mm	(KF a)			
0 - 50	50.0	2		68		Informed Rearing	Canadity (12 Da)
50 - 100	50.0		-	68		Interreu bearing	Capacity (KF a)
100 - 150	30.0	3	12	110	0	50 100 150	0 200 250 300 350
200 250	16.7			119	0 †	····	
250 - 250	12.5	7		100	100		
300 - 350	16.7			160			
350 - 400	16.7	6		160	200		
400 - 450	16.7			160	300		
450 - 500	16.7	6	16	160	400		
500 - 550	25.0			119	400		
550 - 600	25.0	- 4		119	500		
600 - 650	25.0			119	600		
650 - 700	25.0	4		119			
700 - 750	25.0	2	1	119	700		
750 - 800	50.0	5	11	68	800		
800 - 850	25.0	A	]	119			
850 - 900	25.0	4		119	900		
900 - 950	25.0	4		119	1000		
950 - 1000	25.0	4		119	1100		
1000 - 1050	25.0	5	22	119	<u>e</u> 1100		
1050 - 1100	16.7	3	22	160	<b>4</b> 1200		
1100 - 1150	10.0	13		233	0 1300		
1150 - 1200	6.3	15		330	1500		
1200 - 1250	12.5	11		198	1400		
1250 - 1300	7.1			299	1500		
1300 - 1350	16.7	6	25	160			
1350 - 1400	16.7	ů		160	1600		
1400 - 1450	12.5	8		198	1700		
1450 - 1500	12.5			198	1000		
1500 - 1550	16.7	7		160	1800		
1550 - 1600	12.5		-	198	1900		
1600 - 1650	16.7	7	27	160	2000		
1050 - 1700	12.5		-	198	2000		
1700 - 1750	/.l	13		299	2100	Inferred Bearing (	anacity (50mm Intervale)
<sup>1</sup> Rearing capacity res	0.3 ults stated above ha	ve heen inferred	from Fig 2 -	207 Determination of allowable	2200		apacity (30mm intervais)
bearing pressure un	der small structures	, M.J. Stockwell.	The results a	are relative to the ground		Inferred Bearing C	apacity (300mm intervals)
conditions at the tin The inferred values	ie of test and will be should be used con	heavily influence servatively IANZ	ed if significa ' endorsemen	nt gravel fraction is present. t does not apply to these values	2300 -	L	
The injerrea values	snouia de asea con	servatively. 17112	enuorsemen	i uoes noi uppiy io inese values.			
NZS 3604:2011, Sec	tion 3.3.7.1 (b) state	es that the ultimat	e bearing cap	pacity of the foundation shall be mexceeds 5 down to a domb			
equal to twice the w	idth of the widest fo	oting below the u	nderside of th	he proposed footing and 3 at			
greater depths.			. 10 .				
	TELD LOG: 1	NZ Geotechn	ncal Socie	ety Guidelines 2005 (Not I	ANZ Accredit	ed); Lot 324 - See Page 1	27 for location plan
Deptn (mm)	Description		• • • •				
0 to 100	Topsoil & vege	etation (organ	ic matter)	•		/ <b>* *</b> 4	~
100 to 1400 *	Grey / brown	Gravelly SAN	D with tra	ice of / minor silt and trace	of cobbles. Dry	/ Moist. Tightly packed. (	Fravel / cobbles, subangular to
* NZS 2604.2011	subrounded, n	uximum part	ucie size 7:	Jumm; Sand, line to coars	e; SIII, non-plas	uc. Ionth of each scale nonotrow	eter probe Unable to complete past the
depth indicated.	Section 5.5.0 re	quii es a minim	10111 30111M	utanieter auger note to De Co	mpicica io ine a	epen of each scala penetrom	erer prove. Onable to complete past the
Note							
• The resu	lts stated above	e are specific	to the apr	proximate test locations as	recorded CTS	accepts no liability for a	w extrapolated use of this data.
This ren	ort may not he	reproduced e	xcent in fi	ull.			-, aporatoa noe oj trao unun
- 1113 1000	may not be	p. ounceu e	pi in fi				
Tested By:	K. Hipkins, (	C. Pearson,	T. Shaw	& C. Fisher Date	e: 4 t	o 23-May-22	
-		/				-	
Checked Bv:	empl	40					RED/2.
	/////					ACC	(ED
							Test results indicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Page 88 of 127 Pages

Reference No: 22/1550

outside the scope of the laboratory's

accreditation

TESTING LABORATO

Date: 26 May 2022

### <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

<b>Client Details</b>	:	Veros,	tephenc	averos.	co.nz			Attention	:	S. Cornw	all
Job Descripti	on:	Wooing	Tree Su	bdivisio	n, Cromwell						
		SCAL	A PENET	ROMET	ER (NZS 4402:1988. Test	6.5.2):	Lot 32	5 – See Page 127 for	·locati	on plan	
Donth	Don	atuation	Blo	ws /	Inferred Allowable						
(mm)	(m)	n/blow)	100	300	Bearing Capacity <sup>1</sup>						
()	(		mm	mm	(kPa)	_					
0 - 50		<u>50.0</u>	2		68					S 14 (1	
<u> </u>	-	<u>50.0</u> 50.0			68	-		Interred Bea	ring	зарасиу (к	Pa)
150 - 200		16.7	4	12	160		0	50 100	150	200	250 300 350
200 - 250		16.7	6		160		0				
250 - 300		16.7	U		160		100				
300 - 350	-	<u>25.0</u>	6		119	_	200				
<u> </u>		12.5			198	-	300				
450 - 500		6.3	12	28	330		40.0	L			
500 - 550		10.0	10		233		400				
550 - 600		10.0	10		233		500				
600 - 650	-	<u>25.0</u>	4		119	_	600	Г			
700 - 750		25.0 25.0			119	-	700				
750 - 800		16.7	5	14	160	1	800				
800 - 850		25.0	5		119			L			
850 - 900		16.7	3		160		900				
900 - 950	-	25.0	4		119	(u	1000				
<u>950 - 1000</u> 1000 - 1050		<u>25.0</u> 25.0			119	m	1100		-		
1050 - 1100		<u>25.0</u>	4	14	119	th (	1200	L			
1100 - 1150		25.0	6		119	)ep	1200		L		
1150 - 1200		12.5	0		198	Q	1300				
1200 - 1250	-	16.7	8		160		1400				
1250 - 1300 1300 - 1350		10.0			233		1500		<u>п</u>		
1350 - 1400		10.0	10	27	233	-	1600				
1400 - 1450		10.0	0		233		1700				
1450 - 1500		12.5	9		198		1000				
1500 - 1550	-	16.7	6		160		1800				
<u>1550 - 1600</u> 1600 - 1650		<u>16.7</u> 25.0			160		1900				
1650 - 1700		25.0	4	17	119	-	2000				
1700 - 1750		16.7	7		160		2100				
1750 - 1800		12.5	/		198		2200	Inferred Be	aring Caj	pacity (50mm In	tervals)
Bearing capacity res bearing pressure un	sults statea 1der small	l above have b structures, M.	een inferred j J. Stockwell.	trom Fig 2 – The results a	Determination of allowable tre relative to the ground		2200	Inferred Be	aring Caj	pacity (300mm i	ntervals)
conditions at the tin The inferred values	ne of test a should be	nd will be hea used conserve	wily influence tively, IANZ	ed if significa ' endorsemen	nt gravel fraction is present. t does not apply to these values.		2300	•			
NZS 3604:2011, Sea assumed to be not la equal to twice the w greater depths.	ction 3.3.7. ess than 30 idth of the	1 (b) states the 00 kPa if the n widest footing	at the ultimat umber of blo g below the u	te bearing cap ws per 100m nderside of th	pacity of the foundation shall be m exceeds 5 down to a depth te proposed footing and 3 at						
Depth (mm)	Descri	LUG: NZ	Geotechn	iical Socie	ty Guidelines 2005 (Not l	IANZ A	ccredit	eu); Lot 325 - See F	age 12	/ Ior locatio	on pian
0 to 50	Topsoi	& vegetat	ion (organ	ic matter)							
50 to 1300 *	Brown	Gravelly S	ilty SAND	. Moist. T	ightly packed. Gravel, sub	angular	to subr	ounded, maximum p	article	size 53.0mm	; Sand, fine to coarse;
* NZS 3604:2011	Silt, no , <i>Section</i>	n-plastic. <i>3.3.6 requir</i>	res a minin	um 50mm	diameter auger hole to be co	ompletea	l to the d	lepth of each scala pen	etrome	ter probe. Un	able to complete past the
depth indicated.											
• The resu	ilts state	ed above ar	e specific	to the app	proximate test locations as	record	ed. CTS	accepts no liability	for any	v extrapolate	ed use of this data.
- Inis rep	к ц:-	kins C	Poorsor	T Shar	1 & C Fisher Dat	٥.	1+	0 23-May 22			
rtsitu Dy.	1 <b>2</b> , 111µ	, Killis, C. I	i cai sull,	1. Shaw	a C. Fisher Dau		40	0 20-111ay-22			
Checked By:	ler.	nfilio							ACCR	EDITED	
											Test results indicated as not accredited are

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P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

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Reference No: 22/1550

Nº434

Date: 26 May 2022

#### EST REPORT - SCALA PENETROMETER RESULTS

Client Details:	Veros, s	tephenc	(a)veros.	co.nz				Attent	tion:	S.	Corny	vall		
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell										
		DELE	DOLTET	D 0170 4400 1000 7		T	<u> </u>							
	SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 32	6 – See I	age 12	7 for lo	cation	plan			
Depth	Equivalent	Blo	ws /	Inferred Allowable										
(mm)	Penetration	100	300	Bearing Capacity										
0.50	(IIIII/DIOW)	mm	mm	(KFa)										
0 - 50	150.0	0.7		25			In	ferred	Beari	ng Ca	pacity	(kPa)		
50 - 100	150.0		-	25						0	r v			
100 - 150	150.0	1.3	5	<u> </u>			0 5	0	100	150	200	250	300	350
200 250	50.0			68		0								
200 - 230	25.0	3		110		100			-					
300 - 350	25.0			119		200								
350 - 400	50.0	3		68		200								
400 - 450	25.0			119		300		<b></b>	+ 1					
450 - 500	16.7	5	12	160		400								
500 - 550	25.0			119		100								
550 - 600	25.0	4		119		500								
600 - 650	25.0	_		119		600								
650 - 700	16.7	5		160					L	<b>1</b>				
700 - 750	16.7		1	160	1	700								
750 - 800	16.7	6	15	160	1	800			_					
800 - 850	25.0		1	119	1									
850 - 900	25.0	4		119	1	900								
900 - 950	25.0	F		119	_	1000								
<u>950 - 1000</u>	16.7	3		160	Î	4 - 0 -								
1000 - 1050	25.0	4	15	119	(m	1100								
1050 - 1100	25.0	4	15	119	th	1200				╙	_			
1100 - 1150	16.7	6		160	ep	1000								
1150 - 1200	16.7	U		160	Q	1300								
1200 - 1250	12.5	7		198		1400								
1250 - 1300	16.7	/		160		1500						L	_	
1300 - 1350	12.5	8	28	198		1200								
1350 - 1400	12.5	0	20	198		1600			-					
1400 - 1450	8.3	13		267		1700								
1450 - 1500	7.1	10		299		1/00						-		
1500 - 1550	7.1	12		299		1800								
1550 - 1600	10.0			233		1000								
1600 - 1650	8.3	12	33	267		1900								
1650 - 1700	8.3			267		2000								
1700 - 1750	12.5	9		198		2100								
1750 - 1800	10.0	an informad	Guom Eig 2	233 Determination of allowable		2100		Infer	red Beari	ng Capac	ty (50mm	Intervals)		
bearing capacity resu bearing pressure und	ler small structures, M.	J. Stockwell.	The results a	re relative to the ground		2200	_	Infer	red Beari	ng Cadac	tity (300mi	n intervals`	,	
conditions at the time	e of test and will be hea	vily influence	ed if significa	int gravel fraction is present.		2300			1	-gp				
The inferrea values s	nouia de usea conserva	uiveiy. IANZ	enaorsemen	t abes not apply to these values.										
NZS 3604:2011, Secti	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be										
assumed to be not les equal to twice the wid	s than 300 kPa if the n lth of the widest footing	umper of blo g below the u	ws per 100m nderside of tl	m exceeas 5 down to a depth he proposed footing and 3 at										
greater depths.	,,													
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredi	ted); Lot	326 - 8	See Pag	e 127 fo	or locati	on plan		
Depth (mm)	Description													
0 to 50	Topsoil & vegetati	ion (organ	ic matter)	•										
50 to 1500 *	Grey / brown Gra	velly SAN	D with tra	ce of / minor silt. Moist. Ti	ghtly p	acked. (	Gravel, si	ıbangul	ar to su	bround	led, maxi	mum pa	rticle	
	size 53.0mm; Sand	l, fine to c	oarse; Silt	, non-plastic.				<u> </u>						
* NZS 3604:2011, denth indicated	Section 3.3.6 requir	res a minin	100 50mm	anameter auger hole to be co	mpleted	to the a	epth of e	ach scala	a penetr	ometer p	probe. Un	able to co	omplete p	ast the
Nota:														
The pasul	ts stated above an	a snaaifia	to the arr	provimate test locations as	rocard	od CTG	acconte	no liak	ility for	ann an	tranolat	nd use of	this dat	a
<ul> <li>The result</li> <li>This ware</li> </ul>	is since above ar	e specijic roduced o	w ine upp	nonimule lest locations as all	record	<i>cu.</i> UIS	accepts	กษ แนบ	uuy jor	any ex	apotati	a use of	inis auto	
Tested Ry.	K Hinking C	Pegreor	T Shaw	1 & C Fishar Date	<b>.</b> .	1 4	o 23. M	av_??						
restru Dy: T	х. тпркшs, С. I //	i vai 3011,	1. 511 <b>a</b> W	a C. Fishti Dali		41	J 2J-IVI	ay-22						
Checked By:	1mplus									CREDI	TEA	I		
	-								P		-0	Treet	ault- :	
									_		_	1 est re	suits indi	cated Lare
												outside	the scope	e of the
									TE		A.	laborat	ory's	
									STIL		ATO	accredi	tation	
									1	GLABO	DR.	I		

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

Nº 434

Date: 26 May 2022

#### - SCALA PENETROMETER RESULTS ST REI PORT

Chent Details:	Veros, s	tephence	(a)veros.	<u>co.nz</u>			A	ttention	:	S. Co	rnwa	11		
Job Descriptio	n: Wooing	I ree Su	bdivisio	n, Cromwell										
	SCAL	A PENET	ROMET	FR (NZS 4402.1088 Tost	6521.	Lot 22	7 <u>- Soo Doo</u>	ie 177 fo	r locati	n nlar				
	SCAL	Rlo		Informed Allowable	0.3.2),	LUI 32	7 – See 1 ag	c 12/10	i iocati	л ріан				
Depth	Penetration	100	300	Bearing Canacity <sup>1</sup>										
(mm)	(mm/blow)	mm	500 mm	(kPa)										
0 - 50	50.0	mm		68										
50 - 100	50.0	2		68			Infe	rred Be	aring (	Capaci	ty (k)	Pa)		
100 - 150	50.0	_	1	68	1		) =	100	150	200	250	200	350	100
150 - 200	50.0	2	9	68	1	0 -	7 30	100	120	200	250	300		400
200 - 250	25.0	-		119	1									
250 - 300	16.7	5		160		100								
300 - 350	25.0	6		119		200		_						
350 - 400	12.5	0		198		200								
400 - 450	8.3	16	26	267		300				_				
450 - 500	5.0	10	20	388		400				-				
500 - 550	25.0	4		119		500								
550 - 600	25.0	-		119										
600 - 650	16.7	5		160	-	600				_				
650 - 700	25.0	-	-	119	4	700								
700 - 750	25.0	4	13	119										
/50 - 800	25.0		-	119		800								
800 - 850	25.0	4		119	-	900			-					
000 - 900 900 - 950	25.0 16.7		}	119	1	1000								
950 - 950	16.7	6		160	(u	T000								
1000 - 1050	25.0		1	110	, m	1100				_				
1050 - 1100	167	5	18	160	h (	1200				_				
1100 - 1150	12.5			198	ept	1200								
1150 - 1200	16.7	7		160	Ď	1300				- h				
1200 - 1250	16.7			160		1400								
1250 - 1300	16.7	6		160	1									
1300 - 1350	12.5	0		198	1	1500				-				
1350 - 1400	10.0	9	23	233		1600				_				
1400 - 1450	10.0	0		233		1.000				<u> </u>				
1450 - 1500	16.7	ð		160		1700								
1500 - 1550	25.0	5		119		1800		_						
1550 - 1600	16.7	3		160		1000								
1600 - 1650	12.5	9	19	198		1900								
1650 - 1700	10.0			233		2000			_					
1700 - 1750	25.0	5		119	-	2100								
1750 - 1800	<b>16.7</b>	an informad	Guom Eig 2	160 Determination of allowable			0.0000000000000000000000000000000000000	Inferred B	earing Ca	pacity (50	)mm Int	tervals)		
bearing capacity resu bearing pressure und	ler small structures, M.	een inferrea j J. Stockwell.	The results a	Determination of allowable ire relative to the ground		2200		Inferred B	earing Ca	pacity (30	00mm in	itervals)		
conditions at the time	e of test and will be hea	vily influence	ed if significa	int gravel fraction is present.		2300								
The injerrea values s	nouia de usea conserva	uively. IANZ	enuorsemen	i abes not apply to these values.										
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be										
assumea to be not les equal to twice the wid	s than 500 kPa if the n ith of the widest footing	umper of blo g below the u	ws per 100m nderside of tl	m exceeas 5 down to a depth he proposed footing and 3 at										
greater depths.									- ·					
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	IANZ A	ccredit	ted); Lot 32	27 - See l	Page 12	7 for lo	cation	plan		
Depth (mm)	Description													
0 to 100	Topsoil & vegetat	ion (organ	ic matter)	•										
100 to 1000 *	Grey / brown Gra	velly SAN	D with tra	ice of minor silt. Dry / Mois	st. Tigh	tly pack	ed. Gravel /	cobbles,	subang	ular to	subrou	inded,	naximu	m
* NZS 3604-2011	particle size 75.0m	iin; Sand,	inne to coa	irse; Siit, non-plastic.	mnloto	to the s	lenth of oach	scala no	netromo	er nrah	Inal	le to co	mnlata n	ast the
depth indicated.	Section Swith I cyull			ammenter auger none to be co	mpieree	<i></i> t u	optin of Cach	scala pel			. Unab		prit p	IIC
Note:														
• The resul	ts stated above ar	e specific	to the app	proximate test locations as	record	ed. CTS	accepts no	liabilitv	for any	extrap	olated	use of	this date	ı.
• This repo	rt may not be rep	roduced e	xcept in fi	ull.			1		,			- 9		
Tested By: I	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	o 23-May	-22						
Choolead Dry	en ll.													
Checked Dy:	, corrigen into								ACCR	DITED				
												Test res	ults indio	cated
												as not a	ccredited	l are
											2	outside	the scope	e of the
								E	S.		d'	accredit	ation	
									NG	BORAT				
									-		1			

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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

**Central Testing Services** 

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz



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**Tested By:** K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date:

**Checked By:** 

emplus



4 to 23-May-22

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

# Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

Nº434

Date: 26 May 2022

# EST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, s	tephenc	(a)veros.	co.nz			Attention:	S. Cornw	all
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell					
 	0.017	DEDIET	DOMES	ED (NIZE 4462 1000 T	( = -	T + 22		· 1	
	SCALA	A PENET	KOMET	ER (NZS 4402:1988, Test	: 6.5.2); 	Lot 32	9 - See Page 127 for loca	tion plan	
Depth	Penetration	Blo	ws /	Inferred Allowable					
(mm)	(mm/blow)	100	300	Bearing Capacity					
0.50	25.0	mm	mm	(KF a)					
0 - 50	25.0	5		119			Informed Decising	Canadity (	$(\mathbf{D}_{\mathbf{a}})$
50 - 100	10.7		-	160	-		Interred Bearing	Capacity (k	(Fa)
100 - 150	12.5	8	28	198	-	(	0 100 200 300	) 400	500 600 700
150 - 200	6.3			190		0 :			
200 - 230	0.5	15		200		100			
300 350	7.1			299		100			
350 400	/.1	18		416		200			
400 - 450	3.8			410		300			
450 - 500	5.6	22	66	359					
500 - 550	7.1			299		400			
550 - 600	2.6	26		622		500			
600 - 650	3.8			471		(00)			
650 - 700	5.0	23		388	1	000			
700 - 750	16.7	_	1	160	1	700			
750 - 800	12.5	7	37	198	1	800			
800 - 850	16.7	-	1	160	1	000			
850 - 900	12.5	7		198	1	900			
900 - 950	25.0			119	-	1000			
950 - 1000	12.5	6		198	m (m				
1000 - 1050	16.7			160	(m	1100			
1050 - 1100	16.7	0	21	160	th	1200			
1100 - 1150	16.7	0		160	)ep	1200			
1150 - 1200	8.3	9		267	D	1300			
1200 - 1250	10.0	7		233		1400			
1250 - 1300	25.0	/		119		1500			
1300 - 1350	12.5	0	24	198		1500			
1350 - 1400	12.5	o	24	198		1600			
1400 - 1450	12.5	0		198		1700			
1450 - 1500	10.0	,		233		1,00			
1500 - 1550	8.3	11		267		1800			
1550 - 1600	10.0			233		1900			
1600 - 1650	12.5	7	27	198					
1650 - 1700	16.7	,	27	160		2000			
1700 - 1750	10.0	9		233		2100			
1750 - 1800	12.5			198		2200	Inferred Bearing C	apacity (50mm Ir	itervals)
<ul> <li>Bearing capacity results bearing pressure und</li> </ul>	ilts stated above have be ler small structures. M.	een inferred J J. Stockwell.	trom Fig 2 – The results a	Determination of allowable are relative to the ground		2200	Inferred Bearing C	apacity (300mm s	intervals)
conditions at the time	e of test and will be hea	vily influence	ed if significa	int gravel fraction is present.		2300			
The inferred values s	hould be used conserva	tively. IANZ	endorsemen	t does not apply to these values.					
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be					
assumed to be not les	ss than 300 kPa if the n	umber of blo below the	ws per 100mi nderside of 4	m exceeds 5 down to a depth					
greater depths.	an of the wittest footing	s delow ine u	naerside of th	ie proposeu jooting unu 5 ui					
F	IELD LOG: NZ	Geotechn	ical Socie	ety Guidelines 2005 (Not l	IANZ A	Accredi	ted); Lot 329 - See Page 1	27 for location	on plan
Depth (mm)	Description								
0 to 100	Topsoil & vegetati	ion (organ	ic matter)	•					
100 to 1000 *	Brown Silty Sandy	y GRAVE	L with tra	ce of cobbles. Dry. Tightly	packed	l. Grave	l / cobbles, angular to subr	ounded, maxi	mum particle
100 10 1000 "	size 75.0mm; Sand	l, fine to c	oarse; Silt	, non-plastic.			-		
* NZS 3604:2011,	Section 3.3.6 requir	res a minin	um 50mm	diameter auger hole to be co	ompletee	d to the d	lepth of each scala penetrom	eter probe. Un	able to complete past the
aeptn indicated.									
Note:			1	• , , , • .•			· · · · · · · ·	, <b>.</b> .	1 (1) 1
• The resul	ts stated above ar	e specific	to the app	proximate test locations as	record	ea. CTS	accepts no liability for a	ıy extrapolate	ea use of this data.
• This repo	rt may not be rep	roduced e	xcept in fi	ull					
Tested Rv· 1	K Hinking C	Pegreor	T Shaw	& C Fisher Dat	<u></u>	1 4	0 23-Mav-22		
ronu by: I	х. шркшз, с. 1	ı cai 3011,	1. Shaw	a c. risiiti Dal	<b>.</b> .	41	10 20-111ay-22		
Charlest									
Unecked By:	empuno						~cc	REDITEN	
							۴	~	Test results indicated
									as not accredited are
									outside the scope of the
							TES	4	laboratory's
							TIN	ATO	accreditation
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Reference No: 22/1550

Date: 26 May 2022

# TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	averos.	<u>co.nz</u>			Attention:	S. Cornwal	1	
Job Descriptio	n: Wooing	Tree Su	ıbdivisio	n, Cromwell						
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); L	ot 330	- See Page 127 for location	on plan		
Denth	Penetration	Blo	ows /	Inferred Allowable						
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>						
()	(	mm	mm	(kPa)						
0 - 50	25.0	6		119			Inferred Bearing (	anacity (kP	a)	
50 - 100	12.5	0		198				There is a second second		
100 - 150	12.5	0	24	198		0	50 100 150	200 25	50 300	350
150 - 200	10.0	9	26	233		0 +	· · · · · · · · · · · · · · · · · · ·			
200 - 250	10.0			233		100				
250 - 300	8.3	- 11		267		100				
300 - 350	7.1			299		200				
350 - 400	8.3	13		267						
400 - 450	71		-	299		300				
450 - 500	7.1	14	34	299		400				
500 - 550	12.5			198		-				
550 - 600	167	7		160		500				
600 650	16.7		-	160		600				
650 700	10.7	8		100						
050 - 700	10.0		-	233		700				
750 000	25.0	5	19	119						
/50 - 800	16.7					800				
800 - 850	16.7	6		160		900				
850 - 900	16.7			160						
900 - 950	16.7	6		160		1000 -				
950 - 1000	16.7	Ť		160	uu 1	1100				
1000 - 1050	16.7	9	23	160	E E	:				
1050 - 1100	8.3			267	1 oth	1200 🕂				
1100 - 1150	12.5	8		198	)el	1200				
1150 - 1200	12.5	0		198		1300				
1200 - 1250	10.0	0		233	1	1400 -				
1250 - 1300	12.5	,		198						
1300 - 1350	12.5	7	21	198	1	1500				
1350 - 1400	16.7	/	21	160	1	1600 -				
1400 - 1450	25.0	-		119		-	L			
1450 - 1500	16.7	5		160	1	1700 -				
1500 - 1550	16.7			160	1	1800				
1550 - 1600	10.0	8		233		1000				
1600 - 1650	16.7	_		160	1	1900 🕂				
1650 - 1700	12.5	7	24	198						
1700 - 1750	12.5		-	198	2	2000 -				
1750 - 1800	10.0	9		233	2	2100				
<sup>1</sup> Bearing capacity resu	Its stated above have b	een inferred	from Fig 2 –	Determination of allowable		-	Inferred Bearing Cap	acity (50mm Inter	vals)	
bearing pressure und	er small structures, M.	J. Stockwell.	The results a	re relative to the ground	2	2200	Inferred Bearing Can	acity (300mm inte	ervals)	
conditions at the time	e of test and will be hea hould be used conserve	wily influence atively 14N7	ed if significa endorsemen	int gravel fraction is present.	7	2300 L				
The injerrea values s	nomiti de useu conservi	very. 1/1/NZ	chuoisemen	aces not upply to these values.	_					
NZS 3604:2011, Secti	on 3.3.7.1 (b) states th	at the ultimat	te bearing cap	pacity of the foundation shall be						
assumed to be not les	s than 300 kPa if the n hth of the widest footing	umber of blo 9 below the 11	ws per 100m nderside of #	n exceeds 5 down to a depth						
greater depths.	of the whitest jobility	, ine u		r. oposen jooning unu 5 ui						
F	IELD LOG: NZ	Geotechn	nical Socie	ety Guidelines 2005 (Not I	ANZ Acc	credite	ed); Lot 330 - See Page 12	7 for location	plan	
Depth (mm)	Description									
0 to 100	Topsoil & veget	ation (org	anic matte	er).						
	Grev / brown G	ravelly SA	ND with	race of silt. Dry Tightly no	acked Gr	avel «	uhangular to subrounded r	naximum nart	icle size 75 0	mm:
100 to 1000	Sand, fine to co	arse: Silt	non-plasti	c	acacu, Of	a , c1, S	as angular to subtounded, I		.icit 3120 / 3.0	
4000	Brown Silty Sa	idy GRAV	EL with t	 race of silt. Drv. Tightly ng	cked. Grs	avel / c	cobbles, angular to subroun	ded, maximun	1 particle	
1000 to 1300 *	size 75.0mm: Sa	and, fine to	coarse; S	ilt, non-plastic.				,a.inun	- ran mene	
* NZS 3604:2011.	Section 3.3.6 requi	res a minin	num 50mm	diameter auger hole to be co	mpleted to	o the de	epth of each scala penetromet	ter probe. Unab	le to complete	e past the
depth indicated.										-
Note:										
• The result	ts stated above an	e specific	to the ann	proximate test locations as	recorded	. CTS	accepts no liability for any	extrapolated	use of this d	ata.
This repo	rt may not he ren	roduced e	xcent in fi	ull.			Field in the second for any	Toracou		
1			<i>p</i> ji							
Tested Bv: H	K. Hipkins, C.	Pearson.	T. Shaw	& C. Fisher Date	e:	4 to	o 23-May-22			
v	11	,					cc	REDITEN		
Charlend Pro	emplin	1					P	-0	Tost marrie	indicate d
CHECKEU DY:	manun								rest results	mulcated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation
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Reference No: 22/1550

Date: 26 May 2022

### <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

<b>Client Details:</b>	: Veros,	stephenc	@veros.	<u>:0.nz</u>			Attention	1:	S. Cornw	all
Job Description	on: Wooin	g Tree Su	ıbdivisio	n, Cromwell						
	SCAL	A PENET	ROMET	ER (NZS 4402-1988 Toot	6.5 2).	Lot 33	31 - See Page 127 fo	r locati	ion plan	
	J	Blo	ws /	Inferred Allowable	0.3.2),	LUIJ	r = 3 c $r$ age $r = 12$ $r$ in	n iocau	ion pian	
Depth (mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>						
(mm)	(mm/biow)	mm	mm	(kPa)						
0 - 50	16.7	7		160						
50 - 100	12.5		-	198			Inferred Be	aring (	Capacity (k	Pa)
150 - 200	12.5	7	25	198	-		0 50 100 14	50 200	250 300	350 400 450
200 - 250	10.0			233		0		200		
250 - 300	8.3	- 11		267		100				
300 - 350	10.0	9		233		200		L		
350 - 400	12.5	-	-	198	_	200				
400 - 450	12.5	8	29	198	-	300				
500 - 550	12.5			198		400				
550 - 600	6.3	12		330		500				
600 - 650	8.3	11		267		600		-		
650 - 700	10.0		-	233		70.0				
700 - 750	12.5	7	23	198	-	/00		I		
800 - 850	25.0			119	-	800				
850 - 900	16.7	- 5		160		900				
900 - 950	25.0	5		119		1000				
950 - 1000	16.7	5		160	um	1100				
1000 - 1050	25.0	5	17	119	h (1	1200				
1050 - 1100	25.0			100	ept	1200				
1150 - 1200	10.0	7		233	Q	1300				
1200 - 1250	16.7	7		160		1400				
1250 - 1300	12.5	/	_	198		1500				
1300 - 1350	16.7	7	20	160		1600				
1350 - 1400	12.5			198		1700				
1450 - 1500	16.7	6		160	-	1/00	-			
1500 - 1550	16.7	-		160		1800				
1550 - 1600	12.5	/		198		1900				
1600 - 1650	10.0	11	35	233		2000				
1650 - 1700	8.3		_	267	-	2100				
1750 - 1800	4.5	17		416	-	2200	Inferred B	earing Ca	pacity (50mm In	tervals)
<sup>1</sup> Bearing capacity res	ults stated above have	been inferred	from Fig 2 –	Determination of allowable		2200	Inferred B	earing Ca	pacity (300mm i	itervals)
bearing pressure un conditions at the tim The inferred values	der small structures, 1 he of test and will be h should be used conset	M.J. Stockwell. eavily influenc vatively. IANZ	The results a ed if significa endorsemen	tre relative to the ground int gravel fraction is present. t does not apply to these values.		2300	J	L	I	
NZS 3604:2011, Sect assumed to be not le equal to twice the wi	tion 3.3.7.1 (b) states t ss than 300 kPa if the idth of the widest footi	that the ultimat number of blo ing below the u	te bearing cap ws per 100m nderside of th	pacity of the foundation shall be m exceeds 5 down to a depth he proposed footing and 3 at						
greater depths.		Contach	ical Socie	ty Guidelines 2005 (Not 1	   AN7 A	cerodi	ited). L at 331 600	Paga 11	7 for locati	n nlan
Depth (mm)	Description	- Geotechi	iicai Sucit	ty Guidennes 2005 (NOU		eu		i age 12	27 IOI IUCALIO	n pian
0 to 50	Topsoil & vegeta	tion (organ	ic matter)							
50 to 1250 *	Grey / brown Gr size 37.5mm; Sa	avelly SAN nd, fine to c	D with tra oarse; Silt	ce of / minor silt. Dry. Tig , non-plastic.	htly pac	ked. G	ravel, subangular to	subrou	nded, maxim	um particle
* NZS 3604:2011, denth indicated	Section 3.3.6 requ	ires a minin	num 50mm	diameter auger hole to be co	ompleted	to the	depth of each scala pe	netrome	eter probe. Un	able to complete past the
Note.										
<ul> <li>The result</li> <li>This report</li> </ul>	lts stated above o ort may not be re	ure specific produced e	to the app xcept in f	proximate test locations as ull.	recorde	ed. CT.	S accepts no liability	for an	y extrapolate	ed use of this data.
Tested By:	K. Hipkins, C	Pearson,	T. Shaw	& C. Fisher Date	e:	4	to 23-May-22			
Checked Ry.	em l.	2							ED.	
Checked By.	manus							ACCR	EDITED	
										Test results indicated as not accredited are outside the scope of the

Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

FSTING LABORATO

Page 95 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Client Details:	Veros,	stephenc	@veros.	co.nz			Attention:	3	S. Cornw	vall
Job Descriptio	on: Wooin	g Tree Su	bdivisio	n, Cromwell						
	~~~~	A DELTES	DOVEZ	ED (1/20 1/00 1000 T	( =	T				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 33	2 – See Page 127 for	locatio	n plan	
Depth	Penetration	100	200 vs /	Interred Allowable Boaring Canacity <sup>1</sup>						
(mm)	(mm/blow)	100 mm	500 mm	(kPa)						
0 - 50	50.0	mm	mm	68						
50 - 100	50.0	2		68			Inferred Bear	ing Ca	nacity (k	(Pa)
100 - 150	50.0	2	11	68				ing cu	parenty (in	
150 - 200	25.0	3	11	119		(	0 50 100	150	200	250 300 350
200 - 250	25.0	6		119		0				
250 - 300	12.5	0		198		100				
300 - 350	7.1	12		299		200				
350 - 400	10.0		_	233		300	L			
400 - 450	10.0	- 9	28	255		500			ſ	
500 - 550	16.7			160		400				
550 - 600	12.5	7		198		500				
600 - 650	10.0	0		233		600				
650 - 700	12.5	У	]	198						
700 - 750	16.7	11	33	160		700				
750 - 800	6.3			330		800				
800 - 850	7.1	13		299		900		_		
850 - 900 900 - 950	8.3 12.5		<u> </u>	20/		1000				
950 - 1000	16.7	- 7		160	(m	1000				
1000 - 1050	25.0			119	(m	1100				
1050 - 1100	25.0	4	16	119	th	1200				
1100 - 1150	16.7	5		160	)ep	1300				
1150 - 1200	25.0	3		119	I	1300				
1200 - 1250	25.0	4		119		1400				
1250 - 1300	25.0	-	-	119		1500		┏┿┛		
1300 - 1350	16.7	6	19	160		1600				
1400 - 1450	16.7			160		10000				
1450 - 1500	8.3	9		267		1700				
1500 - 1550	12.5	0		198		1800		-		
1550 - 1600	12.5	0		198		1900				
1600 - 1650	25.0	3	15	119		2000				
1650 - 1700	50.0	-		68		2000				
1750 1800	25.0	- 4		119		2100	Inferred Bear	ing Capa	city (50mm Ir	itervals)
<sup>1</sup> Bearing capacity rest	ults stated above have	been inferred	from Fig 2 –	Determination of allowable		2200	Inferred Bear	ing Cana	city (300mm i	intervals)
bearing pressure und conditions at the tim	der small structures, N e of test and will be h	1.J. Stockwell. avilv influenc	The results a ed if significa	re relative to the ground int gravel fraction is present.		2300		ing cupu		
The inferred values	should be used conser	vatively. IANZ	endorsemen	t does not apply to these values.						
NZS 3604:2011, Sect	tion 3.3.7.1 (b) states t	hat the ultima	te bearing cap	pacity of the foundation shall be						
assumed to be not le equal to twice the wi	ss than 300 kPa if the dth of the widest footi	number of blo ng below the u	ws per 100m nderside of t	m exceeds 5 down to a depth he proposed footing and 3 at						
greater depths.						_				
F	TELD LOG: NZ	L Geotechr	ncal Socie	ty Guidelines 2005 (Not I	ANZ A	ccredi	ted); Lot 332 - See Pa	ige 127	for location	on plan
Depth (mm)	Topsoil & vogeta	tion (organ	ic matter)							
100 to 1500 *	Grey / brown Gr	avelly SAN	D with tra	.ce of / minor silt. Moist. Ti	ghtly pa	acked. (	Gravel, subangular to s	subroui	nded, maxi	mum particle
* NZS 2604-2011	size 53.0mm; San	nd, fine to c	oarse; Silt	, non-plastic.	malat-	1 60 44 -	lanth of cook as -1	tro	n nuche T	-
depth indicated.	secuon s.s.o requ	ires a minin	iam 50mm	unameter auger nole to be co	mpieted	w the d	epui oi each scàla penei	romete	i probe. Un	able to complete past th
Note:										
<ul> <li>The result</li> <li>This report</li> </ul>	lts stated above a ort may not be re	re specific produced e	to the app xcept in fi	proximate test locations as ull.	recorde	ed. CTS	S accepts no liability fo	or any e	extrapolate	ed use of this data.
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	to 23-May-22			
Chasked Dr.										
Checked By:	romania						3	ACCRE	DITED	
								i i i i		Test results indicated
								$\mathbf{\Lambda}$		as not accredited are outside the scope of th

№ 434 Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

"Central Testing Services operates as a trading trust through Central Testing Services Limited as the sole trustee."

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**CTS** 

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Page 96 of 127 Pages

Reference No: 22/1550

as not accredited are outside the scope of the

laboratory's accreditation

TESTING LABORATO

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	@veros.	<u>co.nz</u>		Attention:	S. Cornwall
Job Description	n: Wooing	g Tree Su	ıbdivisio	n, Cromwell			
	SCAL	A DENIET	DOMET	ED (N7S 4402,1099 Test	( 5 2), L at 222	See Dage 127 few least	ion nIon
	SCAL			Inferred Allowable	. 0.3.2); L0t 335 –	See rage 127 for locat	ion pian
Depth	Penetration	100	300	Bearing Canacity <sup>1</sup>			
(mm)	(mm/blow)	mm	mm	(kPa)			
0 - 50	25.0			119			
50 - 100	25.0	4		119		Inferred Bearing	Capacity (kPa)
100 - 150	25.0	3	12	119	0	50 100	150 200 250 300
150 - 200	50.0	5	12	68	0 +		
200 - 250	25.0	5		119	100		
250 - 300	16.7			160	-		
350 - 350	10.7	7		100	200		
400 - 450	16.7			160	300		
450 - 500	16.7	6	18	160	400		
500 - 550	25.0	5		119	500		
550 - 600	16.7	3		160	500		
600 - 650	16.7	9		160	600		
<u>650 - 700</u>	8.3			267	700		
750, 800	25.0 16.7	5	20	119	-		
800 - 850	25.0	-	1	119	800		
850 - 900	12.5	6		198	900		
900 - 950	10.0	0		233	_ 1000		
950 - 1000	16.7	8		160	1100		
1000 - 1050	12.5	8	21	198	<u>e</u> 1100		
1050 - 1100	12.5	Ŭ		198	q 1200		
1100 - 1150	16.7	5		160	<b>0</b> 1300		
1150 - 1200	25.0			68	1400		
1200 - 1230	25.0	3		119	1400		
1300 - 1350	25.0			119	1500		<b>b</b>
1350 - 1400	12.5	6	15	198	1600		
1400 - 1450	12.5	6		198	1700		
1450 - 1500	25.0	U		119	1/00		
1500 - 1550	25.0	5		119	1800		
1550 - 1600	16.7		-	160	1900		
1650 - 1700	23.0	5	16	119	2000		
1700 - 1750	25.0		_	119	2000		
1750 - 1800	12.5	6		198	2100	Inferred Bearing C	anacity (50mm Intervals)
<sup>1</sup> Bearing capacity resu	lts stated above have b or small structures M	een inferred	from Fig 2 –	Determination of allowable	2200	Inferred Bearing (	anacity (300mm intervals)
conditions at the time	of test and will be hea	vily influence	ed if significa	int gravel fraction is present.	2300		apacity (Soomin meervals)
The inferred values s	hould be used conserve	atively. IANZ	endorsemen	t does not apply to these values.			
NZS 3604:2011, Secti assumed to be not les equal to twice the wid	on 3.3.7.1 (b) states th s than 300 kPa if the n th of the widest footin	at the ultimat umber of blo 9 below the u	te bearing cap ws per 100m nderside of tl	pacity of the foundation shall be m exceeds 5 down to a depth he proposed footing and 3 at			
greater depths.	IELD LOG: NZ	Geotechr	nical Socie	ty Guidelines 2005 (Not 1	ANZ Accredited	); Lot 333 - See Page 12	27 for location plan
Depth (mm)	Description			2			-
0 to 150	Topsoil & veget	ation (org	anic matte	er).			
150 to 1100	Brown Silty San size 75.0mm; Sa	ndy GRAV and, fine to	/EL with t o coarse; S	race of cobbles. Dry. Loos ilt, non-plastic.	e. Gravel / cobbles,	, subangular to subroun	ded, maximum particle
1100 to 1300 * * NZS 3604:2011, S	Grey / brown S. Section 3.3.6 requir	AND with res a minin	trace of / 1 num 50mm	minor silt. Moist. Tightly p diameter auger hole to be co	acked. Sand, fine to mpleted to the dept	to coarse; Silt, non-plast th of each scala penetrome	ic. eter probe. Unable to complete past the
Nota:							
<ul> <li>The result</li> <li>This report</li> </ul>	ts stated above ar rt may not be rep	e specific roduced e	to the app xcept in fi	proximate test locations as ull.	recorded. CTS ac	ccepts no liability for an	y extrapolated use of this data.
Tested By: H	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Dat	e: 4 to 2	23-May-22	
Checked By:	emplus					ACCE	EDITED

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

as not accredited are outside the scope of the

laboratory's accreditation

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	@veros.	<u>co.nz</u>		Attention:	S. Cornwall
Job Description	on: Wooing	g Tree Su	ıbdivisio	n, Cromwell			
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	: 6.5.2); Lot 334	- See Page 127 for locat	tion plan
Depth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity			
( )	(	mm	mm	(kPa)			
0 - 50	25.0	5		119	-	Inferred Bearing	Capacity (kPa)
50 - 100	16.7	č		160	4		
100 - 150	16.7	6	19	160	0	50 100	150 200 250
150 - 200	16.7			160			
200 - 250	10.0	8		233	100		
250 - 300	16.7			160	200		
300 - 350	10./	7		100	200		
<u> </u>	12.5			198	300		
400 - 430	12.5	8	21	198	400		
500 - 550	16.7		_	160			
550 - 600	16.7	6		160	500		
600 - 650	12.5	1	1	198	600		
650 - 700	10.0	9		233			
700 - 750	16.7			160	700		
750 - 800	16.7	6	20	160	800		
800 - 850	16.7	<u> </u>	1	160			
850 - 900	25.0	5		119	900		
900 - 950	25.0			119	- 1000		
950 - 1000	25.0	4		119	(m		-
1000 - 1050	25.0	2	10	119	<u> </u>		
1050 - 1100	50.0	3	12	68	<b>5</b> 1200		
1100 - 1150	16.7	-		160	eb		
1150 - 1200	25.0	2		119	A 1300		
1200 - 1250	16.7	6		160	1400		
1250 - 1300	16.7	0		160			
1300 - 1350	16.7	7	10	160	1500		
1350 - 1400	12.5	,	17	198	1600		
1400 - 1450	25.0	6		119			
1450 - 1500	12.5	v		198	1700		_
1500 - 1550	16.7	7		160	1800		
1550 - 1600	12.5	-	_	198	1000		
1600 - 1650	12.5	7	17	198	1900		
1650 - 1700	16.7		_	160	2000		
1700 - 1750	50.0	3		68	2100		
1/50 - 1800	25.0	oon informed	from Fig 2	119 Determination of allowable	2100	———Inferred Bearing C	apacity (50mm Intervals)
bearing pressure un	der small structures, M	J. Stockwell.	The results a	ire relative to the ground	2200	Inferred Bearing C	anacity (300mm intervals)
conditions at the tim	ne of test and will be hed	wily influenc	ed if significa	int gravel fraction is present.	2200		apacay (500mm mittivats)
i ne injerrea values	snouia de asea conserv	uuveiy. IANZ	enuorsemen	i aves not apply to these values.	2500		
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states th	at the ultima	te bearing cap	pacity of the foundation shall be			
assumed to be not le equal to twice the w	ess than 300 kPa if the 1 idth of the widest footin	umper of blo g below the u	ws per 100m nderside of th	m exceeas 5 down to a depth he proposed footing and 3 at			
greater depths.							
	FIELD LOG: NZ	Geotechr	nical Socie	ty Guidelines 2005 (Not l	ANZ Accredite	ed); Lot 334 - See Page 1	27 for location plan
Depth (mm)	Description						
0 to 100	Topsoil & vegetat	ion (organ	ic matter)				
100 to 600 *	Brown Silty Sand	y GRAVE	L with tra	ce of cobbles. Dry. Loose.	Gravel, angular	to subrounded, maximum	particle size 75.0mm;
* N76 2604.0011	Sand, fine to coar	se; Silt, no	on-plastic.	diamatan angan L-1- 1- 1	mulated to the 1	onth of each seals	atan praha Unabla ta aam-1-ta 1
" NZS 3604:2011, denth indicated	section 3.3.6 requi	res a minin	num 50mm	ulameter auger hole to be co	ompleted to the de	epin of each scala penetrom	eter probe. Unable to complete past the
Note:							
The resu	Its stated above a	o snocific	to the apr	provimate test locations as	recorded CTS	accents no liability for a	w extranolated use of this data
<ul> <li>The result</li> <li>This report</li> </ul>	ort may not be rep	e specific roduced e	xcept in fi	ull.	recoraea. CIS	accepts no tablity for an	iy extrupotatea use of this adda.
Fasted D	V Hindian C	Deer	тен	C Fisher Dit	<b>. .</b>	22 May 22	
i ested By:	K. HIPKINS, C.	rearson,	, 1. Shaw	a C. Fisner Dat	e: 4 to	0 20-181ay-22	
Charlend D							
спескеа ву:	remarino	1				"CC	REDITED
							Test results indicated



**(TS**)

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand
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Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, s	tephenc	(a)veros.	co.nz			Attention: S. Cornwall
Job Descriptio	on: Wooing	Tree Su	bdivisio	n, Cromwell			
	SCAL	A PENET	ROMETI	ER (NZS 4402:1988, Test	6.5.2);	Lot 33	35 – See Page 127 for location plan
Denth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
()	()	mm	mm	(kPa)			
0 - 50	25.0	3		119			Lefensel Deside - Construct Desi
50 - 100	50.0	5		68			Inferred Bearing Capacity (kPa)
100 - 150	25.0	6	17	119			0 50 100 150 200 250 300
150 - 200	12.5	U	17	198		0	
200 - 250	12.5	8		198			
250 - 300	12.5	o		198		100	
300 - 350	12.5	7		198		200	
350 - 400	16.7	/		160			
400 - 450	25.0	2	12	119		300	
450 - 500	50.0	3	15	68		400	
500 - 550	50.0	2	1	68	1		
550 - 600	25.0	3		119		500	
600 - 650	50.0			68		600	
650 - 700	25.0	3		119	1	-	
700 - 750	50.0	_	1	68	1	700	
750 - 800	25.0	3	9	119	1	800	
800 - 850	50.0	_	1	68	1		
850 - 900	25.0	3		119	1	900	
900 - 950	50.0			68		1000	
950 - 1000	25.0	3		119	m	2000	
1000 - 1050	50.0	-	1 .	68	(m	1100	
1050 - 1100	50.0	2	11	68	h	1200	
1100 - 1150	25.0			119	ept	1200	
1150 - 1200	12.5	6		198	D	1300	
1200 - 1250	16.7			160		1400	
1250 - 1300	12.5	7		198		2100	
1300 - 1350	10.0			233		1500	
1350 1400	83	11	24	255		1600	
1400 1450	16.7			160		1000	
1400 - 1430	16.7	6		160	-	1700	
1450 - 1500	10.7		-	100	-	1900	
1500 - 1550	10.7	7		100	-	1900	
1550 - 1600	12.5			198	-	1900	
1600 - 1650	16.7	7	19	100	-	2000	
1650 - 1700	12.5		-	198		2000	
1700 - 1750	16.7	5		160	-	2100	
1750 - 1800	25.0	· · · · · · · · · · · · · · · · · · ·	George Else 2	119 Defensive of all second		2200	Inferred Bearing Capacity (50mm Intervals)
bearing capacity resi bearing pressure und	der small structures, M.	een inferred J. Stockwell.	from Fig 2 – The results a	Determination of allowable we relative to the ground		2200	Inferred Bearing Capacity (300mm intervals)
conditions at the tim	e of test and will be hea	vily influenc	ed if significa	nt gravel fraction is present.		2300	
The inferred values s	should be used conserva	tively. IANZ	endorsemen	t does not apply to these values.			
NZS 3604:2011, Sect	tion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be			
assumed to be not les	ss than 300 kPa if the n	umber of blo	ws per 100mi	n exceeds 5 down to a depth			
equal to twice the wi	ain of the widest footing	g below the u	naerside of th	e proposea jooting and 3 at			
F	TELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not 1	ANZ A	Accredi	lited); Lot 335 - See Page 127 for location plan
Depth (mm)	Description						
0 to 200	Topsoil & vegetati	ion (organ	ic matter)				
0.00 200	Grev / brown Cro	velly SAN	D with tro	ce of / minor silt Moist Ti	ahtly n	acked 4	Gravel subangular to subrounded movimum particle
200 to 1300 *	size 53.0mm: Sand	t, fine to c	oarse: Silt	, non-plastic.	<sub>e</sub> nuy p	atheu.	Graves, subangular to subi vunucu, maximum particie
* NZS 3604:2011.	Section 3.3.6 reauin	es a minin	1um 50mm	diameter auger hole to be co	mpleted	to the	depth of each scala penetrometer probe. Unable to complete past the
depth indicated.							
Note:							
• The resul	lts stated above ar	e specific	to the app	proximate test locations as	record	ed. CTS	S accepts no liability for any extrapolated use of this data.
This rena	ort may not be ren	roduced e	xcept in fi	ull.			x
- 11131000		. Juneta C	pi in ji	••••			
Tested By:	K. Hipkins, C. I	Pearson.	T. Shaw	& C. Fisher Dat	e:	4	to 23-May-22
J -	11	····,					v
Checked Rv.	emplin						- 250
Cherken Dy.	rigual						PCCKEDITED
							Test results indicated
							as not accredited are
							outside the scope of the

ESTING LABORATOF

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Reference No: 22/1550

outside the scope of the laboratory's

accreditation

TESTING LABORATO

Nº434

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros, s	tephenc	<u>averos.</u>	co.nz			Attention:	S. Cornw	all
Job Description	on: Wooing	Tree Su	bdivisio	n, Cromwell					
	SCAL	A PENET	POMET	FD (N7S 4407-1088 Tost	652).	Lat 33	6 Saa Paga 127 for locat	ion nlan	
	SCAL	Blo		Inferred Allowable	0.3.2),	L01 33	0 - See 1 age 127 101 10cat		
Depth	Penetration	100	300	Bearing Canacity <sup>1</sup>					
(mm)	(mm/blow)	mm	mm	(kPa)					
0 - 50	25.0			119					
50 - 100	16.7	5		160			Inferred Bearing	Canacity (k	(Pa)
100 - 150	16.7			160			interret Dearing	capacity (ii	(1 m)
150 - 200	12.5	7	23	198			0 50 100 150	200	250 300 350
200 - 250	12.5			198		0			
250 - 300	7.1	11		299		100			
300 - 350	10.0	0		233		200			
350 - 400	12.5	9		198		200		L	
400 - 450	16.7	6	21	160		300			
450 - 500	16.7	U	21	160		400			
500 - 550	16.7	6		160					
550 - 600	16.7	Ů		160		500			
600 - 650	16.7	6		160		600		<b> </b>	
650 - 700	16.7		4	160		700			
700 - 750	25.0	5	16	119		/00		1	
750 - 800	16.7			160		800			
800 - 850	25.0	5		119		900			
850 - 900	16.7	1		160				1	
900 - 950	25.0	5		119	(u	1000			
950 - 1000	16.7			160	mr	1100			
1000 - 1050	10.7	5	16	100	h (	1200			
1100 - 1100	25.0			119	ept	1200			
1150 1200	16.7	6		160	De	1300			
1200 - 1250	25.0			110		1400			
1250 - 1250	167	5		160		1100			
1300 - 1350	16.7			160		1500			
1350 - 1400	12.5	7	19	198		1600			
1400 - 1450	12.5	_		198		1500			
1450 - 1500	16.7	7		160		1700			
1500 - 1550	16.7	(		160		1800			
1550 - 1600	16.7	6		160		1000			
1600 - 1650	16.7	(	10	160		1,000			
1650 - 1700	16.7	0	10	160		2000			
1700 - 1750	16.7	6		160		2100			
1750 - 1800	16.7	U		160			Inferred Bearing Ca	apacity (50mm In	itervals)
<sup>1</sup> Bearing capacity res	ults stated above have b der small structures M	een inferred j 1. Stockwell	from Fig 2 – The results (	Determination of allowable		2200	Inferred Bearing Ca	apacity (300mm i	intervals)
conditions at the tim	e of test and will be hea	vily influence	ed if significa	int gravel fraction is present.		2300			
The inferred values	should be used conserve	tively. IANZ	endorsemen	t does not apply to these values.					
NZS 3604:2011, Sec.	tion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be					
assumed to be not le	ss than 300 kPa if the n	umber of blo whelow the	ws per 100mi nderside of 4	n exceeds 5 down to a depth					
greater depths.	of the watest jobling	, octow the U		re proposed jooung und 5 di					
H	FIELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredi	ted); Lot 336 - See Page 1	27 for location	on plan
Depth (mm)	Description								
0 to 250	Topsoil & vegetat	ion (organ	ic matter)						
250 to 1450 *	Grey / brown Gra	velly SAN	D with tra	ce of / minor silt and trace	of cobb	oles. Dr	y. Loose. Gravel / cobbles, s	ubrounded to	o rounded, maximum
230 to 1450 "	particle size 75.0m	ım; Sand,	fine to coa	rse; Silt, non-plastic.			,		
* NZS 3604:2011,	Section 3.3.6 requin	res a minin	num 50mm	diameter auger hole to be co	ompleted	to the	depth of each scala penetrom	eter probe. Un	able to complete past the
aeptn maicated.									
Note:	14		4- 41			.1	N		
• The resu	its stated above ar	e specific	to the app	proximate test locations as	record	ea. CT	s accepts no liability for an	y extrapolate	a use of this data.
• This repo	ort may not be rep	roduced e.	xcept in fi	ull.					
Tested Rv.	K Hinkins C	Pearson	T Shaw	& C Fisher Date	<b>.</b> .	4	to 23-May-22		
i concu Dy.	13. 111px1113, C. 1	i cai 3011,	1. Shaw	a c. Fisher Dau		-	10 20-111ay-22		
Chasked Dry	man line								
checked By:	romanio						ACCI	LEDITED	
									Test results indicated
							<b>—</b> A		as not accredited are

Page 100 of 127 Pages

Reference No: 22/1550

Test results indicated as not accredited are outside the scope of the laboratory's

accreditation

TESTING LABORATO

Nº434

Date: 26 May 2022

### <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

<b>Client Details</b>	: Veros,	stephenc	@veros.	<u>co.nz</u>		Attention:	S. Cornwall
Job Descripti	on: Wooing	g Tree Su	ıbdivisio	n, Cromwell			
· · · ·		,					
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2); Lot 337 - Se	e Page 127 for locat	ion plan
Denth	Equivalent	Blo	ws /	Inferred Allowable			
(mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>			
()	(mm/blow)	mm	mm	(kPa)	-		
0 - 50	150.0	0.7		25			
50 - 100	150.0	0.7	_	25		Inferred Bearing (	Capacity (kPa)
100 - 150	150.0	1.3	5	25	0	50 100	150 200 250
150 - 200	50.0		_	68	0 ;		
200 - 250	50.0	3		68	100		
250 - 300	25.0			119	100		
300 - 350	25.0	4		119	200		
<u> </u>	25.0			119	300		
400 - 430	25.0	4	13	119	-		
500 - 550	25.0			119	400		
550 - 600	16.7	5		160	500		
600 - 650	25.0	<u> </u>	1	119	600		
650 - 700	25.0	4		119			
700 - 750	25.0	4	10	119	700		
750 - 800	25.0	4	10	119	800		
800 - 850	50.0	2		68			
850 - 900	50.0	2		68	900		
900 - 950	25.0	4		119	☐ 1000		
950 - 1000	25.0	-	_	119	1100		
1000 - 1050	50.0	3	11	68	<u> </u>		
1050 - 1100	25.0	_	_	119	1200		
1100 - 1150	25.0	4		119	<b>1</b> 300		
1150 - 1200	25.0			(9	1400		
1200 - 1250	50.0	2		68	1400		
1300 - 1350	16.7		-	160	1500		
1350 - 1400	16.7	6	14	160	1600		
1400 - 1450	16.7	(		160	1700		
1450 - 1500	16.7	0		160	1700		
1500 - 1550	10.0	10		233	1800		
1550 - 1600	10.0	10		233	1900		
1600 - 1650	10.0	10	28	233	2000		
1650 - 1700	10.0	-	_	233	2000		
1750 1800	10.0	8		233	2100		nacity (50mm Intervals)
<sup>1</sup> Bearing capacity res	sults stated above have b	een inferred	from Fig 2 –	Determination of allowable	2200	Informed Bearing Co	n acity (200mm intervals)
bearing pressure un	ider small structures, M.	J. Stockwell.	The results a	are relative to the ground	2300	Interred Bearing Ca	pacity (Soonini intervals)
conations at the fin The inferred values	ne of test and will be hed should be used conserve	ivity influenc atively. IANZ	ea if significa endorsemen	ini gravei fraction is present. t does not apply to these values.	2000		
N75 264 2011 C.				····			
assumed to be not l	ess than 300 kPa if the n	aa ine utimaa umber of blo	w bearing cap ws per 100m	m exceeds 5 down to a depth			
equal to twice the w	idth of the widest footing	g below the u	nderside of th	he proposed footing and $\hat{3}$ at			
greater aepins.	FIELD LOG: NZ	Geotechr	nical Socie	ty Guidelines 2005 (Not )	[ANZ Accredited): I	Lot 337 - See Page 12	27 for location plan
Depth (mm)	Description				· · · · · · · · · · · · · · · · · · ·		
0 to 200	Topsoil & vegetat	ion (organ	nic matter)	•			
200 to 1300 *	Grey / brown Gra	welly SAN	D with tra	ace of silt. Dry. Loose. Grav	vel, subrounded to ro	unded, maximum par	ticle size 19.0mm;
* N76 2604.2011	Sand, fine to coar	rse; Silt, n	on-plastic.	diamatan ang L-1- 4- 1	mulated to the dead	food and and	aton mucho Tinchio toi-to ( 1
depth indicated.	, эесноп э.э.ө гедин	es a miniñ	ааш зотт	unameter auger note to be co	mpietea to the aepth o	и саси ясана репеtrome	erer probe. Unable to complete past the
Note:							
• The resu	ilts stated above ar	e specific	to the app	proximate test locations as	recorded. CTS acce	ots no liability for an	y extrapolated use of this data.
• This rep	ort may not be rep	roduced e	xcept in f	ull.			
		D	- · ·				
l ested By:	K. Hipkins, C.	Pearson,	I. Shaw	wa C. Fisher Dat	e: 4 to 23-	May-22	
	. //					CCF	EDITE
спескеа Ву:	amarino	,				A	-0



**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 101 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	:	Veros, s	stephenc(	averos.	<u>co.nz</u>			Attentio	n:	S. Cor	nwall		
Job Descripti	on:	Wooing	Tree Su	bdivisio	n, Cromwell								
		SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2); I	Lot 338	8 – See Page 127 1	for locat	ion plan			
Denth	Equ	uivalent	Blo	ws /	Inferred Allowable								
(mm)	Pen	etration	100	300	Bearing Capacity <sup>1</sup>								
()	(mr	n/blow)	mm	mm	(kPa)								
0 - 50	1	100.0	1		36			Inferred E	earing	Capacit	y (kPa)		
50 - 100	1	100.0	1		36								
100 - 150		50.0	2	11	68		0	) 50	100	150	200	250	300
150 - 200		50.0	2	11	68		0						
200 - 250		16.7	0		160		100						
250 - 300		10.0	0		233								
300 - 350		16.7	6		160		200 :					_	
350 - 400		16.7	U		160		300			_			
400 - 450		16.7	6	17	160		-						
450 - 500		16.7	U	17	160		400						
500 - 550		25.0	5		119		500		-				
550 - 600		16.7			160	1							
600 - 650		16.7	5		160	1	600		_				
650 - 700		25.0	5		119	4	700						
700 - 750		16.7	6	17	160	4							
750 - 800		16.7	, v	17	160	_	800						
800 - 850		16.7	6		160	4	900						
850 - 900		16.7	Ť		160		-						
900 - 950		25.0	4		119		1000						
950 - 1000		25.0	-		119	nn	1100		Lumm				
1000 - 1050		25.0	5	15	119	L (r							
1050 - 1100		16.7	÷		160	pth	1200			-			
1100 - 1150		16.7	6		160	Del	1300						
1150 - 1200	_	16.7			160		1500					- I	
1200 - 1250	_	<u>16.7</u>	5		160	_	1400		-		-		
1250 - 1300	-	25.0			119	_	1500						
1300 - 1350		16.7	8	20	160		1300						
1350 - 1400		10.0	1		233	-	1600						
1400 - 1450	-	12.5	7		198	-	1700				-	1	
1450 - 1500	-	10./			100	_	1/00						
1500 - 1550		14.5	7		190		1800						
1550 - 1600		10.7			100		1000						
1650 1700		12.5	9	28	233	-	1900						
1700 - 1750		83			255	-	2000		-				
1750 - 1800		83	12		267		-						
<sup>1</sup> Bearing capacity res	sults stated	above have b	een inferred j	from Fig 2 –	Determination of allowable		2100	Inferred	Bearing C	apacity (50r	nm Interval	s)	
bearing pressure un	nder small	structures, M.	J. Stockwell.	The results a	ire relative to the ground		2200		December - C			Í.	
conditions at the tin The inferred values	ne of test a should be	nd will be hea used conservo	vily influence tively. IANZ	ed if significa endorsemen	int gravel fraction is present. t does not apply to these values.			Inferred	Bearmg C	apacity (300	mm mterva	15)	
The injerten function	511011111 00	useu conserve		entiorsement	abes not apply to these values.		2300 -	•					
NZS 3604:2011, Sec assumed to be not l	ction 3.3.7. ess than 31	1 (b) states the	at the ultimat umber of blo	e bearing cap ws ner 100m	pacity of the foundation shall be m exceeds 5 down to a depth								
equal to twice the w	oidth of the	widest footing	g below the u	nderside of th	he proposed footing and 3 at								
greater depths.			<u>a</u>	• • • •				N X + 4440 C	<b>D</b>	27.6 -			
	FIELD	LUG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not l	IANZ AG	ccredit	ed); Lot 338 - See	e Page 1	27 for loc	ation pla	n	_
Depth (mm)	Descri	ption											
0 to 200	Topsoil	& vegetat	ion (organ	ic matter)	•						10.0		
200 to 1600 *	Grey /	brown Gra	velly SAN	D with tra	ice of silt. Dry. Loose. Grav	vel, subro	ounded	to rounded, maxi	num pa	rticle size	19.0mm;		
* N76 2/04.0011	Sand, f	ine to coars	se; Silt, no	n-plastic.	diamatan ang L-1- 4- 1		to 41 - 1	lanth of oc-t	an at	0404 H L	Unable (		nast 4
" INLS 3004:2011, denth indicated	, Section	5.5.0 requii	res a minim	um 30mm	ulaineter auger hole to be co	mpieted	w the d	epin of each scala p	enetrom	eier probe.	UNADIC to	complete j	DAST THE
Nota.													
The res	ilto stata	d above a	a spacific	to the arr	provimate test locations as	records	d CTS	acconts no liabili	ty for an	w avtrano	lated use	of this day	ta
<ul> <li>The result</li> </ul>	ort man	not he ser	e specijic roducad a	w ine upp	noximule lest locations as all	recorae	u. UIS	accepts no tablil	y jor an	y extrapo	uueu use	oj inis adi	u.
• Inis rep	ori may	noi ve rep	гописеа е.	xcept in fl	ин.								
Tested Bv:	K. Hin	kins. C	Pearson.	T. Shaw	& C. Fisher Dat	e:	4 t	o 23-Mav-22					
	h	,	50119										
Charlend Dy.	11												
спескей ву:	jer	- gen UD							ACCI	REDITED			



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Reference No: 22/1550

outside the scope of the

laboratory's accreditation

ESTING LABORATOF

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros, s	stephene	(a)veros.	co.nz			Attention:	S. Cornw	vall	
Job Descripti	on: Wooing	Tree Su	bdivisio	n, Cromwell						
		DEDUC	DOLTE	ED 0170 4402 1000 -		T				
	SCAL	A PENET	KOMET	EK (NZS 4402:1988, Test	6.5.2);	Lot 339	9 – See Page 127 for loca	tion plan		
Depth	Equivalent	Blo	ws /	Inferred Allowable						
(mm)	Penetration	100	300	Bearing Capacity <sup>1</sup>						
	(mm/blow)	mm	mm	(KPa)						
0 - 50	50.0	3		68			To formed Decoder	C	- <b>D</b> -)	
50 - 100	25.0	Ũ		119			Interred Bearing	Capacity (I	kPa)	
100 - 150	50.0	3	10	68		0	50	100	150	200
150 - 200	25.0	-		119		0 ;				
200 - 250	25.0	4		119		100				
250 - 300	25.0			119		100				
300 - 350	25.0	5		119		200				
350 - 400	16.7			160		200				
400 - 450	16.7	5	13	160		500				
450 - 500	25.0	-		119		400				
500 - 550	50.0	3		68		500				
550 - 600	25.0			119						
600 - 650	50.0	1.5		08		600				
050 - 700	100.0		-	36		700				
700 - 750	100.0	1	4	36						
/50 - 800	100.0		-	36		800				
800 - 850	100.0	1.5		30		900				
850 - 900	50.0	1		08						
900 - 950	25.0	4		119	(u	1000				
950 - 1000	25.0		-	119	mr	1100				
1000 - 1050	25.0	4	14	119	h (	1000				
1050 - 1100	25.0		-	119	pt	1200				
1100 - 1150	10./	6		100	De	1300				
1150 - 1200	10.7	-		100		1400				
1200 - 1250	25.0	5		119		1400				
1230 - 1300	25.0			110		1500				
1300 - 1350	25.0	4	13	119		1600				
1330 - 1400	25.0			119		1000				
1450 1500	25.0	4		119		1700				
1430 - 1300	25.0			119		1800				
1500 - 1550	25.0	4		119						
1600 - 1650	16.7			160		1900				
1650 - 1700	16.7	6	16	160		2000				
1700 - 1750	16.7			160		-				
1750 - 1800	16.7	6		160		2100	Inferred Bearing C	apacity (50mm I	ntervals)	]
<sup>1</sup> Bearing capacity res	sults stated above have b	een inferred j	from Fig 2 –	Determination of allowable		2200	Informed Boaving (	Tan acity (300mm	intornals)	
bearing pressure un	ider small structures, M.	J. Stockwell.	The results a	re relative to the ground		2200	Interred Bearing C	apacity (Southin	mtervais)	J
The inferred values	ne of test and will be ned should be used conserve	vuy influence tively. IANZ	ea if significa endorsemen	t does not apply to these values.		2300 -	•			
N70 2404 2011 0	c 22774)									
assumed to be not l	ction 3.3.7.1 (b) states the ess than 300 kPa if the n	at the ultimat umber of blo	e bearing cap ws per 100mi	pacity of the foundation shall be m exceeds 5 down to a depth						
equal to twice the w	idth of the widest footing	g below the u	nderside of th	he proposed footing and 3 at						
greater depths.	FIFLDLOC. NZ	Contach	ical Socia	ty Cuidalinas 2005 (No+ I	A N 7 4	oorod:4	ad). Lat 330 San Deres 1	27 for lose t	on nlan	
Denth (mm)	Description	Geotechn	ical Socie	ay Guidennes 2005 (Not I	ANL P	cer eult	icuj, Lot 557 - See rage I	2/101 locati	on pian	
	Topsoil & mast 4	ion (creater	in metter)							
0 to 100	Topson & vegetat	ion (organ	ic matter)	• • • • • • • • • • • • • • • • • • • •	D		and makes and the s			
100 to 1500 *	Light yellowish br	own Grav	OBTED SANI	y with trace of / minor silt.	Dry. Lo	oose. Gr	avei, subangular to subroi	inded, maxim	um particle	
* NZS 3604:2011	Section 3.3.6 reasing	i, inc to c	0a150; 5111 1111 50mm	, non-plasue. diameter auger hole to be co	mnleter	l to the d	lenth of each scala nenetrom	eter probe. Un	able to comp	lete nast the
depth indicated.	, section onor requir	co a minili		and the second second second second	preiet	o .ne u	septie of cach scala penetrom			ere past int
Note:										
• The rest	ilts stated above ar	e specific	to the ann	proximate test locations as	record	ed. CTS	accepts no liability for a	nv extranolati	ed use of thi	s data.
This ren	ort may not he ren	roduced e	xcent in fi	ull.				., c aporan		
1113100			pi in fi							
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	o 23-May-22			
-	11									
Checked Bv:	emplus							REDIT	1	
							ACC	ED		
									Test results	indicated
									as not accre	edited are

**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

Page 103 of 127 Pages

Reference No: 22/1550

laboratory's

accreditation

TESTING LABORATO

Nº 434

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, s	tephenc	<u>(a)veros.</u>	<u>:0.nz</u>			Attentio	n: S. Corn	wall
Job Description	n: Wooing	Tree Su	bdivisio	n, Cromwell					
	~~ ~ ~ ~								
	SCALA	A PENET	KOMET	EK (NZS 4402:1988, Test	6.5.2);	Lot 34	10 – See Page 127 f	or location plan	
Depth	Penetration	Blo	ws /	Inferred Allowable					
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>					
· · ·	· /	mm	mm	(KPa)					
0 - 50	50.0	2		68			Informed D	· · · · · · · · · · · · · · · · · · ·	(1-D-)
50 - 100	50.0	-		68			Interred B	earing Capacity	(KPa)
100 - 150	50.0	2	10	68			0 50 100	150 200	250 300 350
150 - 200	50.0	-	10	68		0	· · · · · · · · · · · · · · · · · · ·		
200 - 250	25.0	6		119		400			
250 - 300	12.5	v		198		100			
300 - 350	16.7	5		160		200			
350 - 400	25.0	3		119		20.0			
400 - 450	25.0	4	13	119		300			
450 - 500	25.0	-	15	119		400			
500 - 550	25.0	4		119		500			
550 - 600	25.0	-		119		500			
600 - 650	25.0	4		119		600			
650 - 700	25.0	7	]	119		70.0			
700 - 750	25.0	2	10	119		/00			
750 - 800	50.0	3	10	68		800	<u> </u>		
800 - 850	25.0	2		119		000	<b> + </b>		
850 - 900	50.0	3		68		900			
900 - 950	25.0	4		119		1000			
950 - 1000	25.0	4		119	III			7	
1000 - 1050	50.0			68	(m	1100			
1050 - 1100	25.0	3	11	119	th	1200			
1100 - 1150	25.0			119	ep				
1150 - 1200	25.0	4		119	D	1300			
1200 - 1250	25.0			119		1400			
1250 - 1300	25.0	4		119					
1300 - 1350	12.5			198		1500			
1350 - 1400	16.7	7	21	160		1600			
1400 - 1450	12.5			198					
1450 - 1500	83	10		267		1700			
1500 - 1550	10.0			233		1800			
1550 - 1600	83	11		255					
1600 - 1650	83			267		1900			
1650 - 1700	71	13	36	207		2000			
1700 - 1750	83			255					
1750 1800	83	12		267		2100	Informed 1	Reaving Canacity (50mm	Intervals
<sup>1</sup> Bearing capacity resu	lts stated above have b	een inferred i	from Fig 2 –	Determination of allowable		2200		Bearing Capacity (30mm	
bearing pressure und	er small structures, M.	J. Stockwell.	The results a	re relative to the ground			Inferred I	Bearing Capacity (300m	m intervals)
conditions at the time	of test and will be hea	vily influence	ed if significa ' and aream an	nt gravel fraction is present.		2300	1		
The injerreu values si	iouiu be usea conserva	<i>uively</i> . 1/1/12	enuorsemen	i uoes noi uppiy io inese values.					
NZS 3604:2011, Secti	on 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be					
assumea to be not less equal to twice the wid	s man 500 KPa if the n th of the widest footing	umper of blo g below the u	ws per 100m nderside of tl	n exceeas 5 aown to a depth ne proposed footing and 3 at					
greater depths.	J								
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	Accredi	ted); Lot 340 - See	Page 127 for loca	tion plan
Depth (mm)	Description								
0 to 100	Fopsoil & vegetati	ion (organ	ic matter)						
100 to 1400 *	Light yellowish br	own Grav	elly SANI	) with trace of / minor silt.	Dry. Lo	oose. Gi	ravel, subangular to	subrounded, maxi	mum particle
100 10 1400 *	ize 53.0mm; Sand	l, fine to c	oarse; Silt	, non-plastic.	-		,	-	-
* NZS 3604:2011, S	Section 3.3.6 requir	res a minin	um 50mm	diameter auger hole to be co	mpletee	d to the	depth of each scala po	enetrometer probe. l	Inable to complete past the
depth indicated.									
Note:									
• The result	ts stated above ar	e specific	to the app	proximate test locations as	record	ed. CT.	S accepts no liabilit	y for any extrapola	ted use of this data.
• This report	rt may not be rep	roduced e	xcept in fi	ull.					
-									
Tested By: F	K. Hipkins, C. I	Pearson,	T. Shaw	& C. Fisher Date	e:	4	to 23-May-22		
	11								
Checked By:	emplus							CREDIT	1
v								PCONED	
									Test results indicated
									as not accredited are

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Reference No: 22/1550

as not accredited are outside the scope of the laboratory's

accreditation

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros, s	stephenc	(a)veros.	co.nz			Attention: S. Cornwall
Job Description	on: Wooing	<u>;</u> Tree Su	<u>ibdivisio</u>	n, Cromwell			
	~~				<		
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	: 6.5.2);	Lot 341	41 – See Page 127 for location plan
Denth	Penetration	Blo	ws /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
( )	(	mm	mm	(kPa)			
0 - 50	50.0	2		68			
50 - 100	50.0	-		68			Interred Bearing Capacity (kPa)
100 - 150	25.0	6	22	119		0	0 50 100 150 200 250 300 350 400 450
150 - 200	12.5	v		198		0 ±	
200 - 250	12.5	14		198		100	
250 - 300	5.0			388		100	
300 - 350	5.0	15		388		200	
350 - 400	10.0	10		233		200	
400 - 450	16.7	5	25	160		500	
450 - 500	25.0	-		119		400	
500 - 550	16.7	5		160		500	
550 - 600	25.0			119		:	
600 - 650	25.0	5		119	-	600	
650 - 700	16.7		4	160	-	700	
700 - 750	25.0	3	11	119	-		
/50 - 800	50.0	ł	4	68	-	800	
800 - 850	25.0	3		119	-	900	
850 - 900	50.0			68	-		
900 - 950	25.0	3		119	u (i	1000	
950 - 1000	50.0			68	mn	1100	
1000 - 1050	25.0	3	10	119	1 (I		
1050 - 1100	50.0		_	<u> </u>	ptl	1200	
1100 - 1150	25.0	4		119	De	1300	
1150 - 1200	25.0			119		1400	
1200 - 1250	25.0	4		119	-	1400	
1230 - 1300	23.0			69		1500	
1300 - 1330	30.0	4	15	160		1600	
1330 - 1400	12.5			100		1000	
1450 - 1500	16.7	7		160		1700	
1500 - 1550	16.7			160		1800	
1550 - 1600	16.7	6		160		1000	
1600 - 1650	12.5			198		1900	
1650 - 1700	12.5	8	21	198		2000	
1700 - 1750	16.7	_		160		-	
1750 - 1800	12.5	7		198		2100	Inferred Bearing Canacity (50mm Intervals)
<sup>1</sup> Bearing capacity res	ults stated above have b	een inferred	from Fig 2 –	Determination of allowable		2200	
bearing pressure un	der small structures, M.	J. Stockwell.	The results of the second seco	are relative to the ground		2200	
The inferred values	should be used conserve	atively. IANZ	endorsemen	t does not apply to these values.		2300 -	
N70 2(04-2011 G	1						
assumed to be not la	tion 5.5.7.1 (b) states the ess than 300 kPa if the n	at the utimat umber of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the w	idth of the widest footing	g below the u	nderside of th	he proposed footing and $\hat{3}$ at			
greater depths.	FIELD LOG: NZ	Geotechr	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredit	ited): Lat 341 - See Page 127 for location plan
Denth (mm)	Description	Geoteenn	incar Socie			<u>icci cuit</u>	iteu), Eot 341 - See 1 age 127 for location plan
0 to 50	Tonsoil & vogetet	ion (organ	ic matter)				
01030	Light vellowich by	own Cros	elly SANI	) with trace of / minor silt	Dry L	ose Cr	ravel subangular to subrounded maximum particle
50 to 1500 *	size 53.0mm: Sand	d. fine to c	oarse: Silt	, non-plastic.	DIY. LA	JUSC. GI	navei, subangular to subrounded, maximum particle
* NZS 3604:2011.	Section 3.3.6 requir	res a minin	num 50mm	diameter auger hole to be co	mpleted	l to the d	depth of each scala penetrometer probe. Unable to complete past the
depth indicated.							
Note:							
• The resu	lts stated above ar	e specific	to the app	proximate test locations as	record	ed. CTS	'S accepts no liability for any extrapolated use of this data.
• This rep	ort may not be rep	roduced e	xcept in f	ull.			· · · · · ·
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	to 23-May-22
	//						
Checked By:	emplus						CCREDITA
-							P
							Test results indicated



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Reference No: 22/1550

outside the scope of the laboratory's

accreditation

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Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros, s	stephenc	<u>(a)veros.</u>	<u>co.nz</u>			Attention: S. Cornwall
Job Description	on: Wooing	Tree Su	bdivisio	n, Cromwell			
	SCAL	A PENET	ROMET	FR (NZS 4402-1988 Tost	6521	Lot 3/	342 – See Page 127 for location plan
	SCAL			Inferred Allowable	0.3.2),	LUI 34	542 – See Lage 127 for location plan
Depth	Penetration	100	300	Rearing Canacity <sup>1</sup>			
(mm)	(mm/blow)	mm	mm	(kPa)			
0 - 50	50.0			68	1		
50 - 100	25.0	3		119			Inferred Bearing Capacity (kPa)
100 - 150	16.7	_		160			
150 - 200	12.5	7	16	198	1	(	0 50 100 150 200 250 300 350
200 - 250	25.0	(		119	1	0	
250 - 300	12.5	6		198		100	
300 - 350	25.0	(		119	1	200	
350 - 400	12.5	0		198		200	
400 - 450	7.1	14	30	299		300	
450 - 500	7.1	14	50	299		400	
500 - 550	10.0	10		233		500	
550 - 600	10.0	10		233		500 :	
600 - 650	16.7	6		160		600	
650 - 700	16.7	-	-	160	-	700	
700 - 750	16.7	5	17	160		/00	
750 - 800	25.0		-	119		800	
800 - 850	16.7	6		160		900	
850 - 900	16.7			160	-		
900 - 950	25.0	4		119	(u	1000	
950 - 1000	25.0		-	119	mr	1100	
1000 - 1050	25.0	4	12	119	h (	1200	
1100 - 1100	25.0			119	pt	1200	
1150 1200	25.0	4		119	De	1300	
1200 - 1200	167			160	-	1400	
1250 - 1250	16.7	6		160		1400	
1300 - 1350	25.0			119	1	1500	
1350 - 1400	25.0	4	16	119		1600	
1400 - 1450	16.7			160	1		
1450 - 1500	16.7	6		160		1700 :	
1500 - 1550	10.0			233	1	1800	
1550 - 1600	8.3	11		267		1000	
1600 - 1650	7.1	12	24	299		1900	
1650 - 1700	8.3	15	54	267		2000	
1700 - 1750	10.0	10		233		2100	
1750 - 1800	10.0	10		233		-	Inferred Bearing Capacity (50mm Intervals)
<sup>1</sup> Bearing capacity res bearing pressure un	ults stated above have b der small structures. M.	een inferred j J. Stockwell.	from Fig 2 – The results (	Determination of allowable we relative to the ground		2200	Inferred Bearing Capacity (300mm intervals)
conditions at the tim	e of test and will be hea	wily influence	ed if significa	int gravel fraction is present.		2300	) ]
The inferred values	should be used conserve	atively. IANZ	endorsemen	t does not apply to these values.			
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states the	at the ultimat	e bearing ca	pacity of the foundation shall be			
assumed to be not le equal to twice the w	ess than 300 kPa if the n idth of the widest footing	umber of blo a below the u	ws per 100m nderside of ti	m exceeds 5 down to a depth the proposed footing and 3 at			
greater depths.	of the macsi footing	, secon me u		r posca jooning una 5 ai			
I	FIELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	IANZ A	ccredi	dited); Lot 342 - See Page 127 for location plan
Depth (mm)	Description						
0 to 50	Topsoil & vegetat	ion (organ	ic matter)	•			
50 to 1200 *	Light greyish bro	wn Gravel	ly Silty SA	ND. Dry. Loose. Gravel, su	ubangul	ar to su	subrounded, maximum particle size 26.5mm;
* N75 261 2011	Sand, fine to coars	se; Silt, no	n-plastic.	diamatan array bill i		40.41	a doubt of each cools wanter and the second state of the second st
" NZS 3604:2011, denth indicated	section 3.3.6 requir	res a minin	um 50mm	ulameter auger hole to be co	mpleted	to the d	e uepth of each scala penetrometer probe. Unable to complete past the
Note:							
• The resu	Its stated above av	e snecific	to the arr	proximate test locations as	recorde	d CTS	TS accents no lightlity for any extrapolated use of this data
<ul> <li>The result</li> <li>This ron.</li> </ul>	ns suice above ar ort may not he ren	roducod o	xcent in f	ull	. ccorde	010	is accepts no haotany for any extrapolated use of this dall.
- Inis repo	ni muy noi ve rep	i ouuceu e	леері іп ј	****			
Tested By:	K. Hipkins, C. I	Pearson.	T. Shaw	& C. Fisher Date	e:	4 t	4 to 23-May-22
e '	11	7					
Checked By:	Imples						CREDIS
Dy.	101110						PCUNTED
							Test results indicated
							as not accredited are



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Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, s	tephenc	<u>(a)veros.</u>	<u>co.nz</u>			Attention:	S. Cornw	all
Job Descriptio	on: Wooing	Tree Su	bdivisio	n, Cromwell					<u> </u>
	604T 4	DENET	DOMET	ED (NIZE 4403 1000 T -	( = ))	I -4 24	2 S D 107 6		
	SCALA	A PENEI	KUMET	LK (NZS 4402:1988, Test	0.5.2);	LOT 543	o - See Page 12/ for loca	tion plan	
Depth	Penetration	BI0	WS /	Interred Allowable Bearing Conseits 1					
(mm)	(mm/blow)	100	300	Bearing Capacity					
0.50	25.0	mm	mm	(KF a)	-				
0 - 50	25.0	3		119			Inforred Rearing	Canacity (1	vPa)
50 - 100	50.0		-	68			merreu bearing	Capacity (i	<b>(1</b> <i>a</i> <b>)</b>
100 - 150	50.0	5	14	68		0	50 100 150	200 250	300 350 400
150 - 200	12.5		-	198	-	0 ;			
200 - 250	25.0	6		119	-	100			
250 - 300	12.5			198	-	100			
300 - 350	10.7	8		160	-	200			
350 - 400	10.0		-	233	-	300			
400 - 450	10.0	11	32	255		-			
430 - 300	0.5		1	207	-	400			
550 600	6.3	13		330		500			L
<u> </u>	0.5			200	-				
650 700	12.5	11		108	1	000			
700 - 750	12.3		1	100	1	700			
750 - 800	10.0	9	36	233	1	800			
800 - 850	7 1		1	200	1	800			
850 - 900	56	16		350	1	900			
900 - 950	12.5			198	1	1000			
950 - 1000	16.7	7		160	(m	1000		_	
1000 - 1050	16.7			160	E I	1100			
1050 - 1100	12.5	7	19	100	h (	1200			
1100 - 1150	25.0			110	ept	1200			
1150 - 1200	16.7	5		160	De	1300			
1200 - 1250	50.0			68		1400			
1200 - 1200	25.0	3		119		1400			
1300 - 1350	25.0			119		1500			
1350 - 1400	25.0	4	13	119		1600			
1400 - 1450	16.7			160		1000			
1450 - 1500	16.7	6		160		1700			
1500 - 1550	25.0			119		1800			
1550 - 1600	25.0	4		119					
1600 - 1650	16.7			160		1900			
1650 - 1700	16.7	6	15	160		2000			
1700 - 1750	16.7	_		160		-			
1750 - 1800	25.0	5		119		2100	Inferred Bearing (	anacity (50mm I	ntervals)
<sup>1</sup> Bearing capacity resi	ults stated above have be	een inferred	from Fig 2 –	Determination of allowable		2200			
bearing pressure und	der small structures, M.	J. Stockwell.	The results a	re relative to the ground		-	Inferred Bearing (	apacity (300mm	mtervals)
Conditions at the fim The inferred values	e oj test and will be hea should be used conserva	vuy influence ttively. IANZ	eu ij significa ' endorsemen	ini gravel fraction is present. t does not apply to these values.		2300 1	II		here we have a second s
N/76 2001 -									
NZS 3604:2011, Sect assumed to be not lea	von 3.3.7.1 (b) states tha ss than 300 kPa if the m	u the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth					
equal to twice the wi	dth of the widest footing	g below the u	nderside of th	he proposed footing and 3 at					
greater depths.	TELDIOC NZ	Castal	inal C ·	tu Cuidalin - 2005 AL ( 1	A 1977 - 4	aar	rod). Lot 242 C P 1	27 fr 1	n nlan
F Donth (march)	IELD LUG: NZ	Geotechn	lical Socie	ay Guidennes 2005 (Not I	IANZ A	ccreat	euj; Lot 545 - See Page I	2 / 10r locatio	n pian
Deptil (mm)	Tengoil 8	an (c							
0 to 100	Topson & vegetati	ion (organ	ne matter)	·	a		4		106 0
100 to 1000 *	Brown Silty Sandy	y GRAVE	L with tra	ce of cobbles. Dry. Loose. (	sravel,	angular	to subrounded, maximum	particle size	106.0mm;
* NZS 3604.2011	Sanu, nne to coars Section 3 3 6 roamin	se; 511t, 110 'es a minin	n-piastic.	diameter auger hale to be a	mnlatad	to the d	lenth of each scale nonatron	eter proba Un	able to complete post the
depth indicated.	Section S.S.O I Equil	<i>c5 a mmm</i>	am Jomm	diameter auger note to De Co	mpreteu	. <i>o</i> .ne u	epin of cach scala penelloll		ion to compicie pasi life
Note:									
The result	lts stated above ar	e specific	to the app	proximate test locations as	recorda	ed. CTS	accepts no liability for a	ıv extranolatı	ed use of this data.
This rong	ort may not he ren	roduced e	xcent in fi	ull.			accepts no anomy jor m	., can apoint	
- 1 <i>nis rep</i> 0	n muy not be repl	ounceu e	ncepi in fl	****					
Tested Bv:	K. Hipkins, C. I	Pearson.	T. Shaw	& C. Fisher Date	e:	4 t	o 23-May-22		
	· ····, ···						··		
Checked Rv•	emplin							BEDI	I
Cherned Dy.	rengeral						ACC	EDITED	
									Test results indicated
									as not accredited are
									outside the scope of the

Nº 434 Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing

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Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	averos.	<u>co.nz</u>		Attention:	S. Cornwall	
Job Descriptio	on: Wooing	Tree Su	bdivisio	n, Cromwell				
	SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 344	4 – See Page 127 for locat	ion plan	
Denth	Demotionation	Blo	ws /	Inferred Allowable				
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>		Inferred Rearing	Canacity (kPa)	
(mm)	(mm/blow)	mm	mm	(kPa)		Interret Dearing	cupacity (Mr a)	
0 - 50	25.0			119	0	100 200 300	400 500 600 700	
50 - 100	50.0	3		68	0			
100 - 150	50.0	2	10	68	100			
150 - 200	25.0	3	19	119				
200 - 250	16.7	12		160	200			
250 - 300	5.0	13		388	300			
300 - 350	5.0	15		388				
350 - 400	10.0	15		233	400			
400 - 450	12.5	10	12	198	500			
450 - 500	8.3	10	43	267	(00			
500 - 550	5.0	18		388	000			
550 - 600	6.3	10		330	700			
600 - 650	10.0	12		233	800			
650 - 700	7.1	12		299				
700 - 750	12.5	10	43	198				
750 - 800	8.3	10		267	1000			
800 - 850	5.0	21		388	<u> </u>			
850 - 900	4.5	21		416	E 1100			
900 - 950	3.6	27		497	<b>4</b> 1200			
950 - 1000	3.8	27	-	471	bda			
1000 - 1050	5.6	17	60	359	Q 1300			
1050 - 1100	6.3			330	1400			
1100 - 1150	8.3	16		267				
1150 - 1200	5.0			388	1500			
1200 - 1250	8.3	12		267	1600			
1250 - 1300	8.3			267				
1300 - 1350	10.0	11	50	233	1700			
1350 - 1400	8.3			267	1800			
1400 - 1450	7.1	27		299				
1450 - 1500 Defusel	2.5	I	I	045	1900			
<sup>1</sup> Bearing canacity rest	ults stated above have b	een inferred	from Fig 2 –	Determination of allowable	2000			
bearing pressure und	der small structures, M.	J. Stockwell.	The results a	re relative to the ground	2100			
conditions at the tim	e of test and will be hea should be used conserve	vily influence tively 14N7	ed if significa endorsemen	int gravel fraction is present. t does not apply to these values	2100	Inferred Bearing C	apacity (50mm Intervals)	
ine injerreu values	sound be used conserve		chaorsemen	i uses not upply to these values.	2200	Inferred Bearing C	anacity (300mm intervals)	
NZS 3604:2011, Sect	tion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be	2300			
equal to twice the wi	dth of the widest footing	g below the u	nderside of th	n exceeds 5 down to a depth he proposed footing and 3 at	2000			
greater depths.					l			
F	TELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not l	ANZ Accredit	ed); Lot 344 - See Page 12	27 for location plan	
Depth (mm)	n) Description							
0 to 200	Topsoil & vegetation (organic matter).							
200 to 1500	Brown Silty Sandy GRAVEL with trace of cobbles. Dry. Loose. Gravel / cobbles, angular to subrounded, maximum particle size 75.0mm;							
200 10 1300	Sand, fine to coars	se; Silt, no	n-plastic.				-	
* NZS 3604:2011,	Section 3.3.6 requi	ires a minii	num 50mn	n diameter auger hole to be c	ompleted to the d	lepth of each scala penetrom	eter probe.	
Note:								
• The resul	lts stated above ar	e specific	to the app	proximate test locations as	recorded. CTS	accepts no liability for an	y extrapolated use of this data.	

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Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher Date: 4 to 23-May-22

Checked By:

emplus



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Page 108 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details	: Veros,	stephenc	averos.	co.nz		Attention:	S. Cornwall
Job Descripti	on: Wooin	ig Tree St	ıbdivisio	n, Cromwell			
· · · · · · · · · · · · · · · · · · ·		-					
	SCAL	LA PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2); Lot 345 – S	ee Page 127 for loca	tion plan
Donth	Depatuation	Blo	ws /	Inferred Allowable			
Depth	renetration (mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
(mm)	(mm/biow)	mm	mm	(kPa)			
0 - 50	50.0			68		Informed Despire	Compatity (LDa)
50 - 100	25.0	- 3		119		Interred Bearing	Capacity (KPa)
100 - 150	25.0			119	0	50 100	150 200 250
150 - 200	12.5	6	16	198	0		
200 - 250	12.5	_		198			
250 - 300	16.7	7		160	100		
300 - 350	12.5			198	200		
350 - 400	25.0	6		119			
400 - 450	25.0	-	1	119	300		
450 - 500	50.0	3	14	68	400		
500 - 550	25.0	_		119			
550 - 600	16.7	5		160	500		
600 - 650	25.0	-	1	119	600		
650 - 700	16.7	5		160			
700 - 750	50.0	-		68	700		
750 - 800	25.0	3	11	119	800		
800 - 850	50.0			68			
850 - 900	25.0	- 3		119	900		
900 - 950	25.0			119	1000		
950 - 1000	50.0	- 3		68	n (n		
1000 - 1050	25.0	_	1	119	<u>E</u> 1100		
1050 - 1100	16.7	5	12	160	5 1200		
1100 - 1150	25.0			119	eb		-
1150 - 1200	25.0	- 4		119	A 1300		
1200 - 1250	50.0	-		68	1400		
1250 - 1300	25.0	3		119			
1300 - 1350	25.0	-	1.0	119	1500		
1350 - 1400	16.7	5	12	160	1600		
1400 - 1450	25.0			119	1000		
1450 - 1500	25.0	- 4		119	1700		
1500 - 1550	25.0	_		119	1800		
1550 - 1600	16.7	5		160	1000		
1600 - 1650	25.0		1	119	1900		
1650 - 1700	25.0	- 4	12	119	2000		
1700 - 1750	25.0			119	2000		
1750 - 1800	50.0	3		68	2100		
<sup>1</sup> Bearing capacity re.	sults stated above have	been inferred	from Fig 2 –	Determination of allowable	2200	Inferred Bearing C	apacity (50mm Intervals)
bearing pressure un	ider small structures, I	M.J. Stockwell.	The results of the results of the signal of the second sec	are relative to the ground	22.00	Inferred Bearing C	apacity (300mm intervals)
The inferred values	should be used conse	vatively. IANZ	ca ij signijiči Cendorsemen	t does not apply to these values.	2300		
N75 3(6) 3011 5	c 22510						
NZS 3604:2011, Sec assumed to be not l	ction 3.3.7.1 (b) states i ess than 300 kPa if the	that the ultima number of bla	te bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the w	idth of the widest foot	ing below the u	nderside of th	he proposed footing and 3 at			
greater depths.		7.0		4. C: J. B	LANZ ALL PAR	I-4245 0 D 4	27 from 1 = = = 4 i = m = m 1
Denth (	Presidenti	L Geotechi	ncai Socie	ety Guidennes 2005 (Not	IANZ Accredited);	Lot 345 - See Page I	27 for location plan
Deptn (mm)	Description		•				
0 to 50	Topsoil & vegeta	ation (orgar	uc matter)	•			
50 to 1400 *	Brown Silty San	dy GRAVE	L. Dry. Lo	oose. Gravel, angular to su	brounded, maximun	n particle size 53.0mm	; Sand, fine to coarse;
4 N/7C 2/04 2011	Silt, non-plastic.		70			e 1 1 /	
" INZS 3604:2011 denth indicated	, section 3.3.6 requ	ures a minin	num 50mm	uiameter auger hole to be co	ompleted to the depth	oi each scala penetrom	eter probe. Unable to complete past th
Noto:							
Note:	Its stated at	ano ca	to the	novimata tast la+	waaandad CTO -	ants no linkilite for	an artuan plated was of the 1-1
• Ine resi	uis statea above a	ire specific	to the app	vroximate test locations as	recoraea. CIS acc	epis no naonity for ai	iy exirapoiatea use of this data.
• This rep	ort may not be re	produced e	xcept in f	ин.			
Tested Rv•	K Hinkins C	Pearson	T Show	& C Fisher Dat	e. 4 to 23	-May-22	
ronu Dy.	is, inpans, C	. 1 vai 3011,	1. Slidy	a corright Dat	·· · · · · · · · · · · · · · · · · · ·	- 1710y-22	
Charles J D							
Unecked By:	emplu	0				LCC	REDITED



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Page 109 of 127 Pages

Reference No: 22/1550

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**Central Testing Services** 

Date: 26 May 2022

### <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>



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**Tested By:** K. Hipkins, C. Pearson, T. Shaw & C. Fisher 4 to 23-May-22 Date:

**Checked By:** 

emplus



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Page 110 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### EST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	tephenc	averos.	<u>co.nz</u>		Attention:	S. Cornwall	
Job Description	1: Wooing	Tree Su	bdivisio	n, Cromwell				
							· -	
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 347 – S	ee Page 127 for locat	tion plan	
Depth	Penetration	Blo	ws /	Inferred Allowable				
(mm)	(mm/blow)	100	300	Bearing Capacity				
0.50	25.0	mm	mm	(KFA)		Informed Descript	Capacity (LDa)	
0 - 50	25.0	4		119		Interred bearing	Capacity (KF a)	
<u> </u>	25.0			119	0	100 200	300 400 500 600	
150 - 200	83	10	23	267	0		· · · · · · · · · · · · · · · · · · ·	
200 - 250	12.5			198	100			
250 - 300	10.0	9		233		L		
300 - 350	12.5	7		198	200			
350 - 400	16.7	/		160	300			
400 - 450	12.5	8	24	198	100			
450 - 500	12.5	Ů		198	400			
500 - 550	12.5	9		198	500			
550 - 600	12.5			233	600			
650 - 700	10.0	9		233				
700 - 750	10.0			233	700			
750 - 800	8.3	11	36	267	800			
800 - 850	5.6	16	]	359	000			
850 - 900	7.1	10		299	900			
900 - 950	10.0	11		233	<b>a</b> <sup>1000</sup>			
950 - 1000	8.3		-	267	8 1100			
1000 - 1050	5.0	26	55	388	u (i			
	3.1			548	1200 d			
1150 - 1200	8.3	18		267	<b>õ</b> 1300			
1200 - 1250	7.1			299	1400			
1250 - 1300	16.7	10		160	1400			
1300 - 1350	16.7	5	20	160	1500			
1350 - 1400	25.0	3	20	119	1600			
1400 - 1450	25.0	5		119				
1450 - 1500	16.7	-		160	1700			
1500 - 1550	16.7	6		160	1800			
1600 - 1650	10.7			233	1900			
1650 - 1700	12.5	9	22	198	1200			
1700 - 1750	16.7	_		160	2000			
1750 - 1800	12.5	/		198	2100			
<sup>1</sup> Bearing capacity result bearing pressure under	ts stated above have b er small structures. M	een inferred 1 Stockwell	from Fig 2 – The results o	Determination of allowable are relative to the ground	2200	——— Inferred Bearing C	Capacity (50mm Intervals)	
conditions at the time	of test and will be hea	vily influenc	ed if significa	int gravel fraction is present.	2200	Inferred Bearing C	Capacity (300mm intervals)	
The inferred values sh	ould be used conserve	itively. IANZ	endorsemen	t does not apply to these values.	2300	1		
NZS 3604:2011, Section assumed to be not lass	on 3.3.7.1 (b) states the	at the ultimat	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth				
equal to twice the widt	th of the widest footing	g below the u	nderside of th	he proposed footing and 3 at				
greater depths.	FLDLOG NZ	Geotecha	ical Socio	ty Guidelines 2005 (Not 1	ANZ Accredited).	Lot 347 - See Page 1	27 for location plan	
Depth (mm)	Description	Stottill				age 1	2. 101 location plan	
0 to 100	Topsoil & veget	ation (org	anic matte	er).				
100 to 1100	Brown Silty San Sand, fine to co	ndy GRAV arse: Silt.	EL with t non-plasti	race of cobbles. Dry. Loose c.	e. Gravel, angular to	subrounded, maximu	m particle size 75.0mm;	
1100 to 1550 *	Grey SAND wit	h trace of	/ minor si	t. Drv. Loose. Sand. fine to	coarse; Silt. non-nl	astic.		
* NZS 3604:2011, S	* NZS 3604:2011, Section 3.3.6 requires a minimum 50mm diameter auger hole to be completed to the depth of each scala penetrometer probe. Unable to complete past the							
depth indicated.	depth indicated.							
Note:			4- 41-					
The result     This name	s stated above ar	e specific	to the app	proximate test locations as	recorded. CTS acce	epts no liability for an	y extrapolated use of this data.	
<ul> <li>Inis repor</li> </ul>	ı muy noi be rep	iouucea e	лсері in fi	ин.				
Tested By: K	. Hipkins, C. I	Pearson,	T. Shaw	& C. Fisher Dat	e: 4 to 23	-May-22		
	//					CCI	REDITE	



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Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz Page 111 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, s	tephenc	<u>@veros.</u>	<u>co.nz</u>			Attention: S. Cornwall
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell			
	COLL	DENET	DOMET	ED (N/75 4403-1000 T 4	65.22	L	249 See Dage 127 for leasting -1
	SCAL	A FENEL	KUMET	LK (NLS 4402:1988, Test	0.5.2);	LOT 54	540 – See rage 127 for location plan
Depth	Penetration	Blo	ows /	Inferred Allowable			
(mm)	(mm/blow)	100	300	Bearing Capacity			
		mm	mm	(KPa)	-		
0 - 50	50.0	3		68			Inferred Bearing Capacity (kPa)
50 - 100	25.0			119			0 100 200 200 400 500
100 - 150	25.0	6	15	119		0	
150 - 200	12.5	Ů		198		Ŭ	
200 - 250	25.0	6		119		100	
250 - 300	12.5	v		198		200	
300 - 350	16.7	13		160		200	
350 - 400	5.0	10		388		300	
400 - 450	6.3	19	51	330			
450 - 500	4.5	17	51	416		400	
500 - 550	4.2	19		444		500	
550 - 600	7.1	17		299			
600 - 650	8.3	13		267		600	
650 - 700	7.1	15		299		700	
700 - 750	16.7	7	24	160			
750 - 800	12.5	/	24	198		800	
800 - 850	50.0	4		68		000	
850 - 900	16.7	7		160		900	
900 - 950	16.7	11		160		1000	
950 - 1000	6.3	11		330	III		
1000 - 1050	7.1	15	20	299	(m	1100	
1050 - 1100	6.3	15	39	330	th	1200	
1100 - 1150	8.3	12		267	ep		
1150 - 1200	7.1	13		299	D	1300	
1200 - 1250	7.1	15		299	1	1400	
1250 - 1300	6.3	15		330		1400	
1300 - 1350	6.3	10		330		1500	
1350 - 1400	5.0	18	47	388		1600	
1400 - 1450	6.3			330		1000	
1450 - 1500	8.3	14		267		1700	
1500 - 1550	10.0			233		1000	
1550 - 1600	8.3	- 11		267		1800	
1600 - 1650	10.0			233	1	1900	
1650 - 1700	12.5	9	30	198			
1700 - 1750	10.0	4.0		233	1	2000	
1750 - 1800	10.0	10		233	1	2100	
<sup>1</sup> Bearing capacity resu	ilts stated above have b	een inferred	from Fig 2 –	Determination of allowable	1	2100	Inferred Bearing Capacity (50mm Intervals)
bearing pressure und	ler small structures, M.	J. Stockwell.	The results a	ire relative to the ground		2200	Inferred Bearing Canacity (300mm intervals)
The inferred values s	e of test and will be neu should be used conserva	tively. IANZ	ea ij signijica Cendorsemen	t does not apply to these values.		2300	
N/76 ) (6 : 2011 -		-				2000	
NZS 3604:2011, Sect assumed to be not les	ion 3.3.7.1 (b) states the ss than 300 kPa if the n	u the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the wi	dth of the widest footing	g below the u	nderside of th	he proposed footing and 3 at			
greater depths.	TELDIOC NZ	Cart		4. C			$J_{4-1}$ , $J_{-4,240}$ , $C_{}$ , $D_{}$ , 107 f. 1 (* 1
F Denth (	IELD LUG: NZ	Geotechn	lical Socie	ty Guidennes 2005 (Not I	IANZ A	ccredi	uneu); Lot 348 - See Page 12 / Ior location plan
Deptn (mm)	Description		•				
0 to 50	1 opsoil & vegetati	ion (organ	uc matter)	•	-		
50 to 1400 *	Brown Silty Sandy	y GRAVE	L. Moist.	Fightly packed. Gravel, sub	oangula	r to sub	ubrounded, maximum particle size 53.0mm;
* N76 2604.2011	Sanu, fine to coars	se; Silt, sli	gnt plastic	ily. diamatan anger kala ta k	malate	I to the	a donth of anot sould nanotenmetor puchs Unable to complete + ++ -
depth indicated	эссион э.э.ө гедин	сэ а ший	аш этт	unameter auger noie to de co	mpietea	i i ine i	e acpen of each scala penetrometer prove. Unable to complete past the
Note:							
The second	ts stated above ~~	a spaaifia	to the ar-	provimate test locations as	rocoud	od CT	TS accents no liability for any artranolated use of this data
- The resul	is suice above ar	e specific voducad s	w ine upp	and annual rest locations as all	record	cu. C12	is accepts no taotaty for any extrapolated use of this data.
<ul> <li>Inis repo</li> </ul>	ri may not be rep	rvaucea e	xcept in fi	ин.			
Tested Bv•	K. Hinkins C	Pearson	T. Shaw	& C. Fisher Dat	e:	4	4 to 23-May-22
Lesicu Dy.		. cui solly	1. Shaw	a company Date	••		1 to 20 1121 22
Chastral P							
Cnecked By:	empuno						CCREDITEN
							Tast results indicated
							as not accredited are
							outside the scope of the

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Page 112 of 127 Pages

Reference No: 22/1550

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laboratory's accreditation

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Nº434

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	@veros.	co.nz			Attention: S. Cornwall	
Job Description	on: Wooing	g Tree Su	ıbdivisio	n, Cromwell				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); 1	Lot 349	9 – See Page 127 for location plan	
Donth	Departmention	Blo	ws /	Inferred Allowable				
Depth (mm)	renetration (mm/blow)	100	300	Bearing Capacity 1				
(mm)	(mm/blow)	mm	mm	(kPa)				
0 - 50	25.0			119			Inferred Bearing Canacity (kPa)	
50 - 100	25.0	4		119			interieu bearing capacity (ar a)	
100 - 150	25.0			119		0	0 100 200 300 400	500
150 - 200	10.0	7	29	233		0 ;	· · · · · · · · · · · · · · · · · · ·	
200 - 250	3.8		-	471		100		
250 - 300	10.0	18		233		100		
200 250	25.0			110		200		
350 400	10.0	7		222		-		
400 450	10.0		-	233		300		
400 - 430	7.1	12	33	235		400		
430 - 500	7.1		-	299		100		
500 - 550	7.1	14		299		500		
550 - 600	7.1			299				
600 - 650	8.3	11		267	4	000		
650 - 700	10.0		-	233	4	700		
700 - 750	25.0	3	18	119	1	-		
750 - 800	50.0	<u> </u>		68	1	800		
800 - 850	25.0	4		119	1	900		
850 - 900	25.0	-		119		500		
900 - 950	25.0	2		119		1000		
950 - 1000	50.0	3		68	m			
1000 - 1050	50.0		10	68	(m	1100		
1050 - 1100	50.0	2	10	68	th	1200		
1100 - 1150	25.0	-		119	ep	-		
1150 - 1200	16.7	5		160	D	1300		
1200 - 1250	16.7			160		1400		
1250 - 1300	16.7	6		160		1400		
1300 - 1350	16.7			160		1500		
1350 - 1400	56	12	29	359				
1400 - 1450	10.0		-	233		1600		
1450 - 1500	83	11		267		1700		
1500 1550	12.5			108		-		
1500 - 1550	12.5	8		198		1800		
1600 1650	12.5			198		1000		
1000 - 1050	12.5	9	26	198		1900		
1050 - 1700	10.0			233		2000		
1/00 - 1/50	10.0	9		233				
1/50 - 1800	12.5		from E'- 2	198	4	2100		
bearing capacity res bearing pressure un	suus statea above have b ider small structures. M	J. Stockwell.	rom rig 2 – The results a	petermination of allowable are relative to the ground		2200	merres senting suprenty (somm merrals)	
conditions at the tin	ne of test and will be hed	wily influenc	ed if significa	ant gravel fraction is present.			Inferred Bearing Capacity (300mm intervals)	
The inferred values	should be used conserv	atively. IANZ	endorsemen?	t does not apply to these values.		2300 1		
NZS 3604:2011. Sec	tion 3.3.7.1 (b) states th	at the ultima	te bearing ca	pacity of the foundation shall be				
assumed to be not le	ess than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth				
equal to twice the w	idth of the widest footin	g below the u	nderside of th	he proposed footing and 3 at				
greater aepins.	FIELD LOG- NZ	Gentechr	nical Socia	ety Guidelines 2005 (Not 1	ANZ A	ccredit	ted): Lot 349 - See Page 127 for location plan	
Denth (mm)	Description	Stotetill	iicai bult			cicuit	au, 100047 - 500 1 age 127 101 100ation plan	
0 to 50	Topool 6 month	ion (com	in matter					
0 10 50	Topson & vegetat	ion (organ	Matter)	h Yahdu wala 277 - C				
50 to 1250 *	Brown Gravelly S	SAND	). Moist. T	ignuy packed / Loose. Gra	vel, suba	ngular	to subrounded, maximum particle size 53.0mm;	
* NZS 2604.2011	Sanu, nne to med	iuiii; Silt, I	non-plastic	i. diamatar augar hala ta ha a	mulatad	to the d	lanth of each scale nonatromator nuche Unable to some	lata nast the
denth indicated.	Section 5.5.0 requi		ium somm	ulameter auger noie to be co	mpieteu	io ine u	tepin of each scala penetrometer probe. Unable to compr	ele past the
Note:								
note:	Ito stated -1		40 th	monimate test 1 4		d CTO	accomta na liabilita fan arre	data
• Ine resu	uis statea above al	e specific	to the app	vroximate test locations as	recorde	u. UIS	accepts no hadding for any extrapolatea use of this	i aata.
This rep	ort may not be rep	produced e	except in f	<i>ull</i> .				
Tostad Pro	K Hinkins C	Doorsor	T Show	R C Fishon Dat	<b></b>	1 4	10 13 May 11	
i esteu Dy:	к. піркіня, С.	i carson,	<b>1.</b> Shaw	a C. Fisher Dat	с.	4 l	0 23-way-22	
Checked By:	l'mph luo	,					CCREDITE	
	·						P* 0	
							Test results	indicated



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#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	:	Veros, s	stephenc	averos.	co.nz			Attention: S. Cornwall
Job Description	on:	Wooing	Tree Su	bdivisio	n, Cromwell			
<b>_</b>								
		SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 35	50 – See Page 127 for location plan
Denth	Equi	valent	Blo	ws /	Inferred Allowable			
(mm)	Pene	tration	100	300	Bearing Capacity <sup>1</sup>			
()	(mm	/blow)	mm	mm	(kPa)			
0 - 50	5	0.0	3		68			Inferred Bearing Capacity (kPa)
50 - 100	2	5.0	5		119			
100 - 150	1	6.7	6	18	160		(	0 50 100 150 200 250 300 350 400
150 - 200	1	6.7	v	10	160		0	
200 - 250	1	6.7	9		160		100	
250 - 300	8	3.3			267			
300 - 350	1	6.7	8		160		200	
350 - 400	1	0.0	Ů		233		300	
400 - 450	1	6.7	9	29	160			
450 - 500	8	3.3			267		400	
500 - 550	1	0.0	12		233		500	
550 - 600	7	7.1			299			
600 - 650	7	/.1	16		299		600	
650 - 700	5	5.6		4	359	_	700	
700 - 750	8	3.3	12	38	267			
750 - 800	8	3.3			267		800	
800 - 850	1	0.0	10		233		900	
850 - 900	1	0.0			233			
900 - 950	2	5.0	3		119	1)	1000	
950 - 1000	5	0.0		-	68	un	1100	
1000 - 1050	10	<u>)0.0</u>	1	6	36	1 (1		
1050 - 1100	10	<u>)0.0</u>		-	36	ptł	1200	
1100 - 1150	5	0.0	2		68	De	1300	
1150 - 1200	5	0.0			68			
1200 - 1250	5	0.0	3		68		1400	
1250 - 1300	2	5.0 5.0		-	119		1500	
1300 - 1350	2	<u>5.0</u>	4	13	119			
1350 - 1400	2	<u>5.0</u>		-	119		1600	
1400 - 1450	2	<u>5.0</u> 2.5	6		119		1700	
1450 - 1500	1	2.5 5.0			190			
1500 - 1550	1	<u>3.0</u> 2.5	6		119		1800	
1600 - 1650	1	2.5		-	198		1900	
1650 - 1700	1	<u> </u>	7	22	160			
1700 - 1750	1	2 5			198		2000	
1750 - 1800	1	0.0	9		233		2100	
<sup>1</sup> Bearing capacity res	sults stated a	bove have b	een inferred	from Fig 2 –	Determination of allowable			Inferred Bearing Capacity (50mm Intervals)
bearing pressure un	der small st	ructures, M.	J. Stockwell.	The results a	are relative to the ground		2200	Inferred Bearing Capacity (300mm intervals)
conattions at the tin The inferred values	ve of test and should be u	u wiii be hea sed conserva	wuy influence atively. IANZ	ea ij significa ' endorsemen	ini gravei jraction is present. t does not apply to these values.		2300	
NZS 3604:2011, Sec assumed to be not la	xuon 3.3.7.1 ess than 300	(b) states the kPa if the n	at the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the w	idth of the w	videst footing	g below the u	nderside of th	he proposed footing and 3 at			
greater depths.		OC. N7	Cast1	inal C'	ty Cuidalina- 2005 (N + I	A N/7 A		lited) Lat 250 See Dage 127 for landing alar
Donth (mm)	Deservier	tion	Geotecnn	ncai Socie	ay Guidennes 2005 (Not I	ANZ A	ccreat	nieu), Loi 550 - See rage 127 for location plan
Deptir (IIIII)	Terrer	0011 0	·					
0 to 50	T opsoil d	x vegetat	ion (organ	ic matter)			,	
50 to 1300 *	Brown S	nlostic	y GRAVE	L. Dry. Lo	oose. Gravel, angular to sub	orounde	a, max	ximum particle size 53.0mm; Sand, fine to coarse;
* NZS 3604. 2011	Silt, non-	-plastic.	res a minin	10m <b>5</b> 0mm	diameter auger hale to be as	mnlatad	to the	a denth of each scale negatrometer probe. Unable to complete past the
depth indicated.	Section 5	requii	cs a 1111111	10111 30111M	utanicies auger noie to De Co.	mpietea	<i>w me</i> (	acpun of cach scata penetrometer prove. Unable to complete past the
Note.								
• The resu	lts stated	above ar	e specific	to the app	proximate test locations as	recorda	d CT	ES accepts no lighility for any extrapolated use of this data
<ul> <li>This ran</li> </ul>	ort may n	not he ren	roducod o	xcent in fi	ull	. ccorde		Succepts no hubbing for any extrapolated use of this data.
- Inis repo	on muy n	wi ve rep	i suncen e.	ncepi in fl	****			
Tested By:	K. Hipk	kins, C. I	Pearson,	T. Shaw	& C. Fisher Date	e:	4 1	to 23-May-22
·	•	11	,					-
		///						



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**CTS** 

#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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 P: 03 4487644, W: <u>www.centraltesting.co.nz</u>, E: info@centraltesting.co.nz

Page 114 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	: Ver	ros, <u>stephen</u>	<u>averos.</u>	co.nz		Attention:	S. Cornwall
Job Descriptio	on: Wo	ooing Tree S	ubdivisio	n, Cromwell			
•		<u> </u>					
	S	CALA PENE	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 35	51 – See Page 127 for loca	ntion plan
D. 4	<b>D</b> ( )	. Bl	ows /	Inferred Allowable			
Depth	Penetrat	10n 100	300	Bearing Capacity <sup>1</sup>			
(mm)	(mm/bio	mm	mm	(kPa)			
0 - 50	50.0			68		Informed Desuing	Canadity (LDa)
50 - 100	25.0	3		119		Interred Bearing	Capacity (KPa)
100 - 150	25.0			119		0 50 100 150 2	00 250 300 350 400 450
150 - 200	12.5	6	23	198	0		
200 - 250	63			330	-		
250 - 250	83	14		267	100		
200 250	12.5			109	200		
350 400	12.3	9		222	200		
350 - 400	10.0		_	255	300		
400 - 450	8.3	13	31	267	10.0		
450 - 500	/.1			299	400		
500 - 550	10.0	9		233	500		
550 - 600	12.5			198			
600 - 650	16.7	6		160	600		
650 - 700	16.7	v	_	160	700		
700 - 750	12.5	0	24	198	,00		
750 - 800	10.0	9	24	233	800		
800 - 850	12.5	•		198			
850 - 900	10.0	9		233	900		
900 - 950	12.5			198	1000		
950 - 1000	10.0	9		233	m m		
1000 - 1050	83			267	E 1100		
1050 1100	10.0	11	28	207	<b>h</b> 1300		
1100 1150	10.0			109	1200		
1100 - 1150	12.5	8		198	<b>Q</b> 1300		
1150 - 1200	12.5			198			
1200 - 1250	16.7	7		160	1400		
1250 - 1300	12.5	,		198	1500		
1300 - 1350	16.7	7	21	160	1500		
1350 - 1400	12.5	,	21	198	1600		
1400 - 1450	16.7	7		160			
1450 - 1500	12.5	/		198	1700		
1500 - 1550	10.0			233	1800		
1550 - 1600	8.3			267	1000		-
1600 - 1650	4.5			416	1900		
1650 - 1700	83	17	37	267			
1700 1750	12.5		_	108	2000		
1750 1900	12.3	9		222	2100		
1/50 - 1800	ults stated above	have been informed	from Fig 2	LJJ Determination of allowable	22.00	Inferred Bearing C	Capacity (50mm Intervals)
bearing pressure un	der small structu	res, M.J. Stockwell	The results of	are relative to the ground	2200	Inferred Rearing (	Canacity (300mm intervals)
conditions at the tim	e of test and will	be heavily influen	ed if significe	ant gravel fraction is present.	3300		apacay (coomin artistats)
The inferred values	should be used c	onservatively. IAN	2 endorsemen	t does not apply to these values.	2300		
NZS 3604:2011. Sec.	tion 3.3.7.1 (b) st	tates that the ultima	te bearing ca	pacity of the foundation shall be			
assumed to be not le	ss than 300 kPa	if the number of bl	ows per 100m	m exceeds 5 down to a depth			
equal to twice the wi	idth of the widest	footing below the	underside of t	he proposed footing and 3 at			
greater depths.	TELDIOC	NZ Casta-h	nial Sect	ty Cuidelines 2005 (N-+ )	ANZ Agang 1	itad): Lat 251 San D	127 for location plan
	Den 14	: INZ Geotech	incal Socie	ery Guldelines 2005 (Not I	ANZ Accred	neu); Lot 551 - See Page	127 for location plan
Deptn (mm)	Description						
0 to 100	Topsoil & ve	egetation (orga	nic matter)	•			
100 to 300	Brown Silty	Sandy GRAVI	EL. Dry. Lo	oose. Gravel, angular to sub	orounded, max	kimum particle size 53.0mm	n; Sand, fine to coarse;
100 10 500	Silt, non-pla	stic.					
300 to 1100 *	Grey / brown	n Sandy GRAV	EL with t	race of / minor silt. Dry. Lo	ose. Gravel, su	ıbangular to subrounded, ı	maximum particle size 26.5mm;
500 10 1100	Sand, fine to	coarse; Silt, n	on-plastic.				
* NZS 3604:2011,	Section 3.3.6	requires a mini	num 50mm	diameter auger hole to be co	ompleted to the	depth of each scala penetron	neter probe. Unable to complete past the
depth indicated.							
Note:							
• The resu	lts stated abo	ove are specific	to the app	proximate test locations as	recorded. CT	S accepts no liabilitv for a	ny extrapolated use of this data.
• This rend	ort mav not h	e reproduced	except in f	ull.			· · ·
1							
Fested Bv:	K. Hinkins	. C. Pearson	. T. Shaw	v & C. Fisher Date	e: 4	to 23-Mav-22	
······································		,	, <b></b> ,	Date Date	•		CREDITA
						P	03.
Cnecked By:	emp	~~~~					Test results indicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Page 115 of 127 Pages

Reference No: 22/1550

as not accredited are outside the scope of the laboratory's

accreditation

TESTING LABORATO

Date: 26 May 2022

### <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

<b>Client Details</b>	: Veros,	tephene	averos.	co.nz			Attention: S. Cornwall
Job Description	on: Wooing	Tree Su	bdivisio	n, Cromwell			
	SCAL	A PENET	ROMET	ER (NZS 4402.1988. Test	6.5 2).	Lot 35	52 – See Page 127 for location plan
	D ( )	Blo	ws /	Inferred Allowable	,		
Depth (mm)	Penetration (mm/blow)	100	300	Bearing Capacity <sup>1</sup>			
()	(mm/biow)	mm	mm	(kPa)			
0 - 50	25.0	4		119	1		
50 - 100	25.0	<u> </u>	4	119	-		Inferred Bearing Capacity (kPa)
100 - 150	25.0	5	20	119	-		0 100 200 300 400 500
200 - 250	10./		1	100	1	0	
250 - 250	7.1	11		299	1	100	
300 - 350	8.3	17	1	267	1	200	
350 - 400	5.6	15		359		200	
400 - 450	8.3	13	47	267	_	300	
450 - 500	7.1	10	- <sup>-</sup>	299	_	400	
500 - 550	7.1	19		299	-	500	
550 - 600 600 - 650	4.2			444 233	-	200	
650 - 700	10.0	10		233		600	
700 - 750	12.5		2-	198		700	
750 - 800	12.5	8	27	198		800	
800 - 850	12.5	9		198		000	
850 - 900	10.0	,		233		900	
900 - 950	8.3	10		267	(n	1000	
950 - 1000	12.5		1	198	mm	1100	
1050 - 1050	25.0	5	20	119	h (	1200	
1100 - 1150	25.0	_	1	119	ept	d 1300	
1150 - 1200	16.7	5		160	D	1300	
1200 - 1250	25.0	6		119	]	1400	
1250 - 1300	12.5	0	4	198		1500	
1300 - 1350	12.5	8	25	198	-	1600	
1350 - 1400	12.5		4	198	-	1000	
1450 - 1450	8.3	11		255	-	1700	
1500 - 1550	10.0			233	1	1800	
1550 - 1600	7.1	12		299	]	1900	
1600 - 1650	5.6	16	38	359		2000	
1650 - 1700	7.1	10		299		2000	
1700 - 1750	8.3	10		267	-	2100	Inferred Bearing Capacity (50mm Intervals)
<sup>1</sup> Bearing capacity res	12.5 ults stated above have b	een inferred i	from Fig 2 –	198 Determination of allowable	-	2200	Inferred Bearing Canacity (300mm intervale)
bearing pressure un	der small structures, M.	J. Stockwell.	The results a	re relative to the ground		2300	
The inferred values	should be used conserve	tively. IANZ	endorsemen	t does not apply to these values.		- 20	
NZS 3604:2011, Sec assumed to be not le	tion 3.3.7.1 (b) states the ess than 300 kPa if the n	at the ultimat umber of blo	e bearing cap ws per 100m	pacity of the foundation shall be m exceeds 5 down to a depth			
equal to twice the ward greater denths.	idth of the widest footing	g below the u	nderside of tl	he proposed footing and 3 at			
Denth (mm)	FIELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	IANZ A	ccredi	lited); Lot 352 - See Page 127 for location plan
0 to 100	Tonsoil & vegetet	ion (organ	ic matter)				
100 to 1450 *	Brown Silty Sandy	y GRAVE	L. Dry. Lo	oose. Gravel, angular to sub	brounde	ed, max	ximum particle size 53.0mm; Sand, fine to coarse;
* NZS 2604.2011	Silt, non-plastic.	rac a mini-		diamatar augar hals to be as	mulator	to the	a danth af agab scala nanatramatar nyaka. Unakla ta gamulata nart t
depth indicated.	section 5.5.0 requi	es a miniñ	ium somm	utameter auger note to be co	mpieted	10 100	e uepen of each scala penetrometer probe. Unable to complete past t
Note:			_				
<ul><li>The resu</li><li>This repo</li></ul>	lts stated above ar ort may not be rep	e specific roduced e	to the app xcept in fi	proximate test locations as ull.	record	ed. CT	TS accepts no liability for any extrapolated use of this data.
Tested By:	K. Hipkins, C. I	Pearson,	T. Shaw	& C. Fisher Date	e:	4	to 23-May-22
<b>a 1 1 5</b>	. //						
Checked By:	emplus						CCREDITED
							Test results indicated



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#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 116 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros	, stephenc	averos.	<u>co.nz</u>		Attention:	S. Cornwall
Job Description	n: Wooir	ng Tree Su	ıbdivisio	n, Cromwell			
		<u> </u>					
	SCA	LA PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2); Lot 353 -	- See Page 127 for locat	on plan
	<b>D</b>	Blo	ws /	Inferred Allowable			
Deptn	Penetration	100	300	Bearing Capacity <sup>1</sup>			
(mm)	(mm/blow)	mm	mm	(kPa)			
0 - 50	50.0			68		Informed Desping	Canadity (LDa)
50 - 100	16.7	- 4		160		Interreu bearing v	capacity (KF a)
100 - 150	12.5			198	0	50 100 150	200 250 300 350 400
150 - 200	12.5	8	17	198	0 +		
200 - 250	25.0	_		119	100		
250 - 300	16.7	5		160	100		
300 - 350	8.3			267	200		
350 - 400	5.0	16		388	-		
400 - 450	8.3			267	300		
450 - 500	10.0	- 11	35	233	400		
500 - 550	12.5	0		198			
550 - 600	12.5	8		198	500		
600 - 650	12.5			198	600		
650 - 700	7.1	11		299			
700 - 750	8.3			267	700		
750 - 800	7.1	13	35	299	800		
800 - 850	12.5			198			
850 - 900	7.1	- 11		299	900		
900 - 950	8.3			267	- 1000		
950 - 1000	10.0	- 11		233	(m		
1000 - 1050	12.5			198	<u> </u>		
1050 - 1100	10.0	9	27	233	5 1200		
1100 - 1150	12.5	_		198	eb		
1150 - 1200	16.7	7		160	A 1300		
1200 - 1250	12.5			198	1400		
1250 - 1300	12.5	8		198			
1300 - 1350	10.0		1	233	1500		
1350 - 1400	12.5	9	24	198	1600		
1400 - 1450	12.5	_		198	1000		
1450 - 1500	16.7	7		160	1700		
1500 - 1550	16.7			160	1800		
1550 - 1600	10.0	8		233	1000		
1600 - 1650	12.5	-		198	1900		
1650 - 1700	16.7	7	21	160	2000		
1700 - 1750	16.7	(		160	2000		
1750 - 1800	16.7	0		160	2100		
<sup>1</sup> Bearing capacity resu	lts stated above have	been inferred	from Fig 2 –	Determination of allowable	2200	Inferred Bearing Ca	pacity (50mm Intervals)
bearing pressure und conditions at the time	er small structures, 1 of test and will be h	M.J. Stockwell. eavily influenc	The results of the re	tre relative to the ground	2200	Inferred Bearing Ca	pacity (300mm intervals)
The inferred values si	hould be used conse	rvatively. IANZ	endorsemen	t does not apply to these values.	2300	1	
N75 3604.2011 Seati	on 3 3 7 1 (b) states	that the ultime	ta haanina aa	nacity of the foundation shall be			
assumed to be not less	s than 300 kPa if the	nut the unimu number of blo	ws per 100m	m exceeds 5 down to a depth			
equal to twice the wid	th of the widest foot	ing below the u	nderside of t	he proposed footing and $\hat{3}$ at			
greater depths.		7 Contrahy	ical Saat	ty Guidelines 2005 (No+ 1	ANZ Approdited	I). Lot 353 See Dage 12	27 for location plan
Denth (mm)	Description	L Geoleciii		ay Guidennes 2005 (NOU	Activated	1), 101 555 - See Fage 12	a ioi iocation pian
0 to 100	Tangail & usa	atation (and		· •••)			
0 10 100	Topson & veg	etation (org	anic matte	er).	, , , , ,		
100 to 1400	Brown Silty S	andy GRAV	EL. Dry.	Loose. Gravel, angular to s	subrounded, maxi	imum particle size 53.0mi	n; Sand, fine to coarse;
Sili, ilufi-plastic.							
1400 to 1500 *	Grey / brown	SAND. Moi	st. Loose.	Sand, fine to coarse; Silt, n	on-plastic.		
* NZS 3604:2011, S denth indicated	Section 3.3.6 requ	ures a minin	num 50mm	diameter auger hole to be co	ompleted to the dep	oth of each scala penetrome	ter probe. Unable to complete past the
Net a							
Note:			4-41-				
• The result	ts stated above	are specific	to the app	proximate test locations as	recorded. CTS a	ccepts no liability for an	y extrapolated use of this data.
This report	rt may not be re	eproduced e	xcept in f	<i>ull.</i>			
Tested Rv· 4	Hinkins C	Pearson	T Show	& C Fisher Dat	e• 4 to '	23-May-22	
residu Dy: F	x. mpkills, C	. 1 carson,	1. Shaw	a C. Fisher Date	<b>.</b> 410	25-wiay-22	
	//	/				- CR	EDITA



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Page 117 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details</b>	: Veros,	stephenc	averos.	<u>co.nz</u>			Attention:	S. Cornwall	
Job Description	on: Wooin	g Tree Su	bdivisio	n, Cromwell					
		A DEDUCT	DOVEZ	ED (1/20 1/00 7	( =	1	4 G D 105 C 1	<b>_</b>	
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	6.5.2);	Lot 354	4 – See Page 127 for locati	ion plan	
Depth	Penetration	BI0	WS /	Interred Allowable Boaring Canacity <sup>1</sup>					
(mm)	(mm/blow)	100	300 mm	(kPa)					
0 - 50	50.0	111111	111111	68			Inferred Rearing	Canacity (kPa)	
50 - 100	25.0	3		119			interret bearing	cupuenty (M u)	
100 - 150	16.7	-	1	160		0	100 200	300 40	0 500
150 - 200	25.0	5	15	119		0 :			
200 - 250	25.0	7		119		100			
250 - 300	10.0	/		233		200			
300 - 350	10.0	11		233		200		-	
350 - 400	8.3		-	267		300			
400 - 450	4.2	18	36	444		400			
450 - 500	0.5 10.0			207					
550 - 600	25.0	7		119		500			
600 - 650	25.0			119		600			
650 - 700	12.5	6		198		700			
700 - 750	12.5	0	-	198		700			
750 - 800	12.5	8	20	198		800			
800 - 850	16.7	6		160		000			
850 - 900	16.7	U		160		900			
900 - 950	16.7	5		160		1000			
950 - 1000	25.0	5	_	119	um	1100			
1000 - 1050	16.7	6	18	160	ı (n	1100			
1050 - 1100	16.7	Ů	10	160	pth	1200	╶──┤┌┲┛╶┤╴		
1100 - 1150	12.5	7		198	Del	1300			
1150 - 1200	16.7			160	I	1300			
1200 - 1250	25.0	5		119		1400			
1250 - 1300	16./		-	160		1500			
1300 - 1350	16.7	6	15	160		1000			
1350 - 1400	25.0			100		1600		1	
1400 - 1430	25.0	- 4		119		1700		-	
1500 - 1550	16.7			160					
1550 - 1600	12.5	7		198		1800			
1600 - 1650	10.0			233		1900			
1650 - 1700	16.7	8	19	160					
1700 - 1750	25.0	4		119		2000			
1750 - 1800	25.0	4		119		2100			
<sup>1</sup> Bearing capacity res	ults stated above have	been inferred	from Fig 2 –	Determination of allowable			Inferred Bearing Ca	apacity (50mm Intervals)	
conditions at the time	aer small structures, w ie of test and will be he	avily influence	ed if significa	int gravel fraction is present.		2200	Inferred Bearing Ca	apacity (300mm intervals)	
The inferred values	should be used conser	vatively. IANZ	endorsemen	t does not apply to these values.		2300 <sup>1</sup>	· · · · · · · · · · · · · · · · · · ·		
NZS 3604:2011, Sec	tion 3.3.7.1 (b) states ti	hat the ultimat	e bearing ca	pacity of the foundation shall be					
assumed to be not le	ss than 300 kPa if the	number of blo	ws per 100m	m exceeds 5 down to a depth					
equal to twice the wi greater depths.	aan oj tne widest jootii	ig below the u	nderside of ti	te proposea jooting and 3 at					
I	FIELD LOG: NZ	L Geotechn	ical <u>Soc</u> ie	ty Guidelines 2005 (Not I	ANZ A	ccredit	ed); Lot 354 - See Page 12	27 for location plan	
Depth (mm)	Description								
0 to 50	Topsoil & vegeta	tion (organ	ic matter)	•					
50 to 800	Brown Silty Sand Silt, non-nlastic	ly GRAVE	L. Dry. Lo	oose. Gravel, angular to sub	orounde	ed, maxi	mum particle size 53.0mm;	Sand, fine to coarse;	
800 to 1400 *	Grey / brown Gr	avelly SAN rse: Silt_no	D with tra	ace of / minor silt. Moist. Lo	oose. Gi	ravel, su	bangular to subrounded, m	aximum particle size	37.5mm;
* NZS 3604:2011.	Section 3.3.6 reau	ires a minin	num 50mm	diameter auger hole to be co	mpleted	l to the d	epth of each scala penetrome	eter probe. Unable to co	mplete past the
depth indicated.									
Note:									
<ul><li>The resu</li><li>This repo</li></ul>	lts stated above a ort may not be rej	re specific produced e	to the app xcept in f	proximate test locations as ull.	record	ed. CTS	accepts no liability for an	y extrapolated use of	this data.
Tested By:	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	o 23-May-22		
	//						ACCR	EDITED	
Checked By:	emplu	2					٢	Test res	ults indicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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#### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 118 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc	<u>averos.</u>	<u>co.nz</u>			Atter	ntion:	S. Cornw	all
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell						
	SCAL	DENET	DOMET	ED (N/75 4403-1000 T 4	(5.2)	Lat 25	Cas D 1	17 for 1 "	on nla-	
	SCALA	A PENET	ROMETI	ER (NZS 4402:1988, Test	6.5.2);	Lot 355	5 – See Page I	27 for locati	on plan	
Depth	Penetration	Blo	ws /	Interred Allowable						
(mm)	(mm/blow)	100	300	Bearing Capacity						
0.50	25.0	mm	mm	(KF a) 110	-					
0 - 50	25.0	4		119	-		T 6	1. D		<b>D</b> _)
50 - 100	25.0			119	-		Interree	i Bearing C	арасну (к	Pa)
150 200	12.5	7	18	190	-	0	50	100 150	200	250 300 350
200 250	25.0			110	-	0 :				
250 - 250	10.0	7		233		100				
300 - 350	71			299	1					
350 - 400	8.3	13		267		200				
400 - 450	25.0			119		300				
450 - 500	12.5	6	29	198	1	400				
500 - 550	10.0	10		233	1	400				
550 - 600	10.0	10		233		500		_		
600 - 650	12.5	0		198		600				
650 - 700	12.5	0		198						
700 - 750	12.5	8	26	198		700				
750 - 800	12.5	0	20	198		800				
800 - 850	12.5	10		198		000				
850 - 900	8.3	10		267		900				
900 - 950	12.5	7		198	1)	1000				
950 - 1000	16.7	-	-	160	nn	1100				
1000 - 1050	25.0	6	22	119	1 (1					
1050 - 1100	12.5			198	ptl	1200				
1100 - 1150	12.5	9		198	De	1300				
1150 - 1200	10.0			233		1400				
1200 - 1250	10./	9		160	-	1400				
1250 - 1300	8.3 12.5			20/	-	1500				
1300 - 1350	12.5 9.2	10	28	267	-	1600				
1350 - 1400	0.5			207	-	1000				
1400 - 1430	12.3	9		233	-	1700				
1500 - 1550	10.0			233	1	1800				
1550 - 1600	83	11		267	1	1000				
1600 - 1650	8.3			267		1900				
1650 - 1700	8.3	12	33	267		2000		_		
1700 - 1750	10.0	10		233	1	2100				
1750 - 1800	10.0	10		233	1	2100	In fer	red Bearing Ca	pacity (50mm Ir	itervals)
<sup>1</sup> Bearing capacity resu	lts stated above have b	een inferred j	from Fig 2 –	Determination of allowable	1	2200	Infer	red Bearing Ca	pacity (300mm i	ntervals)
bearing pressure und conditions at the time	er small structures, M. of test and will be hea	J. Stockwell. vilv influenci	The results a ed if significa	re relative to the ground int gravel fraction is present.		2300 1	L			
The inferred values s	hould be used conserva	tively. IANZ	endorsemen	t does not apply to these values.						
NZS 3604:2011. Secti	on 3.3.7.1 (b) states the	ut the ultimat	e bearing car	pacity of the foundation shall be						
assumed to be not les	s than 300 kPa if the n	umber of blo	ws per 100mi	n exceeds 5 down to a depth						
equal to twice the wia greater denths	th of the widest footing	below the u	nderside of th	ne proposed footing and 3 at						
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ A	ccredit	ed); Lot 355 -	See Page 12	7 for location	on plan
Depth (mm)	Description						,,			•
0 to 50	Topsoil & veget	ation (org	anic matte	er).						
50 / 1000	Brown Silty San	dy GRAV	EL. Drv.	Loose. Gravel. angular to s	ubroun	ded. ma	ximum particl	e size 53.0mm	n; Sand. fine	to coarse;
50 to 1200	Silt, non-plastic					,	r			- /
1200 to 1500 *	Grey / brown G	ravelly SA	ND with t	trace of / minor silt. Moist.	Loose.	Gravel,	subangular to	subrounded,	maximum p	article size 37.5mm;
1200 to 1500	Sand, fine to coa	arse; Silt,	non-plasti	e	_			-		
* NZS 3604:2011, J	Section 3.3.6 requir	es a minin	um 50mm	diameter auger hole to be co	ompleted	to the d	epth of each sca	la penetrome	ter probe. Un	able to complete past the
Note:										
Note:	to stated about	a cnac:6-	to the area	novimata tast location	4000mJ	d CTO	acconto vo l'-	hility for an	artuan alat	duss of this data
Ine result     This are	is stated above ar	e specific	wart in f	voximate test locations as	record	ea. CTS	accepts no lia	ouny jor any	v extrapolate	a use oj this data.
<ul> <li>Inis repoi</li> </ul>	n may not be rep	roaucea e	xcept in fi	<i></i>						
Tested Bv: F	K. Hipkins. C. 1	Pearson	T. Shaw	& C. Fisher Date	e:	4 t	o 23-Mav-22			
						71	may 22	CR	EDITA	
Charlend Dr.	emplin							ACCO	63	
CHECKEU DY:	Jungarun									Test results indicated
										as not accredited are outside the scone of the
								1	2	laboratory's
								SA	1º	accreditation
								NGL	ABORA	

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Page 119 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client</b> Details:	Veros, s	tephenc	averos.	<u>co.nz</u>		Attention:	S. Cornwall
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell			
		-					
	SCALA	A PENET	ROMETI	ER (NZS 4402:1988, Test	6.5.2); Lot 356 - See	e Page 127 for locat	ion plan
	<b>D</b>	Blo	ws /	Inferred Allowable			
Depth	Penetration	100	300	Bearing Capacity <sup>1</sup>	1	Inferred Bearing (	Canacity (kPa)
(mm)	(mm/blow)	mm	mm	(kPa)			(in a)
0 - 50	50.0	_		68	0	100 200 300	400 500 600 700
50 - 100	25.0	3		119	0		
100 - 150	25.0	-		119	100		
150 - 200	50.0	3	15	68			
200 - 250	16.7			160	200		
250 - 300	8.3	9		267	300		
300 - 350	8.3	10		267			
350 - 400	7.1	13		299	400		
400 - 450	16.7	0	•	160	500		
450 - 500	10.0	8	26	233			
500 - 550	25.0	~		119	600		
550 - 600	16.7	5		160	700		
600 - 650	12.5	-		198			
650 - 700	16.7	/		160	800		
700 - 750	25.0	-	10	119	900		
750 - 800	16.7	5	19	160			
800 - 850	12.5	7		198	Î <sup>1000</sup>		
850 - 900	16.7			160	1100		
900 - 950	12.5	0		198	ų tass		
950 - 1000	12.5	0		198	1200 j		
1000 - 1050	16.7	5	10	160	<b>Ğ</b> 1300		
1050 - 1100	25.0	3	15	119	1400		
1100 - 1150	16.7	6		160	1400		
1150 - 1200	16.7	U		160	1500		
1200 - 1250	25.0	5		119	1600		
1250 - 1300	16.7	5		160	1000		
1300 - 1350	12.5	7	37	198	1700		
1350 - 1400	16.7	,		160	1800		
1400 - 1450	10.0	25		233	1000		
1450 - 1500	2.5	-0		645	1900		
Refusal	H	·····	G Etc. 2		2000		
bearing capacity resu bearing pressure und	ler small structures, M.	een inferrea j J. Stockwell.	The results a	petermination of allowable re relative to the ground			
conditions at the time	e of test and will be hea	vily influence	ed if significa	nt gravel fraction is present.	2100	Informed Rearing Ca	nacity (50mm Intervals)
The inferred values s	hould be used conserva	tively. IANZ	endorsemen	t does not apply to these values.	2200	Interred Dearing Ca	
NZS 3604:2011, Sect	ion 3.3.7.1 (b) states the	at the ultimat	e bearing cap	acity of the foundation shall be		Inferred Bearing Ca	pacity (300mm intervals)
assumed to be not les	s than 300 kPa if the n Ith of the widest footing	umber of blo below the u	ws per 100mi ndarsida of tl	n exceeds 5 down to a depth	2300		
greater depths.	un of the watest footing	; below the u	incrsine of in	e proposeu jooning unu 5 ui			
F	IELD LOG: NZ	Geotechn	ical Socie	ty Guidelines 2005 (Not I	ANZ Accredited); L	ot 356 - See Page 12	27 for location plan
Depth (mm)	Description						
0 to 200	Topsoil & vegetati	ion (organ	ic matter)	•			
200 to 1500	Brown Silty Sandy	GRAVE	L. Dry. Lo	ose. Gravel, angular to sub	orounded, maximum j	particle size 53.0mm;	Sand, fine to coarse;
* NZS 3604-2011	Section 3.2.6 reari	roc a minii	num 50mm	diameter auger hele to be a	ampleted to the denth of	feach scale nenetrom	eter nrohe
Note:	Section 5.5.0 requi	сэ а ШШШ	aam Sviilli	anameter auger none to De C		a cach scaid peneironn	
• The resul	ts stated above ar	e specific	to the app	roximate test locations as	recorded. CTS accen	ts no liability for an	y extrapolated use of this data.

• This report may not be reproduced except in full.

**Tested By:** K. Hipkins, C. Pearson, T. Shaw & C. Fisher 4 to 23-May-22 Date:

Checked By:

s

emplus



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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Page 120 of 127 Pages

Reference No: 22/1550

Nº434

Date: 26 May 2022

#### EST REPORT -- SCALA PENETROMETER RESULTS

Client Details:	Veros, s	tephenc	(a)veros.	co.nz			At	tentio	1:	<b>S.</b> Co	ornwa	all		
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell							<u> </u>			
 	0.017	DEDIET	DOMES	ED (NIZO 4402 1000 E	( = 2) =		6 P	105.0	1					
	SCALA	A PENET	KOMET	ER (NZS 4402:1988, Test	6.5.2); L	ot 509	– See Page	e 127 fo	or locat	ion plai	1			
Depth	Penetration	Blo	ws /	Inferred Allowable										
(mm)	(mm/blow)	100	300	Bearing Capacity										
0.50	25.0	mm	mm	(KF a)										
0 - 50	25.0	4		119			Infer	red Re	arino	Canaci	ity (k	Pa)		
50 - 100	25.0		-	119			IIIICI	I CU DU		Capac	ity (is	1 "		
100 - 150	10.7	7	20	100		0	50	100	150	200	250	300	350	400
150 - 200	12.5			190		0 :		11						
200 - 230	12.3	9		233		100			_					
300 - 350	10.0			233		-				-				
350 - 400	10.0	10		233		200								
400 - 450	16.7			160		300		_	L					
450 - 500	16.7	6	22	160		400								
500 - 550	16.7			160		100								
550 - 600	16.7	6		160		500								
600 - 650	16.7	(		160		600		_						
650 - 700	16.7	6		160										
700 - 750	16.7	6	10	160		700								
750 - 800	16.7	U	10	160		800								
800 - 850	16.7	6		160		000								
850 - 900	16.7	U		160		900		-						
900 - 950	16.7	5		160	$\overline{}^{1}$	1000 :								
950 - 1000	25.0	5		119	uu 1	(100								
1000 - 1050	25.0	4	13	119	(L)	:100								
1050 - 1100	25.0	-		119	pth 1	1200								
1100 - 1150	25.0	4		119	Del	1300 -								
1150 - 1200	25.0			119						L				
1200 - 1250	25.0	3		119	1	1400 +								
1250 - 1300	50.0		-	68	1	1500 -		-						
1300 - 1350	12.5	9	21	198										
1350 - 1400	10.0		-	233	1	1600								
1400 - 1450	10.0	9		233	1	1700 -		-						
1450 - 1500	12.5			350	1	1800								
1550 1600	6.3	17		330	1	1000								
1600 - 1650	6.3			330	1	1900 -			_					
1650 - 1700	7.1	15	48	299	2	2000		_						
1700 - 1750	6.3			330										
1750 - 1800	6.3	16		330	2	2100		n ferred l	Rearing C	anacity (5	0mm In	tervals)	1	
<sup>1</sup> Bearing capacity resu	ilts stated above have b	een inferred	from Fig 2 –	Determination of allowable	2	2200				apacity (5				
bearing pressure und	ler small structures, M.	J. Stockwell.	The results a	re relative to the ground				nierred i	searmg C	apacity (3	00mm i	ntervals)		
The inferred values s	hould be used conserva	tively. IANZ	endorsemen	t does not apply to these values.	2	2300	•							
N7S 3604.2011 Sect	ion 3 3 7 1 (b) states the	at the ultime	a haavina aa	racity of the foundation shall be										
assumed to be not les	ion 5.5.7.1 (b) states ind is than 300 kPa if the n	umber of blo	ws per 100m	m exceeds 5 down to a depth										
equal to twice the wid	lth of the widest footing	g below the u	nderside of th	he proposed footing and $\hat{3}$ at										
greater aepths.	IELD LOC: NZ	Geotechr	ical Socia	ty Guidelines 2005 (Not I	ANZ Acc	credita	ed): Lot 50	9 - 500	Ρησο 1	27 for 4	ocatio	n nlan		
Depth (mm)	Description	Stoutill	icai Socie	Cy Suldennes 2005 (NOU I		cicuitt	.u), L01 30	- 500	r age 1.	= / 101 R	scatio	n pian		
0 to 200	Tonsoil & vegetati	ion (organ	ic matter)											
0.0200	Grey / hrown Gree	vellv SAN	D with mi	nor silt. Moist Tightly pag	ked Grav	el sub	angular to	subrov	nded m	aximun	1 narti	icle size	63.0mm	:
200 to 1500 *	Sand, fine to coars	se; Silt. no	n-plastic.	nor one project rightly pact	neu. Ordv	, sub	ungulai tu	subivu	nucu, II	ullull	- parti	LIC 312C		,
* NZS 3604:2011,	Section 3.3.6 requir	res a minin	num 50mm	diameter auger hole to be co	mpleted to	o the de	pth of each	scala pe	netrom	eter prob	oe. Una	ble to co	mplete p	ast the
depth indicated.														
Note:														
• The resul	ts stated above ar	e specific	to the app	proximate test locations as	recorded.	. CTS	accepts no	liabilit	for an	y extrap	olated	l use of	this dat	a.
• This repo	rt may not be rep	roduced e	xcept in fi	ull.										
		Deserve	тен	P C Ealer D f			12 14	22						
restea By:	x. Hipkins, C. I	rearson,	1. Shaw	a C. Fisner Date	e:	4 to	o 23-May-	-22						
a <del>.</del>	. //													
Checked By:	emplus								CCF	REDITE				
	-								P	-0		Tost no	ulte ind:	ented
												as not a	ccredite	l are
												outside	the scop	e of the
									The state		41	laborat	ory's	
									TIN	A	So.	accredi	tation	
									GL	ABOK				

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Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	tephenc	averos.	<u>co.nz</u>				Atten	tion:	S. Co	rnwall		
Job Description	n: Wooing	Tree Su	bdivisio	n, Cromwell									
		DEVE	DOLTE	DD 0170 4400 1000									
	SCAL	<u>A PENET</u>	ROMET	ER (NZS 4402:1988, Test	: <b>6.5.2)</b> ;	Lot 51	) – See I	Page 12	27 for loc	ation plan			
Depth	Penetration	Blo	ws /	Inferred Allowable Bearing Connector 1									
(mm)	(mm/blow)	100	300	bearing Capacity (kPa)									
0 50	167	mm	mm	160			Tn	forrod	Dogwin	a Canadit	v (l/Da)		
<u> </u>	12.5	7		100			111	lerret	i Deal III	g Capaci	у (кі а)		
100 - 150	8.3			267	1	0		100	200	300	400	500	600
150 - 200	7.1	13	32	299		0 =		1					
200 - 250	8.3	12		267		100				_			
250 - 300	8.3	12		267									
300 - 350	8.3	9		267		200							
350 - 400	16.7	-		160	-	300		-					
400 - 450	12.5	8	23	198	-	400							
450 - 500	12.5			190		100							
550 - 600	16.7	6		160		500							
600 - 650	7.1	14		299		600				-			
650 - 700	7.1	14		299		700							
700 - 750	3.6	17	37	497		100							
750 - 800	16.7	17	57	160		800							
800 - 850	16.7	6		160	-	900							
850 - 900	16.7			160	-	1000			1				
950 - 1000	25.0	5		119	(m	1000							
1000 - 1050	12.5			198	(m)	1100							
1050 - 1100	25.0	6	20	119	th	1200							
1100 - 1150	12.5	0		198	ep.								
1150 - 1200	10.0	,		233	D	1300							
1200 - 1250	12.5	11		198		1400							
1250 - 1300	7.1			299	-	1500							
1300 - 1350	<u> </u>	9	32	267		1000							
1400 - 1450	8.3			267		1600							
1450 - 1500	8.3	12		267		1700							
1500 - 1550	10.0	10		233		1900							
1550 - 1600	10.0	10		233		1000							
1600 - 1650	10.0	10	29	233		1900							
1650 - 1700	10.0			233		2000							
1700 - 1750	12.5	9		233		2100							
<sup>1</sup> Bearing capacity result	Its stated above have b	een inferred j	from Fig 2 –	Determination of allowable		2100		— Infer	red Bearing	Capacity (50	mm Interval	s)	
bearing pressure und conditions at the time	er small structures, M.	J. Stockwell.	The results and if signification of the second s	ire relative to the ground		2200	_	Infer	red Bearing	Capacity (30	0mm interva	ls)	
The inferred values sh	hould be used conserve	tively. IANZ	endorsemen	t does not apply to these values.		2300	· · ·						
NZS 3604:2011, Section assumed to be not less equal to twice the wid	on 3.3.7.1 (b) states the s than 300 kPa if the n th of the widest footing	at the ultimat umber of blo g below the u	e bearing cap ws per 100m nderside of th	pacity of the foundation shall be m exceeds 5 down to a depth he proposed footing and 3 at									
greater depths.	FLD LOG: NZ	Geotechn	ical Socio	ty Guidelines 2005 (Not 1	[ANZ A	ccredit	ed)• I of	510.	See Page	127 for los	ration nla	n	
Depth (mm)	Description	Storelli					-u), 10		ore rage	127 101 100			
0 to 150	Topsoil & veget	ation (org	anic matte	er).									
150 to 1300	Grey / brown G Sand, fine to co	ravelly SA arse; Silt,	ND with a non-plasti	minor silt. Moist. Tightly p c.	acked. (	Gravel,	subangu	lar to s	ubrounde	d, maximu	m particle	size 63.0n	ım;
1300 to 1500 *	Light grey SAN	D with tra	ce of / min	or silt. Moist. Tightly pacl	ked. San	d, fine	to coarse	; Silt, r	on-plasti	c			
* NZS 3604:2011, S	Section 3.3.6 requir	res a minin	um 50mm	diameter auger hole to be co	ompleted	to the a	epth of e	ach sca	la penetro	meter probe	. Unable to	complete	past the
Note.													
<ul> <li>The result</li> <li>This report</li> </ul>	ts stated above ar rt may not be rep	e specific roduced e	to the app xcept in fi	proximate test locations as ull.	recorde	d. CTS	accepts	no lial	bility for a	any extrapo	plated use	of this da	ta.
Tested By: F	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	o 23-M	ay-22					
Checked By:	emplus								AC	CREDITED			



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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Page 122 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

## TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc	averos.	<u>20.nz</u>		Attention:	S. Cornwall
Job Description	n: Wooing	Tree Su	bdivisio	n, Cromwell			
	COLT.	DENET	DOMET	ED (N/76 4403.1000 T -	( 5 )). T . 4 P14	Saa Da 127 f 1	ion nlon
	SCALA	A PENET	ROME I	ER (NZS 4402:1988, Test	6.5.2); Lot 511	- See Page 127 for locat	ion plan
Depth	Penetration	100	ws /	Rearing Canacity <sup>1</sup>			
(mm)	(mm/blow)	100 mm	500 mm	(kPa)			
0 - 50	16.7			160			
50 - 100	7.1	10		299		Inferred Bearing	Canacity (kPa)
100 - 150	3.8	22	55	471			
150 - 200	5.0	23	- 55	388	0	100 200	300 400 500
200 - 250	4.2	22		444			
250 - 300	5.0			388	100		
300 - 350	7.1	10		299	200		
350 - 400	16.7			160	200		
400 - 450	8.5 12.5	10	26	20/	500		
500 - 550	16.7			160	400		
550 - 600	16.7	6		160	500		
600 - 650	16.7	(		160	600		
650 - 700	16.7	0		160			
700 - 750	16.7	6	18	160	700		
750 - 800	16.7		10	160	800		
800 - 850	16.7	6		160	900		
850 - 900	16.7			160	200		
900 - 950	25.0	3		69	a 1000		
930 - 1000 1000 - 1050	167			160	E 1100		
1050 - 1100	50.0	4	11	68	<b>u</b> 1200		
1100 - 1150	25.0			119	ept		
1150 - 1200	25.0	4		119	A 1300		
1200 - 1250	25.0	4		119	1400		
1250 - 1300	25.0	4		119	1500		
1300 - 1350	8.3	12	29	267			
1350 - 1400	8.3			267	1600		
1400 - 1450	8.3	13		267	1700		
1450 - 1500	7.1			299	1800		
1500 - 1550	4.2	19		299			
1600 - 1650	7.1			299	1900		
1650 - 1700	8.3	13	44	267	2000		
1700 - 1750	7.1	10		299	2100		
1750 - 1800	10.0	12		233	2200	Inferred Bearing Ca	apacity (50mm Intervals)
<sup>1</sup> Bearing capacity result	lts stated above have be ar small structures M	een inferred j 1. Stockwell	from Fig 2 –	Determination of allowable	2200	Inferred Bearing Ca	apacity (300mm intervals)
conditions at the time	of test and will be hea	vily influence	ed if significa	nt gravel fraction is present.	2300 1		
The inferred values sh	hould be used conserva	tively. IANZ	endorsemen	t does not apply to these values.			
NZS 3604:2011, Secti	on 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be			
assumea to be not less equal to twice the wid	s man 500 KPa if the n th of the widest footing	umper of blo g below the u	ws per 100mi nderside of th	n exceeas 5 aown to a depth ne proposed footing and 3 at			
greater depths.		Castart	ical 6	ty Cuidalinas 2005 (N + 1	ANZ Assessed	d). Lot 511 S D 1	27 for location alon
Depth (mm)	Description	Geotecnn	ucat 50cle	ty Guidennes 2005 (1001 I	And Accredite	tuj, Lot 311 - See rage 1	27 IOI IOCALIOII PIAII
0 to 200	Topsoil & veget	ation (org	anic matte	er).			
200 to 1400	Grey / brown G	ravelly SA	ND with 1	minor silt. Moist. Tightly p	acked. Gravel, s	ubangular to subrounded	, maximum particle size 63.0mm;
1400 to 1550 *	Light grev SAN	D with tra	ce of / mir	 10r silt. Moist. Tightly nacl	ked. Sand. fine to	o coarse: Silt. non-plastic.	
* NZS 3604:2011. S	Section 3.3.6 requir	res a minin	um 50mm	diameter auger hole to be co	ompleted to the de	epth of each scala penetrom	eter probe. Unable to complete past
depth indicated.				-	-	- •	
Note:							
<ul> <li>The result</li> <li>This report</li> </ul>	ts stated above ar rt may not be rep	e specific roduced e	to the app xcept in fi	vroximate test locations as ull.	recorded. CTS	accepts no liability for an	y extrapolated use of this data.
Tested By: k	K. Hipkins, C. I	Pearson.	T. Shaw	& C. Fisher Date	e: 4 to	o 23-May-22	
•		,				- 01	REDITA
Checked By:	emplus					ACC	(ED
							Test results indicate as not accredited ar outside the scope of

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### Central Testing Services 18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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Page 123 of 127 Pages

Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros, s	tephenc	<u>averos.</u>	co.nz			A	Attention:		S. Cor	rnwal	1		
Job Descriptio	n: Wooing	Tree Su	bdivisio	n, Cromwell										
						-				-				
	SCALA	A PENET	ROMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 51	2 – See Pa	age 127 for	locatio	on plan				
Depth	Penetration	Blo	ws /	Inferred Allowable										
(mm)	(mm/blow)	100	300	Bearing Capacity										
0.50	25.0	mm	mm	(KPA)	-									
0 - 50	25.0	5		119	-		Infe	erred Bear	ring C	apacity	y (kPa	a)		
50 - 100	10./		-	160	-								~	
100 - 150	16.7	8	22	233		0.4	) 5	0 100		150	200	25	<u> </u>	300
130 - 200 200 - 250	12.5		-	100	-	, i			L					
250 - 200	10.0	9		233		100								_
300 - 350	12.5			198	-	200					_			
350 - 400	12.5	8		198	-						L			
400 - 450	12.5	_		198		300								
450 - 500	16.7	7	22	160		400								
500 - 550	12.5	-		198	-	-								
550 - 600	16.7	/		160		500								
600 - 650	12.5	6		198		600			_					
650 - 700	25.0	U		119		70.0								
700 - 750	50.0	3	12	68		/00			-					
750 - 800	25.0	5	12	119		800			-					
800 - 850	50.0	3		68		900								
850 - 900	25.0	-		119				IF						
900 - 950	25.0	3		119	1	1000								
950 - 1000	50.0		-	68	un -	1100								
1000 - 1050	50.0	3	10	68	1 ()	-								
1050 - 1100	25.0		-	119	ptl	1200								
1100 - 1150	25.0	4		119	De	1300								
1200 1250	25.0			119	-	1 4 0 0								
1200 - 1230	12.5	6		119	-	1400								
1300 - 1350	16.7			160	-	1500				-				
1350 - 1400	12.5	7	18	198	-	1600								
1400 - 1450	16.7	_		160		1000								
1450 - 1500	25.0	5		119	-	1700								
1500 - 1550	16.7	~		160		1800								
1550 - 1600	25.0	5		119		1000								
1600 - 1650	16.7	7	10	160		1900								
1650 - 1700	12.5	/	10	198		2000								
1700 - 1750	12.5	6		198		-								
1750 - 1800	25.0	•		119	_	2100		-Inferred Bear	ing Cap	acity (50m	m Inter	vals)		
<sup>1</sup> Bearing capacity resu bearing pressure und	lts stated above have be er small structures, M.	een inferred j J. Stockwell.	from Fig 2 – The results a	Determination of allowable are relative to the ground		2200		Informed Boon	ma Can	acity (300)	mm into	arvalc)		
conditions at the time	of test and will be hea	vily influence	ed if significa	ant gravel fraction is present.		2200		-Interred Bear	mg Cap	acity (5001	mm mte	rvais)		
The inferred values s	hould be used conserva	ttively. IANZ	endorsemen	t does not apply to these values.		2300 -								
NZS 3604:2011, Secti	on 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be										
assumed to be not les equal to twice the win	s than 300 kPa if the n Ith of the widest footing	umber of blo g below the u	ws per 100m nderside of tl	m exceeds 5 down to a depth he proposed footing and 3 at										
greater depths.	,, ,	, <b>.</b>												
F	IELD LOG: NZ	Geotechn	ical Socie	ety Guidelines 2005 (Not I	IANZ A	ccredit	ted); Lot :	512 - See Pa	age 12'	7 for loc	cation	plan		
Depth (mm)	Description													
0 to 200	Topsoil & veget	ation (org	anic matte	er).										
200 to 1300	Grey / brown G	ravelly SA	ND with	minor silt. Moist. Tightly p	acked.	Gravel,	subangula	ar to subrou	nded, r	naximu	m part	icle size	e 63.0m	m;
1200 4. 1500 4	Sand, fine to coa	arse; Silt,	non-plasti	C.		1.0	4	C'14						
1300 to 1500 *	Light grey SAN	D with tra	ice of / min	nor silt. Moist. Tightly pack	ked. Sar	id, tine	to coarse;	Silt, non-pla	astic.					
* NZS 3604:2011, depth indicated	Section 3.3.6 requir	res a minin	1 <i>um 50mm</i>	diameter auger hole to be co	ompleted	to the a	tepth of eac	cn scala pene	erromet	er probe.	. Unab	ie to con	nplete p	ast the
Nota.														
The result	ts stated above an	o sporifia	to the apr	provimate test locations as	rocard	od CTS	acconts +	no liability f	or any	extrano	lated	uso of i	his dat	a
<ul> <li>Ine result</li> <li>This report</li> </ul>	is suucu uvove ar et may not be con	e specific roduced e	w ine app	noximule lest locations as all	record	ea. UIS	o accepts h	w navnity f	or any	елігаро	nutea	use oj t	nıs aat	u.
- Inis repo	a may not be rep	ouuceu e	лсері in Ji											
Tested By: H	K. Hipkins, C. I	Pearson,	T. Shaw	& C. Fisher Date	e:	4 t	to 23-Ma	y-22						
<i>v</i> ·	11	7						•	C B B	Dis	I			
Checked By:	emplus								ACCK	ED				
											1	fest rest	ılts indi	cated
											8	is not ac intside +	credited	1 are e of the
								100			U	atorue t	ne scop	e or the

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Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	@veros.c	<u>20.nz</u>		Attention:	S. Cornwall	l
Job Description	n: Wooing	Tree Su	bdivisio	n, Cromwell				
				D AIZO 4402 4000				
	SCAL	<u>A PENET</u>	ROMETI	ER (NZS 4402:1988, Test	<u>6.5.2); Lot 513 – S</u>	See Page 127 for locat	ion plan	
Depth	Penetration	Blo	ws /	Inferred Allowable Bearing Connector 1				
(mm)	(mm/blow)	100	300	(kPa)				
0 - 50	167	mm	mm	160		Informed Rearing	Canacity (1/P	a)
50 - 100	16.7	6		160		Interreu bearing	Capacity (KI	a)
100 - 150	25.0			119	0	50 100 150	200 25	0 300 350
150 - 200	8.3	8	18	267	0			
200 - 250	50.0	4		68	100			
250 - 300	16.7	4		160	-			
300 - 350	10.0	10		233	200			
350 - 400	10.0	-	-	233	300			
400 - 450	16.7	7	24	160	400			
450 - 500	12.5			190				
550 - 600	16.7	7		160	500			
600 - 650	25.0	-		119	600			
650 - 700	16.7	5		160	700		]	
700 - 750	25.0	4	14	119	/00			
750 - 800	25.0	4	14	119	800			
800 - 850	16.7	5		160	900			
850 - 900	25.0			119				
900 - 950	25.0	4		119	<b>a</b> <sup>1000</sup>			
950 - 1000 1000 - 1050	25.0			119	<b>H</b> 1100			
1050 - 1100	25.0	4	13	119	ų 1200		]	
1100 - 1150	16.7	_	-	160	e bt		1	
1150 - 1200	25.0	5		119	A 1300			
1200 - 1250	25.0	5		119	1400			
1250 - 1300	16.7	3		160				
1300 - 1350	7.1	12	26	299	1500			
1350 - 1400	10.0	12		233	1600			
1400 - 1450	12.5	9		198	1700			
1450 - 1500	10.0 8 3			255	1700			
1550 - 1600	83	12		267	1800			
1600 - 1650	7.1			299	1900			
1650 - 1700	8.3	13	35	267				
1700 - 1750	10.0	10	1	233	2000			
1750 - 1800	10.0	10		233	2100			
<sup>1</sup> Bearing capacity resu bearing pressure und	lts stated above have b er small structures. M.	een inferred J. Stockwell.	from Fig 2 – The results a	Determination of allowable we relative to the ground	2200	Inferred Bearing Ca	apacity (50mm Inter	vals)
conditions at the time	of test and will be hea	wily influence	ed if significa	nt gravel fraction is present.		Inferred Bearing C	apacity (300mm inte	ervals)
The inferred values s	hould be used conserve	atively. IANZ	endorsemen	t does not apply to these values.	2300	•		
NZS 3604:2011, Secti	on 3.3.7.1 (b) states the	at the ultimat	e bearing cap	pacity of the foundation shall be				
equal to twice the wid	th of the widest footing	g below the u	nderside of th	n exceeds 5 down to a depin ne proposed footing and 3 at				
greater depths.		Contack	iaal fast-	ty Cuidalinas 2005 (N-+)	ANZ Approdite -	Lot 512 Can Dage 1	27 for leasting	nlan
Denth (mm)	Description	Geotechi	ncai 50cie	ty Guidennes 2005 (NOT I	ANZ Accredited);	, Lot 313 - See Page I.	27 IOF location	piall
0 to 100	Tonsoil & veget	ation (org	anic matte	er).				
100 / 1000	Grey / brown G	ravelly SA	ND with	ninor silt. Moist. Tightly n	acked. Gravel. suba	angular to subrounded.	, maximum part	icle size 63.0mm:
100 to 1200	Sand, fine to co	arse; Silt,	non-plasti	с		a	Pui t	
1200 to 1500 *	Light grey SAN	D with tra	ce of / mir	or silt. Moist. Tightly pacl	ked. Sand, fine to co	oarse; Silt, non-plastic.		
* NZS 3604:2011, S	Section 3.3.6 requi	res a minin	num 50mm	diameter auger hole to be co	ompleted to the depth	of each scala penetrome	eter probe. Unabl	e to complete past the
depth indicated.								
Note:			, , <b>.</b>	• , , , • •	1.1.000	, <b>30 3 630</b> . A	,	6.4. 1
• The result	ts stated above ar	e specific	to the app	vroximate test locations as	recorded. CTS acc	epts no liability for an	y extrapolated i	ise of this data.
This report	rt may not be rep	roauced e	xcept in fi					
Tested Bv: F	K. Hipkins, C. I	Pearson.	T. Shaw	& C. Fisher Dat	e: 4 to 23	3-May-22		
						<i>v</i>	REDIN	
Checked Bv:	emplus					ACC	EDITED	
chevened by.	///////////////////////////////////////							Test results indicated



as not accredited are outside the scope of the laboratory's accreditation

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Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	<u>stephenc</u>	@veros.	<u>co.nz</u>				Atten	tion:	S. Corn	wall	
Job Description	n: Wooin	g Tree Su	ıbdivisio	n, Cromwell								
	~~		DOLES	D AIZO 1100 1000 -	<pre>/ `</pre>	x	4 0					
	SCAL	A PENET	KOMET	ER (NZS 4402:1988, Test	t 6.5.2);	Lot 51	4 – See l	age 12	7 for loca	tion plan		
Depth	Penetration	Blo	ws /	Interred Allowable								
(mm)	(mm/blow)	100	300	Bearing Capacity								
0.50	50.0	mm	mm	(KI a)	-							
<u> </u>	50.0	2		68	-		In	forrod	Roaring	Canacity	(l/Pa)	
<u> </u>	<u> </u>			198	-		10	lerreu	Dearing	Capacity	(KE a)	
150 - 200	10.0	9	21	233	-	0	50	100	150	200 250	300	350 400
200 - 250	10.0		_	233	-	0 :		T				
250 - 300	10.0	10		233		100						
300 - 350	8.3	10		267		200						
350 - 400	12.5	10		198		200						
400 - 450	12.5	8	26	198		300						
450 - 500	12.5	0	20	198		400						
500 - 550	12.5	- 8		198	_	500						
550 - 600	12.5	-		198	_	500						
600 - 650	16.7	7		160		600						
<u>650 - 700</u> 700 - 750	12.5		_	198	_	700						
750 - 800	10.7	8	23	233	1	0000						
800 - 850	10.0		_	233	-	800			_			
850 - 900	167	8		160	1	900						
900 - 950	25.0	_		119	-	1000						
950 - 1000	16.7	5		160	m)	1000						
1000 - 1050	25.0	-		119	(m	1100						
1050 - 1100	16.7	5	15	160	th	1200						
1100 - 1150	25.0	5		119	)ep	1200						
1150 - 1200	16.7	3		160	D	1300						
1200 - 1250	25.0	5		119		1400						
1250 - 1300	16.7	3		160		1500					_	
1300 - 1350	12.5	9	23	198								
1350 - 1400	10.0	-		233		1600						
1400 - 1450	12.5	9		198	_	1700						
1450 - 1500	10.0			233	-	1800						
1500 - 1550	10.0	10		233		1000						
1600 - 1650	10.0		_	233	-	1900						
1650 - 1700	5.0	15	36	388		2000						
1700 - 1750	8.3		_	267	-	2100						
1750 - 1800	10.0	- 11		233	-	2100		— Inferr	ed Bearing (	Capacity (50mm	Intervals)	
<sup>1</sup> Bearing capacity resu	lts stated above have	been inferred	from Fig 2 –	Determination of allowable		2200	_	Inferr	ed Bearing (	Capacity (300m	n intervals)	
conditions at the time	er small structures, M of test and will be he	I.J. Stockwell. avily influenc	the results a ed if significa	ire relative to the ground int gravel fraction is present.		2300		•				
The inferred values s	hould be used conserv	vatively. IANZ	endorsemen	t does not apply to these values.								
NZS 3604:2011, Secti	on 3.3.7.1 (b) states th	hat the ultima	te bearing cap	pacity of the foundation shall be								
assumed to be not les	s than 300 kPa if the	number of blo	ws per 100m	m exceeds 5 down to a depth								
greater depths.	an of the widest footh	ig below the u	naersiae oj u	ie proposea jooting and 5 at								
F	IELD LOG: NZ	C Geotechr	ical Socie	ty Guidelines 2005 (Not l	IANZ A	ccredit	ed); Lo	t 514 - S	See Page	127 for loca	tion plan	
Depth (mm)	Description											
0 to 150	Topsoil & vege	tation (org	anic matte	er).								
150 to 1400	Grey / brown (	Gravelly SA	ND with	minor silt. Moist. Tightly p	acked.	Gravel,	subangu	lar to s	ubroundee	d, maximum	particle s	ize 63.0mm;
150 10 1400	Sand, fine to co	oarse; Silt,	non-plasti	с.								
1400 to 1500 *	Light grey SAN	ND with tra	ace of / min	or silt. Moist. Tightly pacl	ked. Sar	nd, fine	to coarse	; Silt, n	on-plastic	•		
* NZS 3604:2011, S	Section 3.3.6 requi	ires a minin	num 50mm	diameter auger hole to be co	ompletea	l to the a	lepth of e	ach scal	a penetron	neter probe. l	U <b>nable to c</b>	omplete past the
Netes												
Note:	to stated about -	na specif -	to the area	novimate test location =	uaa au J	d CTS	aaa	no list	ilita fan -	un auturn -1	tad usa -	f this data
<ul> <li>I ne result</li> <li>This work</li> </ul>	is sidied above a st may not be see	re specific	w ine app	oroximule test locations as	record	ea. CIS	accepts	กง แลย	ning jor a	ny extrapola	ueu use oj	j inis data.
<ul> <li>Inis report</li> </ul>	ri muy not be rej	nouuced e	лсерt in fl	<i>и</i> и.								
Tested Bv:	K. Hipkins. C.	Pearson.	T. Shaw	& C. Fisher Date	e:	4 t	o 23-M	ay-22				
						- •				REDIN	I	
Checked Rv•	emply	7							ACC	ED		
Dy.											Test re	esults indicated
											as not	accredited are
									1		labora	tory's

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Reference No: 22/1550

Date: 26 May 2022

### TEST REPORT – SCALA PENETROMETER RESULTS

<b>Client Details:</b>	Veros,	stephenc	@veros.	<u>co.nz</u>				Attention	:	S. Cor	nwall		
Job Descriptio	n: Wooing	g Tree Su	bdivisio	n, Cromwell									
		A DENTE		ED (1/20 4400 1000 T	( = -	T		107.0	1 .				
	SCAL	A PENET	ROMET	ER (NZS 4402:1988, Test	: 6.5.2);	Lot 51	5 – See P	age 127 for	r locatio	n plan			
Depth	Penetration	BIO	ows /	Interred Allowable									
(mm)	(mm/blow)	100	300	Bearing Capacity									
0.50	50.0	mm	mm	(KF a)									
0 - 50	50.0	2		68	-		Inf	erred Bea	ring C	apacity	(kPa)		
50 - 100	50.0		-	<u> </u>									
100 - 150	25.0	4	11	119		0	0 50	100 15	0 200	250	300 35	50 40	0 450
200 250	25.0			119									
200 - 230	23.0	5		119		100							
300 - 350	25.0			110		200							
350 - 400	167	5		160					1				
400 - 450	16.7		_	160		300							
450 - 500	25.0	5	15	119		400							
500 - 550	25.0	_		119									
550 - 600	16.7	5		160		500			_				
600 - 650	25.0	-		119	1	600							
650 - 700	16.7	2		160	]	700			1				
700 - 750	16.7	=	17	160	]	/00							
750 - 800	25.0	2	10	119		800							
800 - 850	25.0	6		119	]	000							
850 - 900	12.5	U		198		900							
900 - 950	16.7	7		160		1000							
950 - 1000	12.5	/		198	um	1100							
1000 - 1050	12.5	8	22	198	(D	1100							
1050 - 1100	12.5	0	22	198	oth	1200							
1100 - 1150	25.0	7		119	Del	1300				_			
1150 - 1200	10.0	'		233	Γ	1500							
1200 - 1250	12.5	8		198		1400							
1250 - 1300	12.5	0		198		1500							
1300 - 1350	10.0	10	32	233		1500							
1350 - 1400	10.0			233		1600							
1400 - 1450	7.1	14		299		1700							
1450 - 1500	7.1			299	-	1/00							
1500 - 1550	7.1	13		299	-	1800					-		
1550 - 1600	8.3			267		1900							
1600 - 1650	5.0	20	51	388									
1030 - 1700	5.0		_	300		2000							
1750 1800	5.0	18		388		2100							
<sup>1</sup> Bearing capacity resu	5.0 Its stated above have h	een inferred	from Fig 2 –	Determination of allowable	1	0000		—Inferred Be	aring Cap	acity (50m	m Intervals		
bearing pressure und	er small structures, M	J. Stockwell.	The results a	re relative to the ground		2200	—	Inferred Be	aring Cap	acity (3001	nm interval	s)	
conditions at the time The inferred values s	e of test and will be hea hould be used conserv	wily influence atively, IANZ	ed if significa Cendorsemen	nt gravel fraction is present. t does not apply to these values		2300	L						
NZS 3604:2011, Secti assumed to be not les equal to twice the wia	on 3.3.7.1 (b) states th s than 300 kPa if the 1 th of the widest footin	at the ultimat 1umber of blo g below the u	te bearing cap ws per 100m nderside of th	pacity of the foundation shall be n exceeds 5 down to a depth te proposed footing and 3 at									
greater uepins.	IELD LOG: NZ	Geotechr	ical Socie	ty Guidelines 2005 (Not 1	IANZ A	ccredi	ted): Lot	515 - See I	Page 127	7 for loc	ation nla	n	
Depth (mm)	Description	Scotten		-, Guiacines #000 (1101)			, 101	5001		101 101			
0 to 100	Topsoil & vege	tation (org	anic matte	er).									
	Grey / brown G	Gravelly SA	ND with	ningr silt. Maist Tightly n	acked	Gravel	subanoul	ar to subro	unded r	naximu	n narticle	size 63	3.0mm ·
100 to 1300	Sand, fine to co	arse; Silt,	non-plasti	c. nor silt. Moist. Tightly nacl	ked. Sa	nd. fine	to coarse:	Silt, non-n	lastic.		par neit		,
* NZS 3604:2011	Section 3.3.6 reauti	res a minin	100 50mm	diameter auger hole to be co	mnleter	to the	lenth of ea	ch scala ner	etromet	er probe	Unable to	o comnl	ete nast the
depth indicated.						<i>in</i> e t		pen		- p. oot.	<u></u>		
Note:													
<ul><li>The result</li><li>This report</li></ul>	ts stated above an rt may not be rep	re specific produced e	to the app xcept in fi	roximate test locations as ull.	record	ed. CTS	S accepts i	no liability	for any	extrapo	lated use	of this	data.
Fested By: H	K. Hipkins, C.	Pearson,	T. Shaw	& C. Fisher Dat	e:	4 1	to 23-Ma	ay-22	CRE	DIT	1		
Checked By:	emplus	,							ACON	ED	Test	results	indicated



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

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Reference No: 22/1550

Date: 26 May 2022

### <u> TEST REPORT – SCALA PENETROMETER RESULTS</u>

<b>Client Details:</b>	Veros, <u>stephenc@veros.co.nz</u>	Attention:	S. Cornwall
Job Description:	Wooing Tree Subdivision, Cromwell		
Test Mathada	Scala Penetrometer - NZS 4402:1988, Test 6.5.2		
Test Methods:	Field Logs – NZ Geotechnical Society Guidelines 2005 (Not IANZ	Accredited)	



Note: Test Locations Pegged by Paterson Pitts Group - Centre of All Lots

Note:

- Geotechnical issues relating to slope stability, suitability of the site or the potential for liquefaction are outside the scope of this report.
- The results stated above are specific to the test locations as recorded. Central Testing Services accepts no liability for any extrapolated use of this data.
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Date:

• This report may not be reproduced except in full.

Tested By: K. Hipkins, C. Pearson, T. Shaw & C. Fisher

Checked By: emplo

**Approved Signatory** 

A.P. Julius Laboratory Manager



4 to 23-May-22

Test results indicated as not accredited are outside the scope of the laboratory's accreditation