

12 January 2023

STAGE 2 WOONG TREE SUBDIVISION

64 SHORTCUT ROAD, CROMWELL

GEOTECHNICAL COMPLETION REPORT

Woong Tree Property Development LP

TGA2022-0063AB Rev1

TGA2022-0063AB		
Date	Revision	Comments
22 June 2022	A	Initial draft for internal review
08 July 2022	B	Final draft for client review
26 July 2022	0	Final issue to client
10 January 2023	1	Revised report issued to client


	Name	Signature	Position
Prepared by	Michael Stephens		Project Engineering Geologist
Reviewed by	Robert Taylor		Associate Geotechnical Engineer
Authorised by	Dave Morton		Principal Geotechnical Engineer CMEngNZ, CPEng



TABLE OF CONTENTS

1. INTRODUCTION	1
2. DESCRIPTION OF SUBDIVISION	1
3. DESCRIPTION OF EARTHWORKS	1
4. GROUND MODEL	2
4.1. Published Geology	2
4.2. Field Investigations	2
4.3. Stratigraphic Units.....	2
4.4. Groundwater	3
5. EVALUATION OF COMPLETED LANDFORM	3
5.1. Contractors Work	3
5.2. Engineered Fill	3
5.3. Liquefaction	3
5.4. Slope Stability	4
5.5. Settlement	Error! Bookmark not defined.
5.6. Foundation Recommendations	4
5.7. Future Bearing Capacity Assessment.....	Error! Bookmark not defined.
5.8. Strength Reduction Factor	5
5.9. Seismic Site Subsoil Class	5
5.10. Cut and Fill Restrictions	5
5.11. Stormwater Controls	5
5.12. Service Trenches	5
5.13. Road Subgrade	5
6. LIMITATION	5

Drawings

Drawing 01 – Geotechnical Investigation Plan

Drawing 02 – NZ3604 Compliant Site Plan

Appendices

Appendix A: Select Subdivision Development and As-Built Plans

Appendix B: Field Investigation Records

Appendix C: B F Whitham Quality Assurance Report

Appendix D: CTS Post Construction Boreholes

1. INTRODUCTION

This Geotechnical Completion Report (GCR) has been prepared for Woong 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 Woong 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, Woong Tree Development. Stage 2 consists of 127 flat residential lots ranging from 252m² to 731m², 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 maps¹ 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 Woong 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 guidance². Logging of soils was done by a CMW Engineering Geologist in general accordance with NZGS guidelines³.

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.

¹ www.gns.cri.nz

² NZ Geotechnical Society et al, New Zealand Ground Investigation Specification, Vol 1, April 2017.

³ 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	Approximate depth to top (m)		Approximate thickness (m)	
	Min	Max	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 Aquifer Study⁴ 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.

⁴ 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 NZS3604 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 filling or footings widened / depend accordingly necessitating the involvement of a Chartered Professional Engineer.

5.6. Settlement

Subject to compliance with the further earthfill 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 200m² requires a minimum of four tests across the plan area to determine bearing capacity of the soils. One additional test is required for each 100m² 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 Woong 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 Woong Tree Property Development LP in relation to the Stage 2 Woong 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 Woong 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

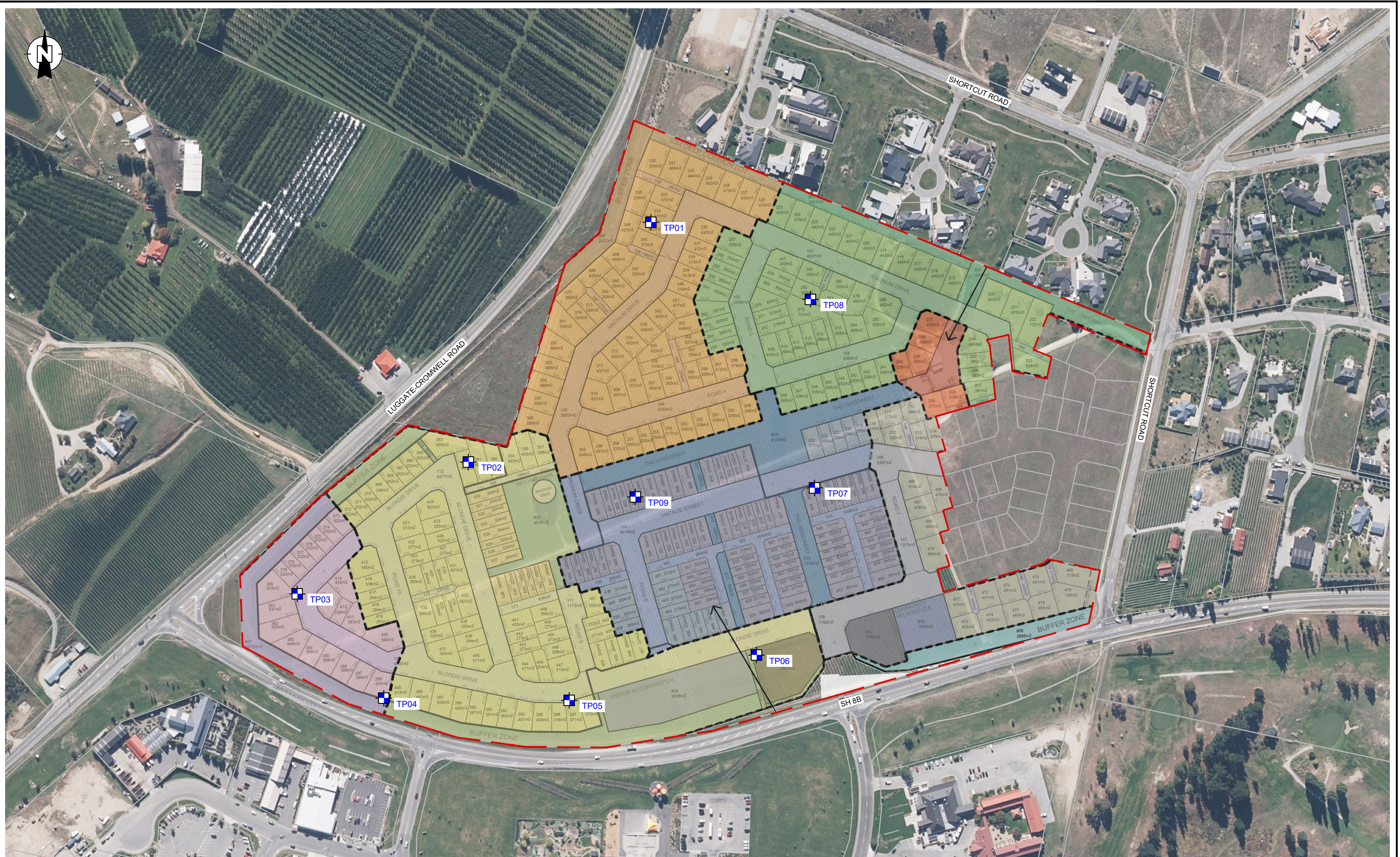
Unless specifically discussed in your report environmental matters are not covered by a CMW Geotechnical Report. Environmental matters might include the level of contaminants present of the site covered by this report, potential uses or treatment of contaminated materials or the disposal of contaminated 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



LEGEND:
 TP01 TEST PIT (TP) LOCATION
 SITE BOUNDARY

NOTES:
 1. AERIAL IMAGE ADAPTED FROM LAND INFORMATION NEW ZEALAND DATA SERVICE.



CLIENT: WOONG TREE PROPERTY DEVELOPMENT LP	DRAWN: HV	PROJECT: TGA2022-0063
PROJECT: 64 SHORTCUT ROAD, CROMWELL	CHECKED: MS	DRAWING: 01
TITLE: TEST LOCATION PLAN	REVISION: 0	SCALE: 1:3000
	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

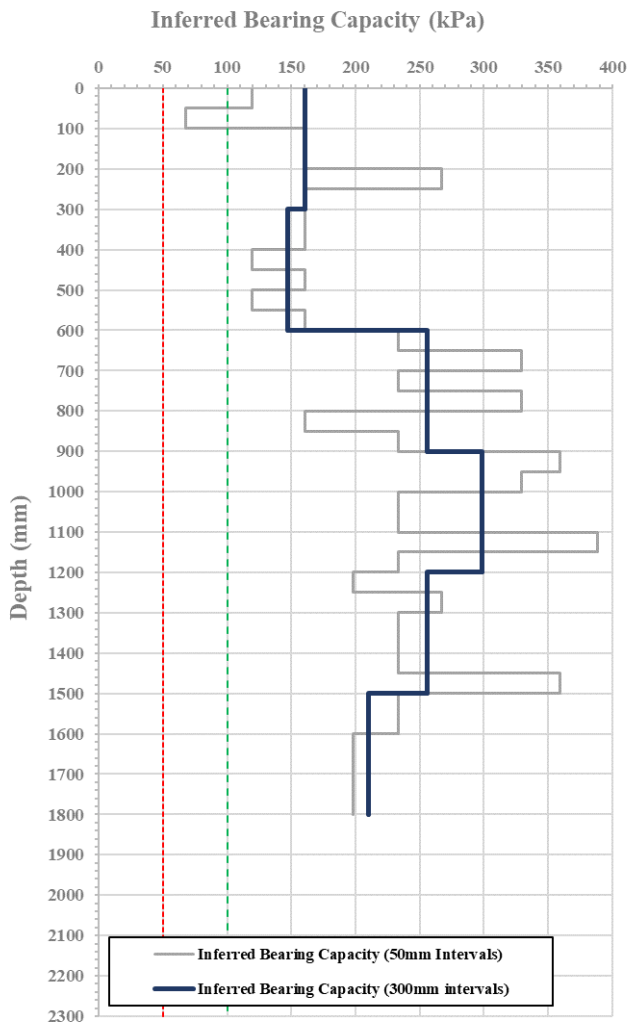
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 200 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	3	18	119
50 - 100	50.0	3		68
100 - 150	16.7	6		160
150 - 200	16.7	6	16	160
200 - 250	8.3	9		267
250 - 300	16.7	9		160
300 - 350	16.7	6	34	160
350 - 400	16.7	6		160
400 - 450	25.0	5		119
450 - 500	16.7	5	42	160
500 - 550	25.0	5		119
550 - 600	16.7	5		160
600 - 650	10.0	13	34	233
650 - 700	6.3	13		330
700 - 750	10.0	13		233
750 - 800	6.3	13	26	330
800 - 850	16.7	8		160
850 - 900	10.0	8		233
900 - 950	5.6	17	34	359
950 - 1000	6.3	17		330
1000 - 1050	10.0	10		233
1050 - 1100	10.0	10	26	233
1100 - 1150	5.0	15		388
1150 - 1200	10.0	15		233
1200 - 1250	12.5	10	26	198
1250 - 1300	8.3	10		267
1300 - 1350	10.0	10		233
1350 - 1400	10.0	10	26	233
1400 - 1450	10.0	10		233
1450 - 1500	5.6	14		359
1500 - 1550	10.0	10	26	233
1550 - 1600	10.0	10		233
1600 - 1650	12.5	8		198
1650 - 1700	12.5	8	26	198
1700 - 1750	12.5	8		198
1750 - 1800	12.5	8		198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 200 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1400 *	Brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 201 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	12.5	12		198
50 - 100	6.3			330
100 - 150	4.2	25	61	444
150 - 200	3.8			471
200 - 250	3.6	24		497
250 - 300	5.0			388
300 - 350	3.8	23		471
350 - 400	5.0			388
400 - 450	8.3	16	49	267
450 - 500	5.0			388
500 - 550	12.5	10		198
550 - 600	8.3			267
600 - 650	10.0	16		233
650 - 700	4.5			416
700 - 750	12.5	8	34	198
750 - 800	12.5			198
800 - 850	10.0	10		233
850 - 900	10.0			233
900 - 950	8.3	12		267
950 - 1000	8.3			267
1000 - 1050	10.0	10	29	233
1050 - 1100	10.0			233
1100 - 1150	12.5	7		198
1150 - 1200	16.7			160
1200 - 1250	12.5	9		198
1250 - 1300	10.0			233
1300 - 1350	4.5	18	44	416
1350 - 1400	7.1			299
1400 - 1450	6.3	17		330
1450 - 1500	5.6			359
1500 - 1550	5.6	17		359
1550 - 1600	6.3			330
1600 - 1650	10.0	12	44	233
1650 - 1700	7.1			299
1700 - 1750	7.1	15		299
1750 - 1800	6.3			330

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 201 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1300 *	Brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

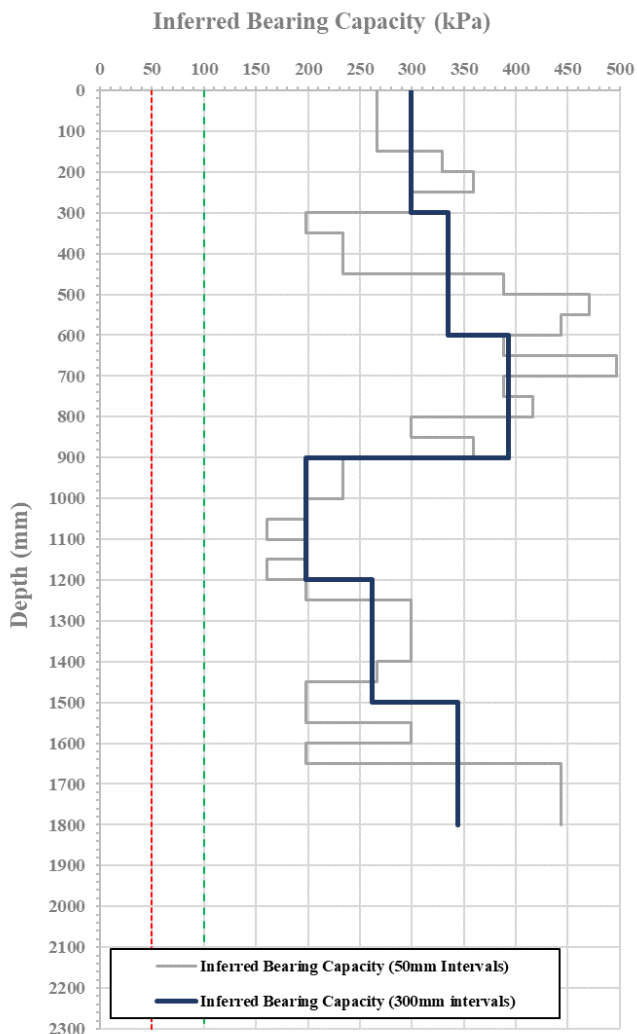
TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 202 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	8.3	12		267
50 - 100	8.3			267
100 - 150	8.3	14	42	267
150 - 200	6.3			330
200 - 250	5.6			359
250 - 300	7.1	16		299
300 - 350	12.5			198
350 - 400	10.0	9		233
400 - 450	10.0			233
450 - 500	5.0	15	49	388
500 - 550	3.8			471
550 - 600	4.2	25		444
600 - 650	5.0			388
650 - 700	3.6	24		497
700 - 750	5.0			388
750 - 800	4.5	21	61	416
800 - 850	7.1			299
850 - 900	5.6	16		359
900 - 950	10.0			233
950 - 1000	10.0	10		233
1000 - 1050	12.5			198
1050 - 1100	16.7	7	24	160
1100 - 1150	12.5			198
1150 - 1200	16.7	7		160
1200 - 1250	12.5			198
1250 - 1300	7.1	11		299
1300 - 1350	7.1			299
1350 - 1400	7.1	14	35	299
1400 - 1450	8.3			267
1450 - 1500	12.5	10		198
1500 - 1550	12.5			198
1550 - 1600	7.1	11		299
1600 - 1650	12.5			198
1650 - 1700	4.2	16	51	444
1700 - 1750	4.2			444
1750 - 1800	4.2	24		444

¹ 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.



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 202 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1500 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



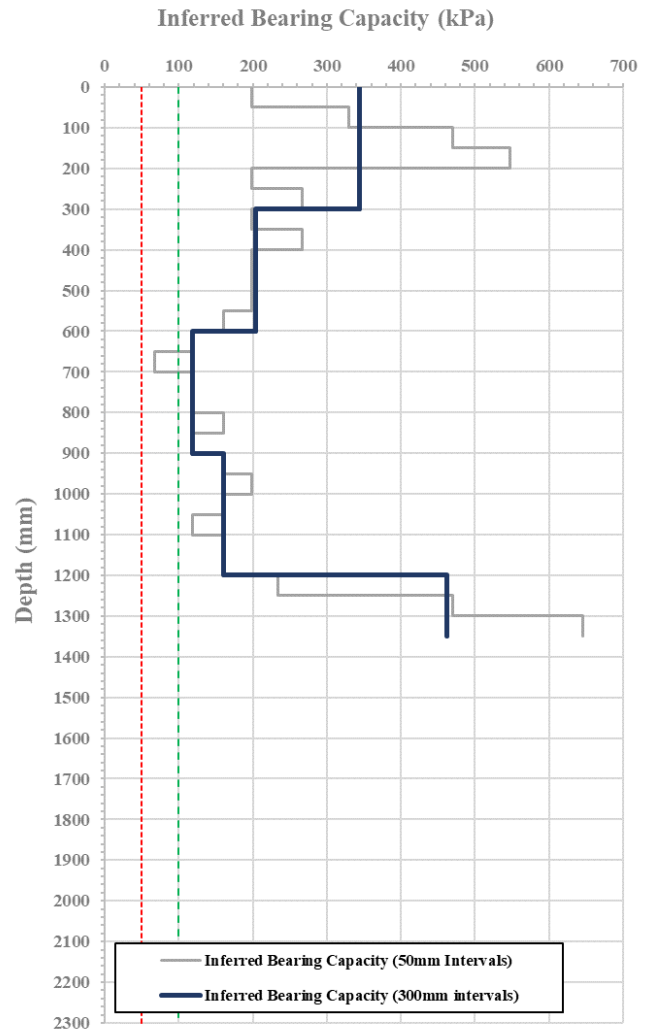
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 203 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	12.5	12	51	198
50 - 100	6.3	29		330
100 - 150	3.8			471
150 - 200	3.1	548		
200 - 250	12.5	10		198
250 - 300	8.3		267	
300 - 350	12.5	10	198	
350 - 400	8.3		267	
400 - 450	12.5	8	198	
450 - 500	12.5		198	
500 - 550	12.5		198	
550 - 600	16.7	7	160	
600 - 650	25.0		119	
650 - 700	50.0	3	68	
700 - 750	25.0		119	
750 - 800	25.0	4	119	
800 - 850	16.7		160	
850 - 900	25.0	5	119	
900 - 950	16.7		160	
950 - 1000	12.5	7	198	
1000 - 1050	16.7		160	
1050 - 1100	25.0	5	119	
1100 - 1150	16.7		160	
1150 - 1200	16.7	6	160	
1200 - 1250	10.0		233	
1250 - 1300	3.8	18	471	
1300 - 1350	2.5		645	
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 203 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1150	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
1150 to 1500	Grey Sandy GRAVEL with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



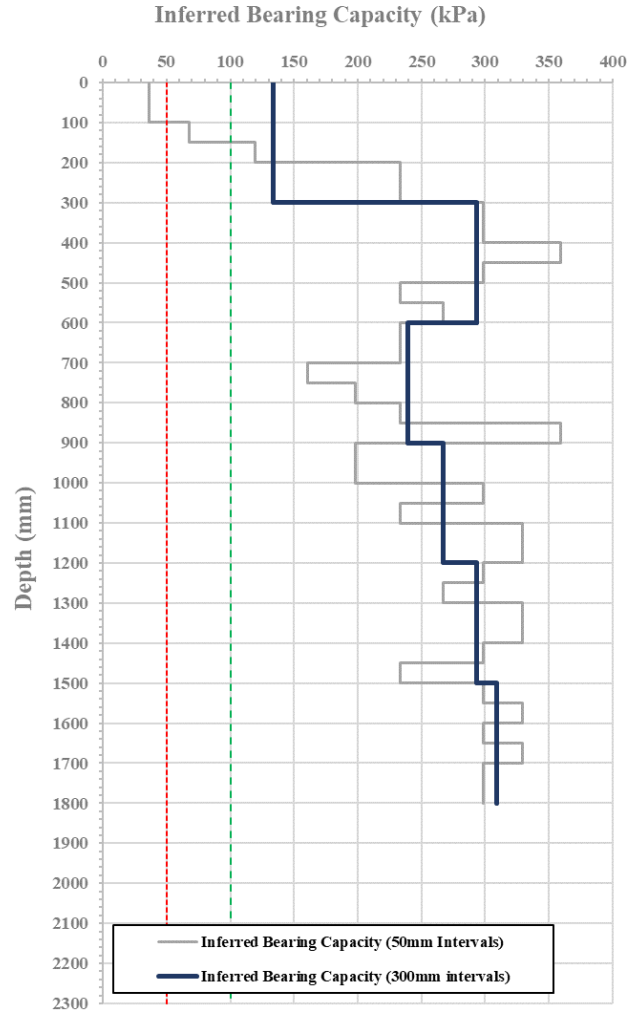
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 204 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	14	36
50 - 100	100.0	1		36
100 - 150	50.0	3		68
150 - 200	25.0	10	41	119
200 - 250	10.0			233
250 - 300	10.0	14	41	233
300 - 350	7.1			299
350 - 400	7.1	16	41	299
400 - 450	5.6			359
450 - 500	7.1	11	31	299
500 - 550	10.0			233
550 - 600	8.3	10	31	267
600 - 650	10.0			233
650 - 700	10.0	7	31	233
700 - 750	16.7			160
750 - 800	12.5	14	41	198
800 - 850	10.0			233
850 - 900	5.6	8	44	359
900 - 950	12.5			198
950 - 1000	12.5	12	44	198
1000 - 1050	7.1			299
1050 - 1100	10.0	16	44	233
1100 - 1150	6.3			330
1150 - 1200	6.3	13	44	330
1200 - 1250	7.1			299
1250 - 1300	8.3	16	44	267
1300 - 1350	6.3			330
1350 - 1400	6.3	12	44	330
1400 - 1450	7.1			299
1450 - 1500	10.0	15	44	233
1500 - 1550	7.1			299
1550 - 1600	6.3	15	44	330
1600 - 1650	7.1			299
1650 - 1700	6.3	14	44	330
1700 - 1750	7.1			299
1750 - 1800	7.1			299



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 204 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1600 *	Brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 205 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	18	36
50 - 100	100.0	1		36
100 - 150	25.0	5		119
150 - 200	16.7	12	42	160
200 - 250	8.3			267
250 - 300	8.3	12	37	267
300 - 350	8.3			267
350 - 400	8.3	14	30	267
400 - 450	7.1			299
450 - 500	7.1	16	43	299
500 - 550	6.3			330
550 - 600	6.3	14	31	330
600 - 650	6.3			267
650 - 700	8.3	12	30	267
700 - 750	8.3			267
750 - 800	8.3	11	31	267
800 - 850	8.3			267
850 - 900	10.0	12	30	233
900 - 950	8.3			267
950 - 1000	8.3	8	31	267
1000 - 1050	12.5			198
1050 - 1100	12.5	10	43	198
1100 - 1150	8.3			267
1150 - 1200	12.5	10	31	198
1200 - 1250	10.0			233
1250 - 1300	10.0	9	31	233
1300 - 1350	10.0			233
1350 - 1400	12.5	12	43	198
1400 - 1450	10.0			233
1450 - 1500	7.1	15	31	299
1500 - 1550	7.1			330
1550 - 1600	6.3	15	43	330
1600 - 1650	6.3			299
1650 - 1700	7.1	13	31	299
1700 - 1750	7.1			299
1750 - 1800	8.3			267

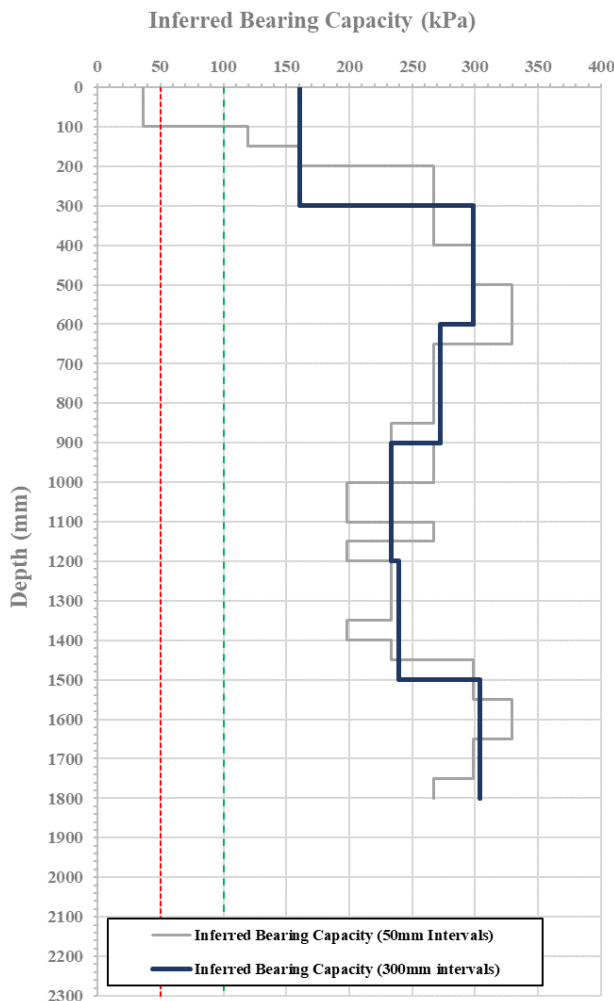
¹ Bearing capacity results stated above have been inferred from Fig 2 – Determination of allowable bearing pressure under small structures, M.J. Stockwell. The results are relative to the ground conditions at the time of test and will be heavily influenced if significant gravel fraction is present. The 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 205 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1450 *	Grey / brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

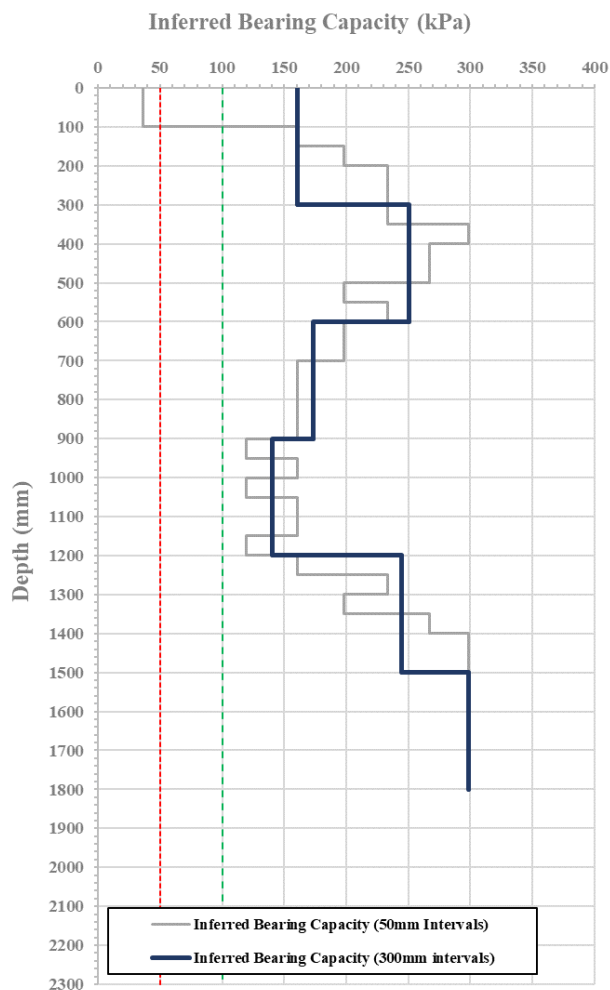
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 206 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	18	36
50 - 100	100.0	1		36
100 - 150	16.7	7		160
150 - 200	12.5	10	33	198
200 - 250	10.0			233
250 - 300	10.0	12	20	233
300 - 350	10.0			233
350 - 400	7.1	12	33	299
400 - 450	8.3			267
450 - 500	8.3	9	15	267
500 - 550	12.5			198
550 - 600	10.0	8	20	233
600 - 650	12.5			198
650 - 700	12.5	6	15	160
700 - 750	16.7			160
750 - 800	16.7	6	32	160
800 - 850	16.7			160
850 - 900	16.7	5	42	160
900 - 950	25.0			119
950 - 1000	16.7	5	15	160
1000 - 1050	25.0			119
1050 - 1100	16.7	5	32	160
1100 - 1150	16.7			160
1150 - 1200	25.0	8	15	119
1200 - 1250	16.7			160
1250 - 1300	10.0	10	20	233
1300 - 1350	12.5			198
1350 - 1400	8.3	14	32	267
1400 - 1450	7.1			299
1450 - 1500	7.1	14	42	299
1500 - 1550	7.1			299
1550 - 1600	7.1	14	15	299
1600 - 1650	7.1			299
1650 - 1700	7.1	14	32	299
1700 - 1750	7.1			299
1750 - 1800	7.1	14	42	299



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 206 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1400 *	Grey / brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 207 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	17	68
50 - 100	50.0			68
100 - 150	25.0	5		119
150 - 200	16.7	10	39	160
200 - 250	10.0			233
250 - 300	10.0	12	26	233
300 - 350	10.0			233
350 - 400	7.1			299
400 - 450	5.6	16	16	359
450 - 500	7.1			299
500 - 550	10.0	11	9	233
550 - 600	8.3			267
600 - 650	8.3	10	26	267
650 - 700	12.5			198
700 - 750	12.5	9	16	198
750 - 800	10.0			233
800 - 850	12.5	7	9	198
850 - 900	16.7			160
900 - 950	25.0	5	16	119
950 - 1000	16.7			160
1000 - 1050	16.7	6	9	160
1050 - 1100	16.7			160
1100 - 1150	25.0	5	52	119
1150 - 1200	16.7			160
1200 - 1250	25.0	5	9	119
1250 - 1300	16.7			160
1300 - 1350	50.0	2	16	68
1350 - 1400	50.0			68
1400 - 1450	50.0	2	52	68
1450 - 1500	50.0			68
1500 - 1550	25.0	7	9	119
1550 - 1600	10.0			233
1600 - 1650	10.0	16	52	233
1650 - 1700	4.5			416
1700 - 1750	2.5	-	-	645

Refusal

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 207 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1450 *	Grey / brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

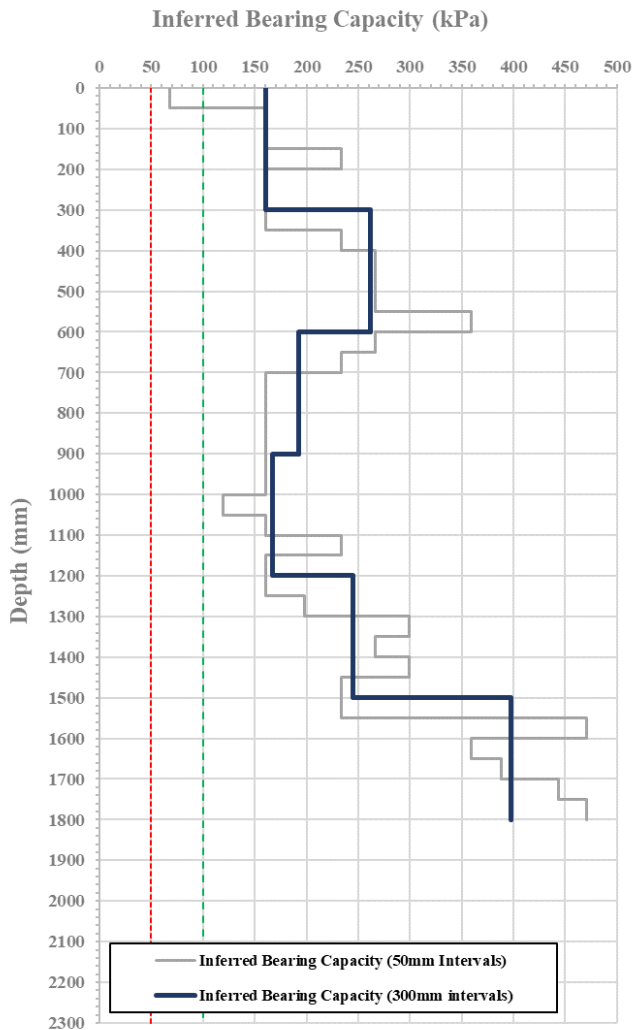
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 208 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	4	18	68
50 - 100	16.7	4		160
100 - 150	16.7	8		160
150 - 200	10.0	8		233
200 - 250	16.7	6	35	160
250 - 300	16.7	6		160
300 - 350	16.7	8		233
350 - 400	10.0	8		267
400 - 450	8.3	12	23	267
450 - 500	8.3	12		267
500 - 550	8.3	15		267
550 - 600	5.6	15		359
600 - 650	8.3	11	19	267
650 - 700	10.0	11		233
700 - 750	16.7	6		160
750 - 800	16.7	6		160
800 - 850	16.7	6	32	160
850 - 900	16.7	6		160
900 - 950	16.7	6		160
950 - 1000	16.7	6		160
1000 - 1050	25.0	5	62	119
1050 - 1100	16.7	5		160
1100 - 1150	10.0	8		233
1150 - 1200	16.7	8		160
1200 - 1250	16.7	7	18	160
1250 - 1300	12.5	7		198
1300 - 1350	7.1	13		299
1350 - 1400	8.3	13		267
1400 - 1450	7.1	12	19	299
1450 - 1500	10.0	12		233
1500 - 1550	10.0	18		233
1550 - 1600	3.8	18		471
1600 - 1650	5.6	19	25	359
1650 - 1700	5.0	19		388
1700 - 1750	4.2	25		444
1750 - 1800	3.8	25		471



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 208 - See Page 127 for location plan

Depth (mm)	Description
0 to 20	Existing seal.
20 to 100	Basecourse.
100 to 1450 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

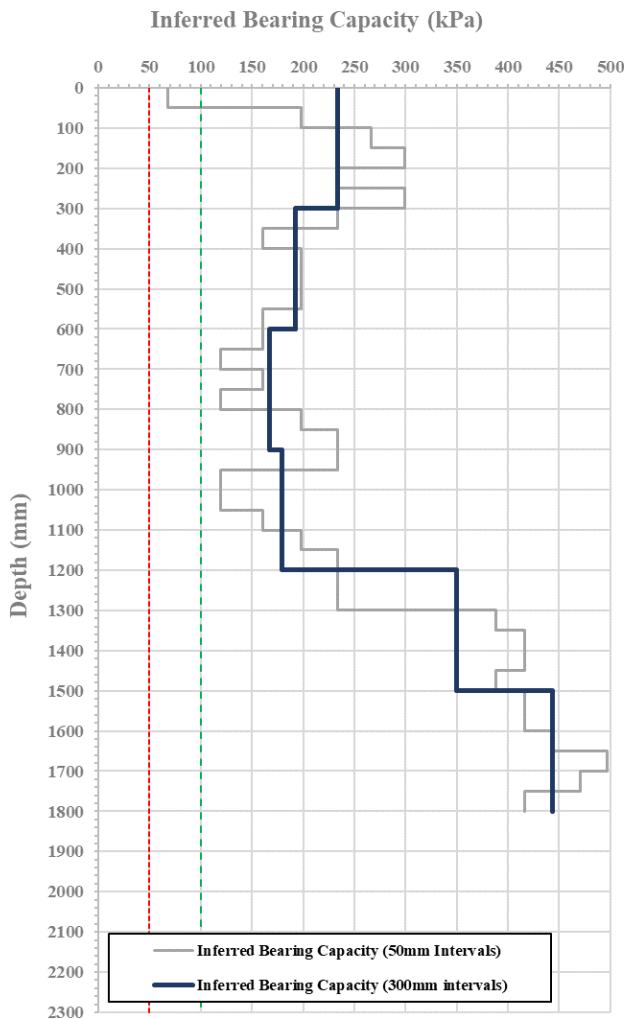
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 209 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	5	30	68
50 - 100	12.5	5		198
100 - 150	8.3	13		267
150 - 200	7.1	13		299
200 - 250	10.0	12	23	233
250 - 300	7.1	12		299
300 - 350	10.0	8	19	233
350 - 400	16.7	8		160
400 - 450	12.5	8		198
450 - 500	12.5	8		198
500 - 550	12.5	7	21	198
550 - 600	16.7	7		160
600 - 650	16.7	5		160
650 - 700	25.0	5		119
700 - 750	16.7	5	52	160
750 - 800	25.0	5		119
800 - 850	12.5	9		198
850 - 900	10.0	9		233
900 - 950	10.0	7	72	233
950 - 1000	25.0	7		119
1000 - 1050	25.0	5		119
1050 - 1100	16.7	5		160
1100 - 1150	12.5	9	26	198
1150 - 1200	10.0	9		233
1200 - 1250	10.0	10		233
1250 - 1300	10.0	10		233
1300 - 1350	5.0	21	24	388
1350 - 1400	4.5	21		416
1400 - 1450	4.5	21		416
1450 - 1500	5.0	21		388
1500 - 1550	4.5	22	24	416
1550 - 1600	4.5	22		416
1600 - 1650	4.2	26		444
1650 - 1700	3.6	26		497
1700 - 1750	3.8	24	24	471
1750 - 1800	4.5	24		416



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 209 - See Page 127 for location plan

Depth (mm)	Description
0 to 20	Existing seal.
20 to 100	Basecourse.
100 to 1500 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 19.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



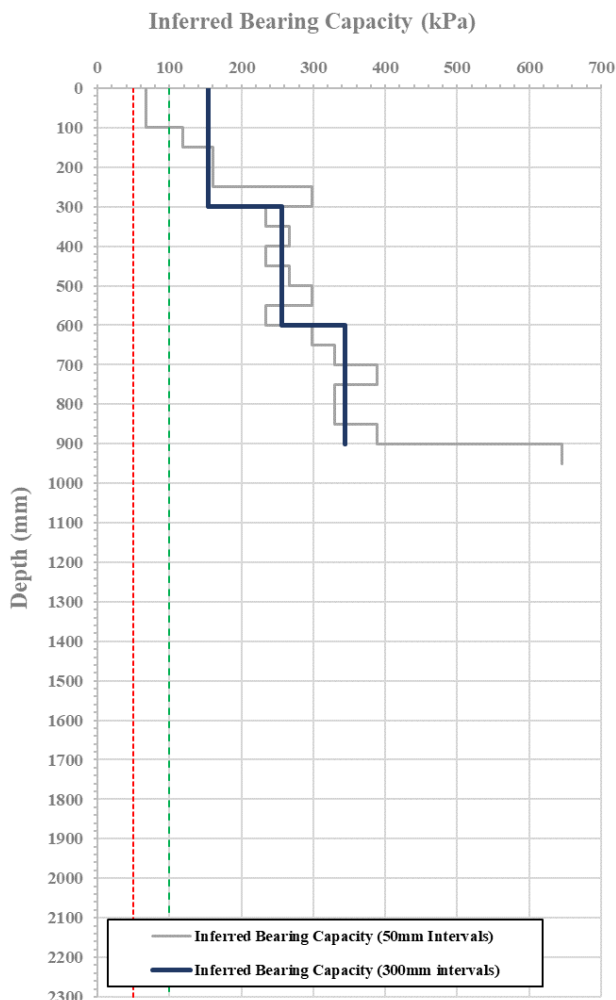
Test results indicated as not accredited are outside the scope of the laboratory's accreditation



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 237 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	17	68
50 - 100	50.0	5		68
100 - 150	25.0			119
150 - 200	16.7	10		160
200 - 250	16.7			160
250 - 300	7.1		299	
300 - 350	10.0	11	233	
350 - 400	8.3		34	267
400 - 450	10.0			233
450 - 500	8.3		12	267
500 - 550	7.1	299		
550 - 600	10.0	233		
600 - 650	7.1	15	299	
650 - 700	6.3		330	
700 - 750	5.0	18	388	
750 - 800	6.3		51	330
800 - 850	6.3			330
850 - 900	5.0	18	388	
900 - 950	2.5		-	645
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 237 - See Page 127 for location plan	
Depth (mm)	Description
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, Section 3.3.6 requires a minimum 50mm diameter auger hole to be completed to the depth of each scala penetrometer probe.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

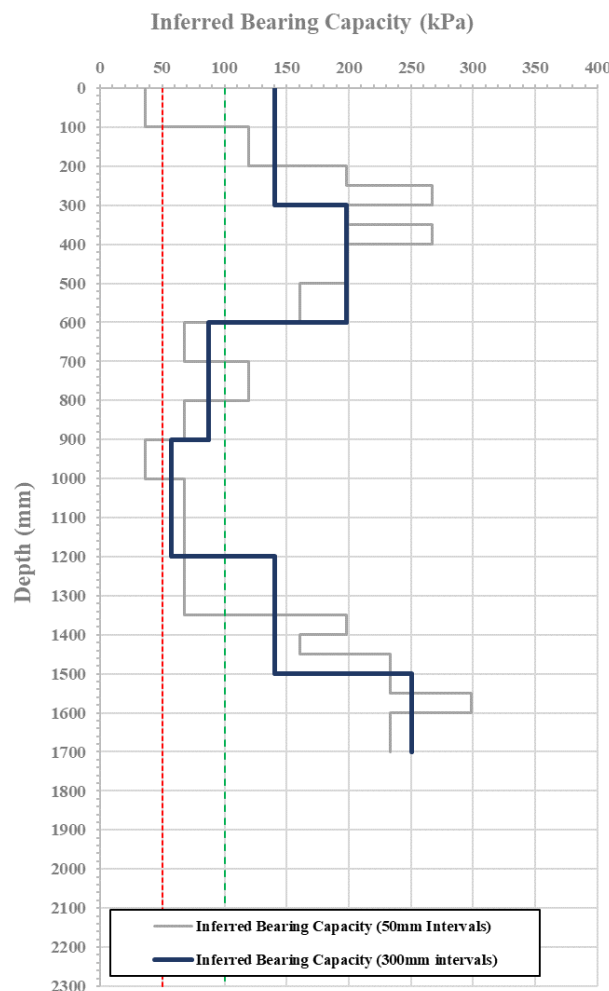
P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 238 – See Page 127 for location plan

Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	15	36
50 - 100	100.0	1		36
100 - 150	25.0	4		119
150 - 200	25.0	4	24	119
200 - 250	12.5	10		198
250 - 300	8.3	10		267
300 - 350	12.5	10	8	198
350 - 400	8.3	10		267
400 - 450	12.5	8		198
450 - 500	12.5	8	5	198
500 - 550	16.7	6		160
550 - 600	16.7	6		160
600 - 650	50.0	2	8	68
650 - 700	50.0	2		68
700 - 750	25.0	4		119
750 - 800	25.0	4	15	119
800 - 850	50.0	2		68
850 - 900	50.0	2		68
900 - 950	100.0	1	≅ 33	36
950 - 1000	100.0	1		36
1000 - 1050	50.0	2		68
1050 - 1100	50.0	2	15	68
1100 - 1150	50.0	2		68
1150 - 1200	50.0	2		68
1200 - 1250	50.0	2	8	68
1250 - 1300	50.0	2		68
1300 - 1350	50.0	5		68
1350 - 1400	12.5	5	12	198
1400 - 1450	16.7	8		160
1450 - 1500	10.0	8		233
1500 - 1550	10.0	12	10	233
1550 - 1600	7.1	12		299
1600 - 1650	10.0	10		233
1650 - 1700	10.0	10	233	



Refusal

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 238 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 700	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.
700 to 1200	Yellowish brown Gravelly Sandy SILT with minor clay. Moist. Firm. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, slight plasticity.
1200 to 1500 *	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, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

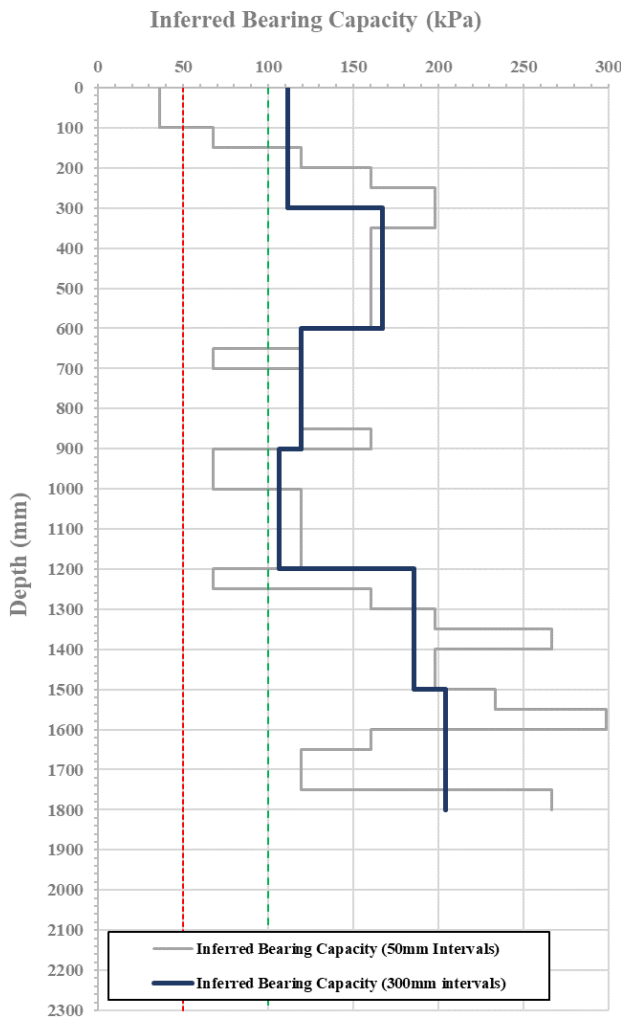
"Central Testing Services operates as a trading trust through Central Testing Services Limited as the sole trustee."



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 240 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	11	36
50 - 100	100.0	1		36
100 - 150	50.0	3		68
150 - 200	25.0	7	19	119
200 - 250	16.7			160
250 - 300	12.5	198		
300 - 350	12.5	7	19	198
350 - 400	16.7			160
400 - 450	16.7	6		12
450 - 500	16.7		160	
500 - 550	16.7	6	10	
550 - 600	16.7			160
600 - 650	25.0	3		22
650 - 700	50.0		68	
700 - 750	25.0	4	25	
750 - 800	25.0			119
800 - 850	25.0	5		10
850 - 900	16.7		160	
900 - 950	50.0	2	22	
950 - 1000	50.0			68
1000 - 1050	25.0	4		10
1050 - 1100	25.0		119	
1100 - 1150	25.0	4	22	
1150 - 1200	25.0			119
1200 - 1250	50.0	4		25
1250 - 1300	16.7		160	
1300 - 1350	12.5	10	22	
1350 - 1400	8.3			267
1400 - 1450	12.5	8		25
1450 - 1500	12.5		198	
1500 - 1550	10.0	12	25	
1550 - 1600	7.1			299
1600 - 1650	16.7	5		25
1650 - 1700	25.0		119	
1700 - 1750	25.0	8	25	
1750 - 1800	8.3			267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 240 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1150	Grey / brown Gravelly Silty SAND. Moist. Loose. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
1150 to 1500 *	Grey Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 26.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

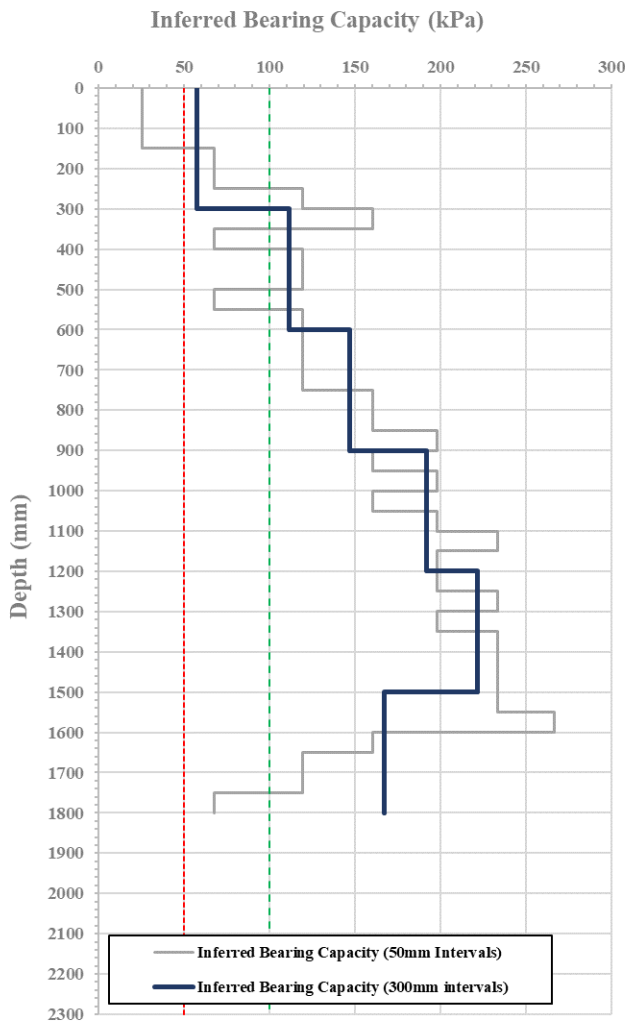
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 241 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	150.0	0.7	5	25
50 - 100	150.0			25
100 - 150	150.0			25
150 - 200	50.0	1.3	5	68
200 - 250	50.0			68
250 - 300	25.0	3	5	119
300 - 350	16.7			160
350 - 400	50.0	4	11	68
400 - 450	25.0			119
450 - 500	25.0	4	11	119
500 - 550	50.0			68
550 - 600	25.0	3	16	119
600 - 650	25.0			119
650 - 700	25.0	4	16	119
700 - 750	25.0			119
750 - 800	16.7	5	16	160
800 - 850	16.7			160
850 - 900	12.5	7	23	198
900 - 950	16.7			160
950 - 1000	12.5	7	23	198
1000 - 1050	16.7			160
1050 - 1100	12.5	7	23	198
1100 - 1150	10.0			233
1150 - 1200	12.5	9	28	198
1200 - 1250	12.5			198
1250 - 1300	10.0	9	28	233
1300 - 1350	12.5			198
1350 - 1400	10.0	9	28	233
1400 - 1450	10.0			233
1450 - 1500	10.0	10	19	233
1500 - 1550	10.0			233
1550 - 1600	8.3	11	19	267
1600 - 1650	16.7			160
1650 - 1700	25.0	5	19	119
1700 - 1750	25.0			119
1750 - 1800	50.0	3	19	68



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 241 - See Page 127 for location plan

Depth (mm)	Description
0 to 1000	Brown Gravelly SAND with trace of cobbles and trace of / minor silt. Moist. Loose. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, fine to coarse; Silt, non-plastic.
1000 to 1500 *	Grey / brown SAND with trace of / minor silt. Moist. Loose. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

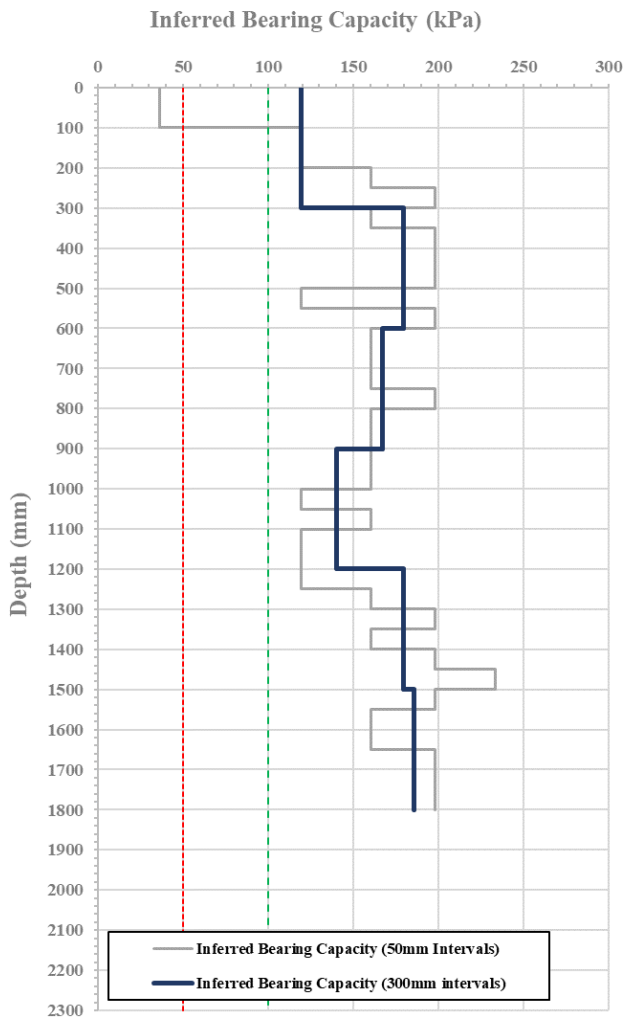
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 242 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	12	36
50 - 100	100.0	1		36
100 - 150	25.0	4		119
150 - 200	25.0	4	19	119
200 - 250	16.7	7		160
250 - 300	12.5	7		198
300 - 350	16.7	7	21	160
350 - 400	12.5	7		198
400 - 450	12.5	8		198
450 - 500	12.5	8	15	198
500 - 550	25.0	6		119
550 - 600	12.5	6		198
600 - 650	16.7	6	21	160
650 - 700	16.7	6		160
700 - 750	16.7	7		160
750 - 800	12.5	7	22	198
800 - 850	16.7	6		160
850 - 900	16.7	6		160
900 - 950	16.7	6	15	160
950 - 1000	16.7	6		160
1000 - 1050	25.0	5		119
1050 - 1100	16.7	5	21	160
1100 - 1150	25.0	4		119
1150 - 1200	25.0	4		119
1200 - 1250	25.0	5	21	119
1250 - 1300	16.7	5		160
1300 - 1350	12.5	7		198
1350 - 1400	16.7	7	22	160
1400 - 1450	12.5	9		198
1450 - 1500	10.0	9		233
1500 - 1550	12.5	7	22	198
1550 - 1600	16.7	7		160
1600 - 1650	16.7	7		160
1650 - 1700	12.5	7	22	198
1700 - 1750	12.5	8		198
1750 - 1800	12.5	8		198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 242 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400 *	Grey / brown SAND with trace of / minor silt. Moist. Tightly packed. Sand, fine to medium; 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 243 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	6		119
50 - 100	12.5			198
100 - 150	8.3	14	44	267
150 - 200	6.3			330
200 - 250	4.2			444
250 - 300	4.2	24		444
300 - 350	5.0			388
350 - 400	4.5	21		416
400 - 450	8.3		47	267
450 - 500	8.3	12		267
500 - 550	7.1			299
550 - 600	7.1	14		299
600 - 650	10.0			233
650 - 700	10.0	10		233
700 - 750	7.1		33	299
750 - 800	10.0	12		233
800 - 850	8.3			267
850 - 900	10.0	11		233
900 - 950	12.5			198
950 - 1000	12.5	8		198
1000 - 1050	16.7		21	160
1050 - 1100	16.7	6		160
1100 - 1150	12.5			198
1150 - 1200	16.7	7		160
1200 - 1250	25.0			119
1250 - 1300	10.0	7		233
1300 - 1350	7.1		28	299
1350 - 1400	7.1	14		299
1400 - 1450	12.5			198
1450 - 1500	16.7	7		160
1500 - 1550	10.0			233
1550 - 1600	7.1	12		299
1600 - 1650	8.3		35	267
1650 - 1700	7.1	13		299
1700 - 1750	10.0			233
1750 - 1800	10.0	10		233

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 243 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1450 *	Grey / brown SAND with trace of / minor silt. Moist. Tightly packed. Sand, fine to medium; 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

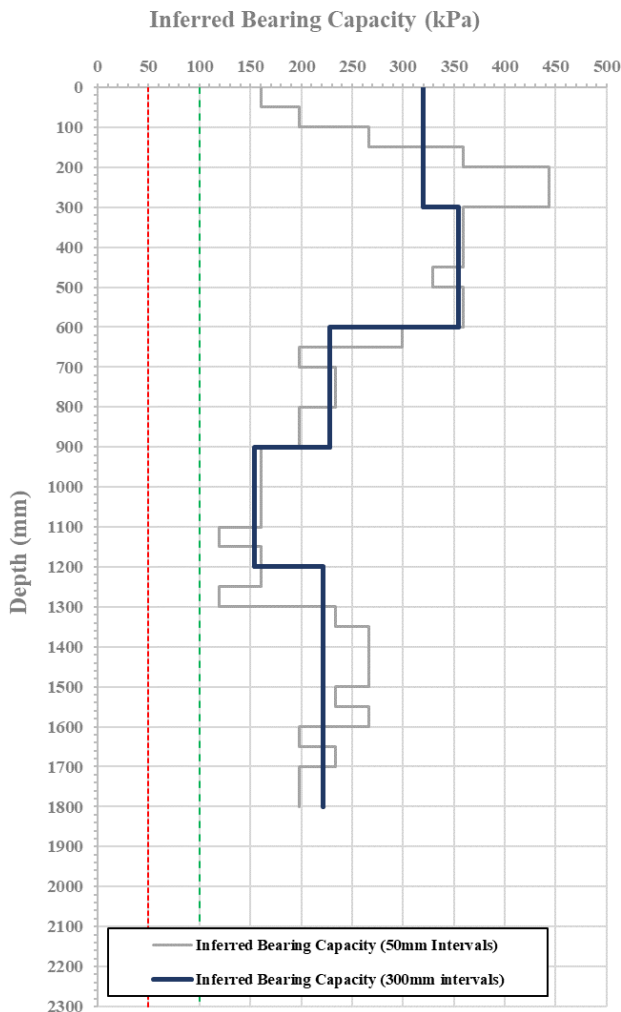
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 244 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	7	46	160
50 - 100	12.5	7		198
100 - 150	8.3	15		267
150 - 200	5.6	24	53	359
200 - 250	4.2			444
250 - 300	4.2	18	29	444
300 - 350	5.6			359
350 - 400	5.6			359
400 - 450	5.6	17	17	359
450 - 500	6.3			330
500 - 550	5.6	18	28	359
550 - 600	5.6			359
600 - 650	7.1	11	28	299
650 - 700	12.5			198
700 - 750	10.0	10	28	233
750 - 800	10.0			233
800 - 850	12.5	8	28	198
850 - 900	12.5			198
900 - 950	16.7	6	17	160
950 - 1000	16.7			160
1000 - 1050	16.7	6	17	160
1050 - 1100	16.7			160
1100 - 1150	25.0	5	28	119
1150 - 1200	16.7			160
1200 - 1250	16.7	5	28	160
1250 - 1300	25.0			119
1300 - 1350	10.0	11	28	233
1350 - 1400	8.3			267
1400 - 1450	8.3	12	28	267
1450 - 1500	8.3			267
1500 - 1550	10.0	11	28	233
1550 - 1600	8.3			267
1600 - 1650	12.5	9	28	198
1650 - 1700	10.0			233
1700 - 1750	12.5	8	28	198
1750 - 1800	12.5			198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 244 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1300 *	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 245 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	9		160
50 - 100	8.3			267
100 - 150	7.1	22	49	299
150 - 200	3.3			523
200 - 250	5.0	18		388
250 - 300	6.3			330
300 - 350	8.3	13		267
350 - 400	7.1			299
400 - 450	10.0	11	31	233
450 - 500	8.3			267
500 - 550	12.5	7		198
550 - 600	16.7			160
600 - 650	7.1	13		299
650 - 700	8.3			267
700 - 750	10.0	9	31	233
750 - 800	12.5			198
800 - 850	10.0	9		233
850 - 900	12.5			198
900 - 950	8.3	9		267
950 - 1000	16.7			160
1000 - 1050	25.0	5	20	119
1050 - 1100	16.7			160
1100 - 1150	16.7	6		160
1150 - 1200	16.7			160
1200 - 1250	12.5	7		198
1250 - 1300	16.7			160
1300 - 1350	16.7	7	22	160
1350 - 1400	12.5			198
1400 - 1450	10.0	8		233
1450 - 1500	16.7			160
1500 - 1550	10.0	10		233
1550 - 1600	10.0			233
1600 - 1650	10.0	8	25	233
1650 - 1700	16.7			160
1700 - 1750	12.5	7		198
1750 - 1800	16.7			160

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 245 - See Page 127 for location plan	
Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 1450 *	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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:



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



Central Testing Services

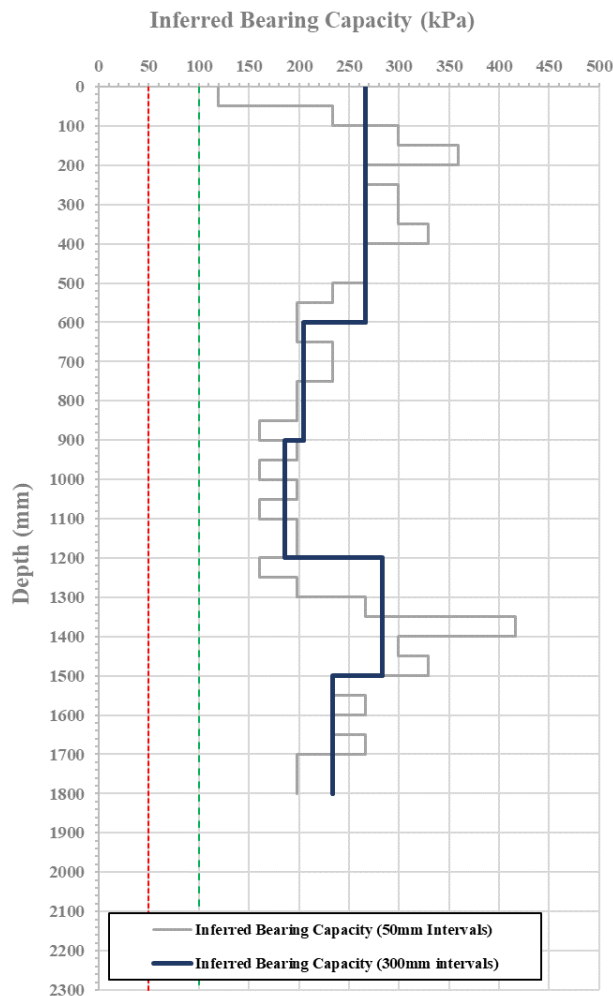
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 246 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	7	36	119
50 - 100	10.0	7		233
100 - 150	7.1	16		299
150 - 200	5.6	13	36	359
200 - 250	8.3			267
250 - 300	7.1	15	36	299
300 - 350	7.1			299
350 - 400	6.3			330
400 - 450	8.3	12	36	267
450 - 500	8.3			267
500 - 550	10.0	9	36	233
550 - 600	12.5			198
600 - 650	12.5	9	25	198
650 - 700	10.0			233
700 - 750	10.0			233
750 - 800	12.5	7	36	198
800 - 850	12.5			198
850 - 900	16.7	7	22	160
900 - 950	12.5			198
950 - 1000	16.7	7	39	160
1000 - 1050	12.5			198
1050 - 1100	16.7	8	30	160
1100 - 1150	12.5			198
1150 - 1200	12.5	7	39	198
1200 - 1250	16.7			160
1250 - 1300	12.5	17	30	198
1300 - 1350	8.3			267
1350 - 1400	4.5	15	30	416
1400 - 1450	7.1			299
1450 - 1500	6.3	11	30	330
1500 - 1550	10.0			233
1550 - 1600	8.3	11	30	267
1600 - 1650	10.0			233
1650 - 1700	8.3	8	30	267
1700 - 1750	12.5			198
1750 - 1800	12.5	8	30	198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 246 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1450 *	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



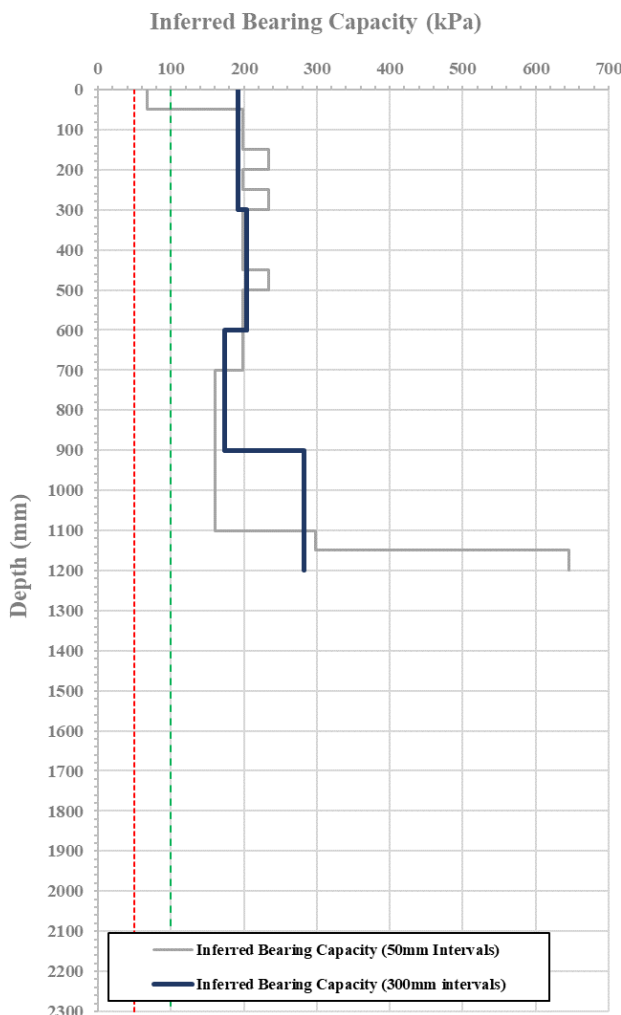
Test results indicated as not accredited are outside the scope of the laboratory's accreditation



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 247 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	5	23	68
50 - 100	12.5	5		198
100 - 150	12.5	9		198
150 - 200	10.0	9		233
200 - 250	12.5	9		198
250 - 300	10.0	9	233	
300 - 350	12.5	8	25	198
350 - 400	12.5	8		198
400 - 450	12.5	9		198
450 - 500	10.0	9		233
500 - 550	12.5	8		198
550 - 600	12.5	8	20	198
600 - 650	12.5	8		198
650 - 700	12.5	6		160
700 - 750	16.7	6		160
750 - 800	16.7	6		160
800 - 850	16.7	6	39	160
850 - 900	16.7	6		160
900 - 950	16.7	6		160
950 - 1000	16.7	6		160
1000 - 1050	16.7	6		160
1050 - 1100	16.7	6	27	160
1100 - 1150	7.1	6		299
1150 - 1200	2.5	6		645
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 247 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1400 *	Grey / brown Gravelly SAND with trace of silt and trace of cobbles. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 106.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



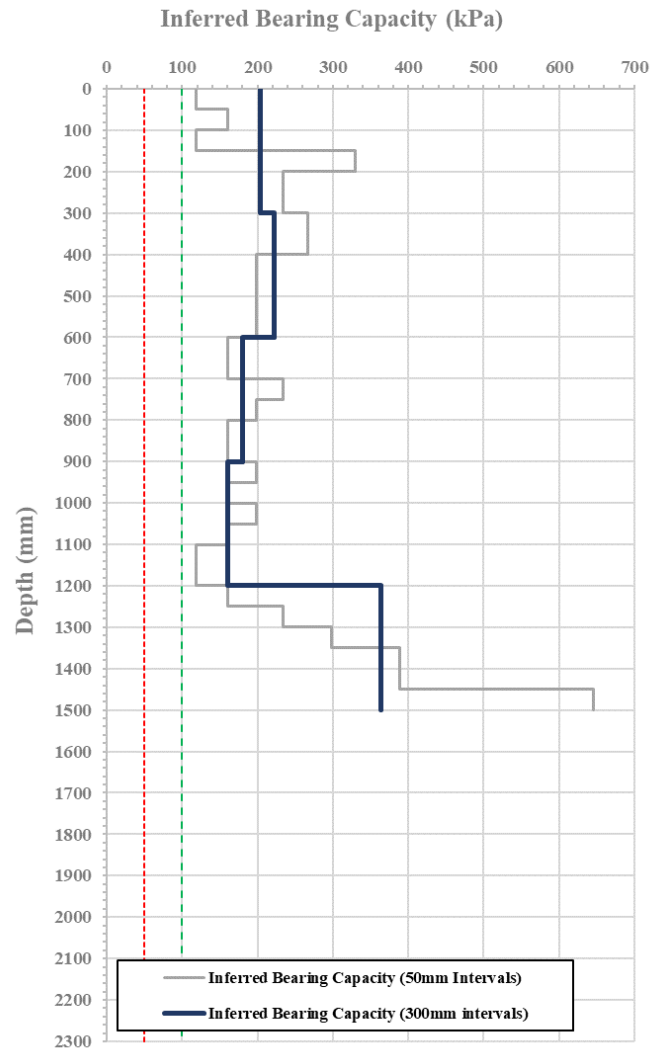
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 248 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	25	119
50 - 100	16.7	5		160
100 - 150	25.0	10		119
150 - 200	6.3	10	25	330
200 - 250	10.0			233
250 - 300	10.0	12	28	233
300 - 350	8.3			267
350 - 400	8.3			267
400 - 450	12.5	8	28	198
450 - 500	12.5			198
500 - 550	12.5	8	28	198
550 - 600	12.5			198
600 - 650	16.7	6	21	160
650 - 700	16.7			160
700 - 750	10.0	9	21	233
750 - 800	12.5			198
800 - 850	16.7	6	21	160
850 - 900	16.7			160
900 - 950	12.5	7	18	198
950 - 1000	16.7			160
1000 - 1050	12.5	7	18	198
1050 - 1100	16.7			160
1100 - 1150	25.0	4	18	119
1150 - 1200	25.0			119
1200 - 1250	16.7	8	55	160
1250 - 1300	10.0			233
1300 - 1350	7.1	17	55	299
1350 - 1400	5.0			388
1400 - 1450	5.0	30	55	388
1450 - 1500	2.5			645
Refusal				
¹ 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.				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 248 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 400	Brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 19.0mm; Sand, fine to coarse; Silt, non-plastic.
400 to 1400 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, fine to medium; 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



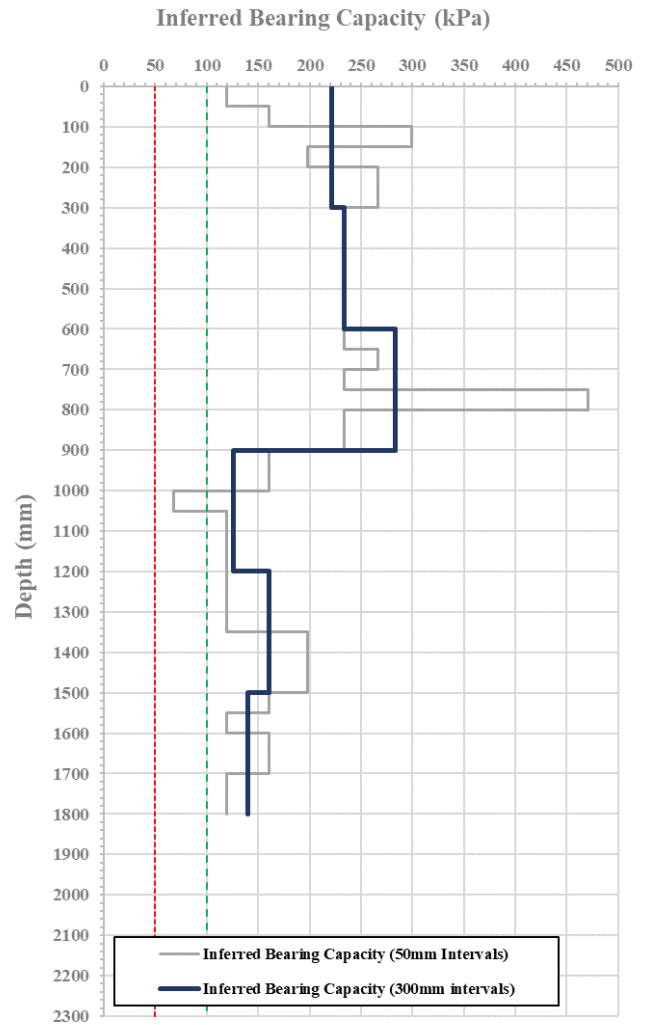
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 249 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	28	119
50 - 100	16.7	5		160
100 - 150	7.1	11		299
150 - 200	12.5	11		198
200 - 250	8.3	12		267
250 - 300	8.3	12	267	
300 - 350	10.0	10	30	233
350 - 400	10.0	10		233
400 - 450	10.0	10		233
450 - 500	10.0	10		233
500 - 550	10.0	10		233
550 - 600	10.0	10	39	233
600 - 650	10.0	11		267
650 - 700	8.3	11		233
700 - 750	10.0	18		471
750 - 800	3.8	18		233
800 - 850	10.0	10	13	233
850 - 900	10.0	10		233
900 - 950	16.7	6		160
950 - 1000	16.7	6		160
1000 - 1050	50.0	3		68
1050 - 1100	25.0	3	18	119
1100 - 1150	25.0	4		119
1150 - 1200	25.0	4		119
1200 - 1250	25.0	4		119
1250 - 1300	25.0	4		119
1300 - 1350	25.0	6	15	119
1350 - 1400	12.5	6		198
1400 - 1450	12.5	8		198
1450 - 1500	12.5	8		198
1500 - 1550	16.7	5		160
1550 - 1600	25.0	5	4	119
1600 - 1650	16.7	6		160
1650 - 1700	16.7	6		160
1700 - 1750	25.0	4		119
1750 - 1800	25.0	4		119



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 249 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1450 *	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.

* 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 250 – See Page 127 for location plan					
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)	
		100 mm	300 mm		
0 - 50	25.0	7	36	119	
50 - 100	10.0			233	
100 - 150	7.1			299	
150 - 200	8.3	13		49	267
200 - 250	6.3				330
250 - 300	6.3	16		330	
300 - 350	6.3	14	49	330	
350 - 400	8.3			267	
400 - 450	6.3	15		49	330
450 - 500	7.1		299		
500 - 550	6.3	20	49	330	
550 - 600	4.2			444	
600 - 650	2.5			645	
Refusal					

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 250 – See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1550	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.

* 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 251 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	7.1	15		299
50 - 100	6.3			330
100 - 150	8.3		39	267
150 - 200	8.3	12		267
200 - 250	8.3			267
250 - 300	8.3	12		267
300 - 350	7.1			299
350 - 400	8.3	13		267
400 - 450	12.5		37	198
450 - 500	8.3	10		267
500 - 550	8.3			267
550 - 600	6.3	14		330
600 - 650	7.1			299
650 - 700	7.1	14		299
700 - 750	3.8		53	471
750 - 800	3.8	26		471
800 - 850	8.3			267
850 - 900	7.1	13		299
900 - 950	7.1			299
950 - 1000	8.3	13		267
1000 - 1050	12.5		29	198
1050 - 1100	16.7	7		160
1100 - 1150	10.0			233
1150 - 1200	12.5	9		198
1200 - 1250	12.5			198
1250 - 1300	12.5	8		198
1300 - 1350	7.1		37	299
1350 - 1400	7.1	14		299
1400 - 1450	7.1			299
1450 - 1500	6.3	15		330
1500 - 1550	7.1			299
1550 - 1600	7.1	14		299
1600 - 1650	8.3		43	267
1650 - 1700	6.3	14		330
1700 - 1750	6.3			330
1750 - 1800	7.1	15		299

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 251 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1500 *	Brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 26.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

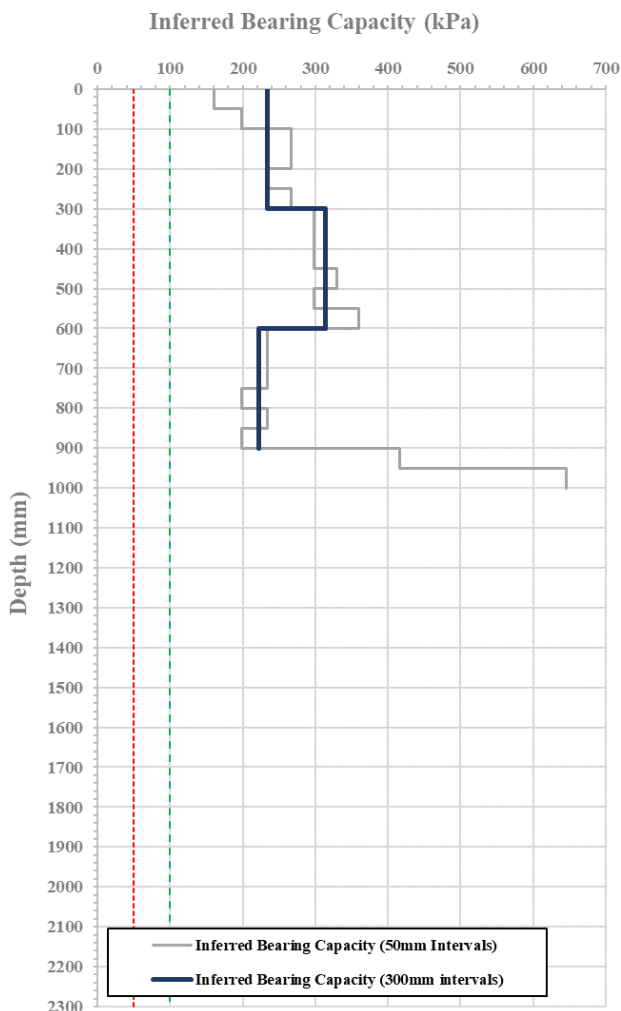
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 252 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	7	30	160
50 - 100	12.5	12		198
100 - 150	8.3			267
150 - 200	8.3	267		
200 - 250	10.0	11		233
250 - 300	8.3		267	
300 - 350	7.1	14	299	
350 - 400	7.1		299	
400 - 450	7.1		15	299
450 - 500	6.3	330		
500 - 550	7.1	16	299	
550 - 600	5.6		359	
600 - 650	10.0	10	233	
650 - 700	10.0		233	
700 - 750	10.0	9	233	
750 - 800	12.5		198	
800 - 850	10.0	9	233	
850 - 900	12.5		198	
900 - 950	4.5	31	416	
950 - 1000	2.5		-	645
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 252 – See Page 127 for location plan	
Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 250	Brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 19.0mm; Sand, fine to coarse; Silt, non-plastic.
250 to 350	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, fine to coarse; Silt, non-plastic.
350 to 1550	Brown Sandy GRAVEL with trace of silt and trace of cobbles. Moist. Loose. Gravel / cobbles, subrounded to rounded, maximum particle size 75.0mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 253 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	7	29	160
50 - 100	12.5	7		198
100 - 150	8.3	12		267
150 - 200	8.3	10		267
200 - 250	10.0	10		233
250 - 300	10.0	10	233	
300 - 350	8.3	10	23	267
350 - 400	12.5	8		198
400 - 450	12.5	8		198
450 - 500	12.5	5		160
500 - 550	16.7	5		119
550 - 600	25.0	8	27	198
600 - 650	12.5	8		198
650 - 700	12.5	8		198
700 - 750	12.5	8		198
750 - 800	12.5	11		198
800 - 850	12.5	11	24	299
850 - 900	7.1	11		160
900 - 950	16.7	11		330
950 - 1000	6.3	5		119
1000 - 1050	25.0	5		160
1050 - 1100	16.7	8	29	198
1100 - 1150	12.5	8		198
1150 - 1200	12.5	9		233
1200 - 1250	10.0	9		198
1250 - 1300	12.5	11		233
1300 - 1350	10.0	11	45	267
1350 - 1400	8.3	9		198
1400 - 1450	12.5	9		233
1450 - 1500	10.0	14		299
1500 - 1550	7.1	14		299
1550 - 1600	7.1	14	17	299
1600 - 1650	7.1	17		330
1650 - 1700	7.1	17		330
1700 - 1750	6.3	17		359
1750 - 1800	5.6	17		

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 253 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 400	Brown Gravelly SAND with trace of cobbles and trace of silt. Moist. Tightly packed. Gravel / cobbles, subrounded to rounded, maximum particle size 75.0mm; Sand, fine to coarse; Silt, non-plastic.
400 to 700	Light grey SAND with trace of / minor silt. Moist. Loose. Sand, fine to coarse; Silt, non-plastic.
700 to 1550 *	Brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



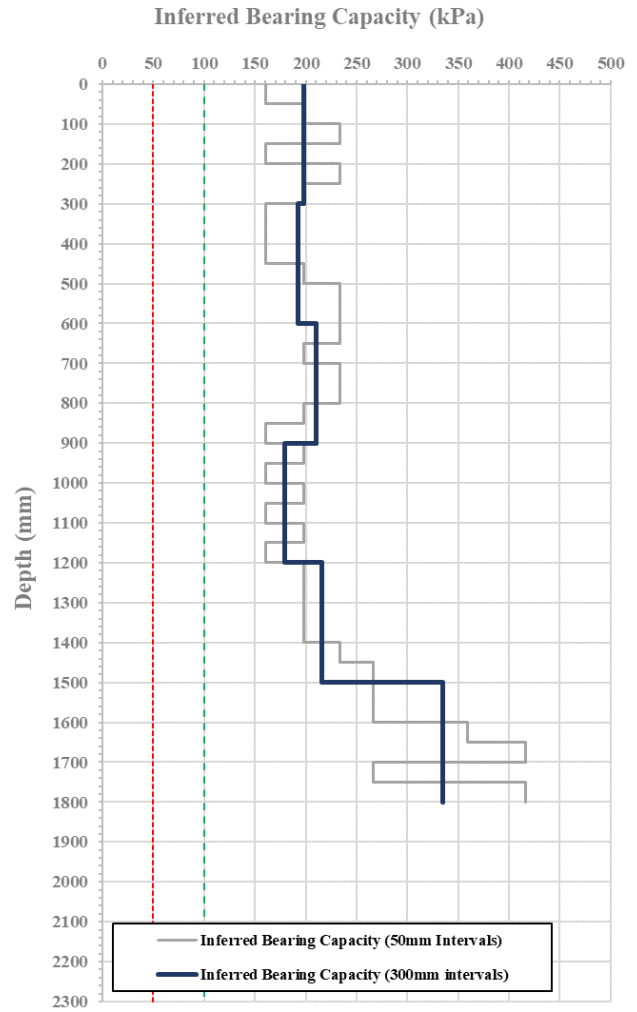
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 254 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	7	24	160
50 - 100	12.5	8		198
100 - 150	10.0			233
150 - 200	16.7	8		160
200 - 250	10.0	9	233	
250 - 300	12.5		198	
300 - 350	16.7	6	160	
350 - 400	16.7		160	
400 - 450	16.7	7	160	
450 - 500	12.5		23	198
500 - 550	10.0	10	233	
550 - 600	10.0		233	
600 - 650	10.0	9	233	
650 - 700	12.5		198	
700 - 750	10.0	10	233	
750 - 800	10.0		26	233
800 - 850	12.5	7	198	
850 - 900	16.7		160	
900 - 950	12.5	7	198	
950 - 1000	16.7		160	
1000 - 1050	12.5	7	198	
1050 - 1100	16.7		21	160
1100 - 1150	12.5	7	198	
1150 - 1200	16.7		160	
1200 - 1250	12.5	8	198	
1250 - 1300	12.5		198	
1300 - 1350	12.5	8	198	
1350 - 1400	12.5		27	198
1400 - 1450	10.0	11	233	
1450 - 1500	8.3		267	
1500 - 1550	8.3	12	267	
1550 - 1600	8.3		267	
1600 - 1650	5.6	20	359	
1650 - 1700	4.5		49	416
1700 - 1750	8.3	17	267	
1750 - 1800	4.5		416	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 254 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 390	Brown Sandy GRAVEL with trace of silt. Moist. Loose. Gravel, subrounded to rounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
390 to 500	Light grey SAND with trace of / minor silt. Moist. Loose. Sand, fine to coarse; Silt, non-plastic.
500 to 1550 *	Brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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."



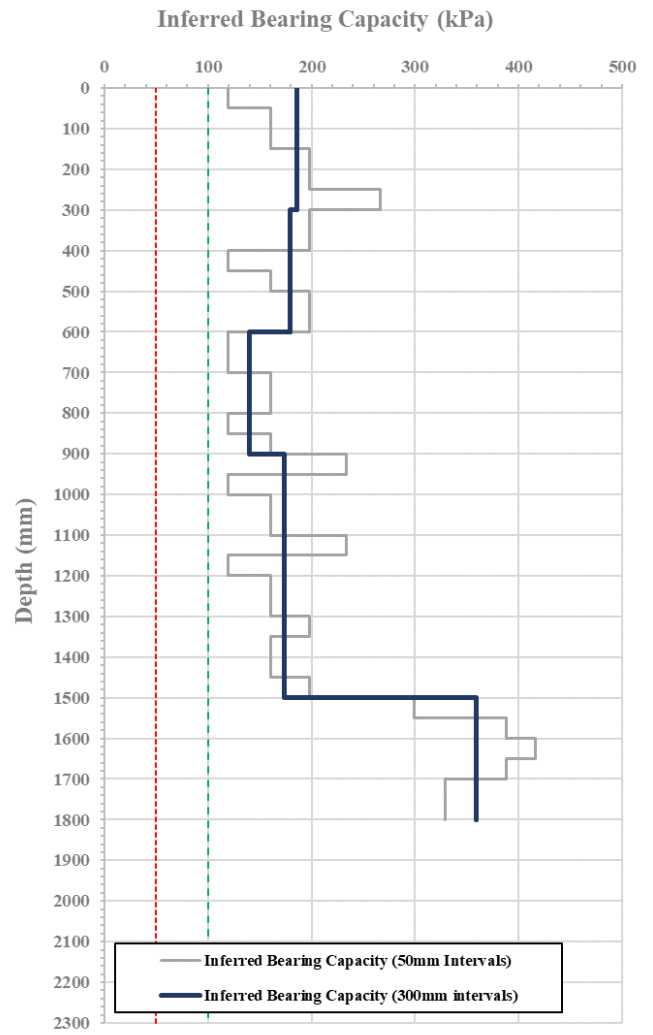
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 255 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	22	119
50 - 100	16.7	7		160
100 - 150	16.7			160
150 - 200	12.5	10		198
200 - 250	12.5		198	
250 - 300	8.3	8	267	
300 - 350	12.5		21	198
350 - 400	12.5			198
400 - 450	25.0		5	119
450 - 500	16.7	160		
500 - 550	12.5	8	198	
550 - 600	12.5		198	
600 - 650	25.0	4	119	
650 - 700	25.0		119	
700 - 750	16.7	6	160	
750 - 800	16.7		160	
800 - 850	25.0	5	119	
850 - 900	16.7		160	
900 - 950	10.0	7	233	
950 - 1000	25.0		119	
1000 - 1050	16.7	6	160	
1050 - 1100	16.7		160	
1100 - 1150	10.0	7	233	
1150 - 1200	25.0		119	
1200 - 1250	16.7	6	160	
1250 - 1300	16.7		160	
1300 - 1350	12.5	7	198	
1350 - 1400	16.7		160	
1400 - 1450	16.7	7	160	
1450 - 1500	12.5		198	
1500 - 1550	7.1	17	299	
1550 - 1600	5.0		388	
1600 - 1650	4.5	21	416	
1650 - 1700	5.0		388	
1700 - 1750	6.3	16	330	
1750 - 1800	6.3		330	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 255 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1500	Greyish brown Gravelly SAND with trace of / minor silt. Moist. Loose. Gravel, subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic. Roots present in top of layer.
1500 to 1550 *	Light grey Sandy GRAVEL with trace of silt. Moist. Loose. Gravel, subrounded to rounded, maximum particle size 26.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

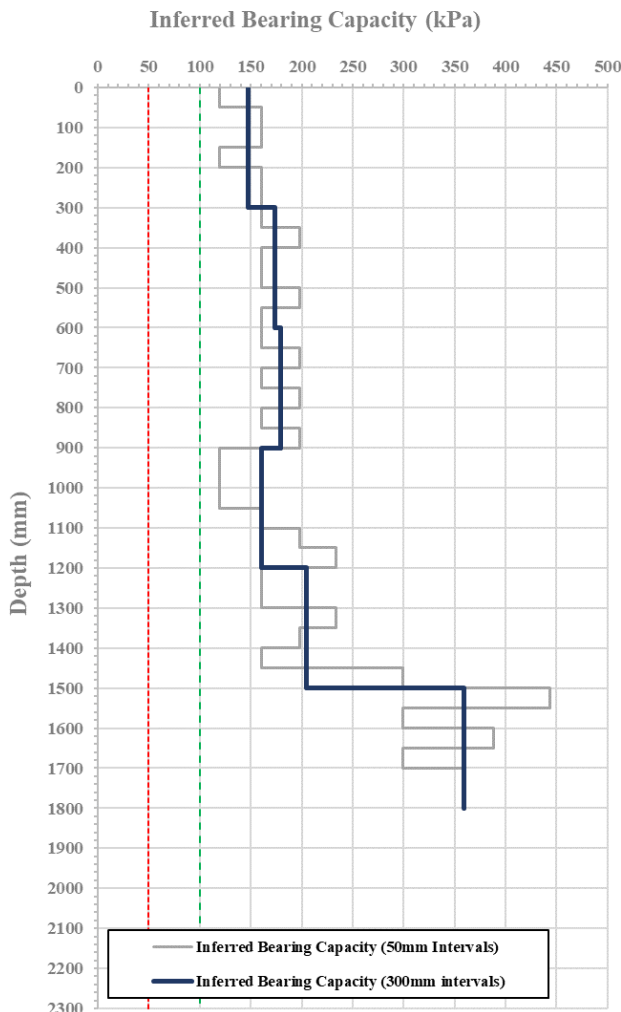
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 256 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	16	119
50 - 100	16.7	5		160
100 - 150	16.7	5		160
150 - 200	25.0	5	20	119
200 - 250	16.7	6		160
250 - 300	16.7	6		160
300 - 350	16.7	7	21	160
350 - 400	12.5	7		198
400 - 450	16.7	6		160
450 - 500	16.7	6	25	160
500 - 550	12.5	7		198
550 - 600	16.7	7		160
600 - 650	16.7	7	54	160
650 - 700	12.5	7		198
700 - 750	16.7	7		160
750 - 800	12.5	7	18	198
800 - 850	16.7	7		160
850 - 900	12.5	7		198
900 - 950	25.0	4	25	119
950 - 1000	25.0	4		119
1000 - 1050	25.0	5		119
1050 - 1100	16.7	5	19	160
1100 - 1150	12.5	9		198
1150 - 1200	10.0	9		233
1200 - 1250	16.7	6	17	160
1250 - 1300	16.7	6		160
1300 - 1350	10.0	9		233
1350 - 1400	12.5	9	18	198
1400 - 1450	16.7	10		160
1450 - 1500	7.1	10		299
1500 - 1550	4.2	19	54	444
1550 - 1600	7.1	19		299
1600 - 1650	5.0	17		388
1650 - 1700	7.1	17	18	299
1700 - 1750	5.6	18		359
1750 - 1800	5.6	18		359



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 256 - See Page 127 for location plan

Depth (mm)	Description
0 to 300	Topsoil & vegetation (organic matter).
300 to 400	Light brown Sandy GRAVEL with some silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 26.5mm; Sand, fine to coarse; Silt, non-plastic.
400 to 1400	Light grey Sandy GRAVEL with trace of silt and trace of cobbles. Moist. Loose. Gravel / cobbles, subrounded to rounded, maximum particle size 106.0mm; Sand, fine to coarse; Silt, non-plastic.
1400 to 1650 *	Greyish brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 26.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

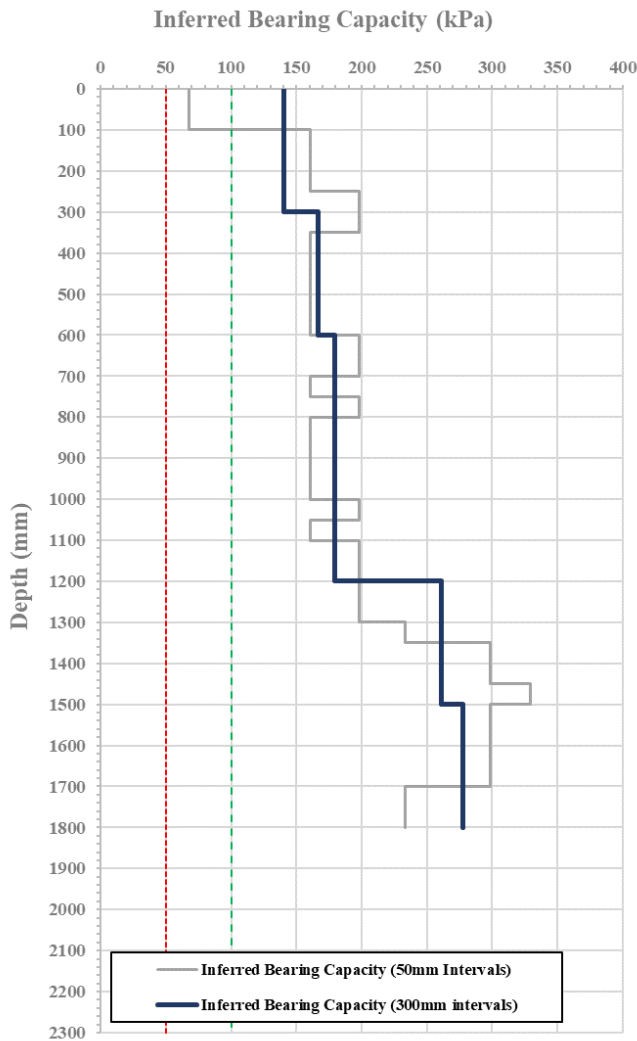
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 257 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	15	68
50 - 100	50.0	2		68
100 - 150	16.7	6		160
150 - 200	16.7	6	19	160
200 - 250	16.7	7		160
250 - 300	12.5	7		198
300 - 350	12.5	7	21	198
350 - 400	16.7	7		160
400 - 450	16.7	6		160
450 - 500	16.7	6	21	160
500 - 550	16.7	6		160
550 - 600	16.7	6		160
600 - 650	12.5	8	35	198
650 - 700	12.5	8		198
700 - 750	16.7	7		160
750 - 800	12.5	7	38	198
800 - 850	16.7	6		160
850 - 900	16.7	6		160
900 - 950	16.7	6	14	160
950 - 1000	16.7	6		160
1000 - 1050	12.5	7		198
1050 - 1100	16.7	7	14	160
1100 - 1150	12.5	8		198
1150 - 1200	12.5	8		198
1200 - 1250	12.5	8	10	198
1250 - 1300	12.5	8		198
1300 - 1350	10.0	12		233
1350 - 1400	7.1	15	14	299
1400 - 1450	7.1	15		299
1450 - 1500	6.3	14		330
1500 - 1550	7.1	14	14	299
1550 - 1600	7.1	14		299
1600 - 1650	7.1	14		299
1650 - 1700	7.1	14	10	299
1700 - 1750	10.0	10		233
1750 - 1800	10.0	10		233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 257 - See Page 127 for location plan

Depth (mm)	Description
0 to 300	Topsoil & vegetation (organic matter).
300 to 1450	Dark brown Sandy GRAVEL with minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1450 to 1550 *	Light grey Sandy GRAVEL with trace of / minor silt. Dry. Loose / Soft. Gravel, subrounded to rounded, maximum particle size 63.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 258 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	23	119
50 - 100	16.7	5		160
100 - 150	8.3	10		267
150 - 200	12.5	8	21	198
200 - 250	12.5			198
250 - 300	12.5			198
300 - 350	16.7	6	31	160
350 - 400	16.7	6		160
400 - 450	12.5	8		198
450 - 500	12.5	7	30	198
500 - 550	12.5			160
550 - 600	16.7			160
600 - 650	16.7	11	≅ 54	160
650 - 700	16.7			160
700 - 750	8.3			267
750 - 800	10.0	14	30	233
800 - 850	7.1			299
850 - 900	7.1			299
900 - 950	12.5	9	30	198
950 - 1000	10.0			233
1000 - 1050	10.0			233
1050 - 1100	10.0	11	30	233
1100 - 1150	7.1			299
1150 - 1200	12.5			198
1200 - 1250	12.5	9	30	198
1250 - 1300	10.0			233
1300 - 1350	7.1			299
1350 - 1400	5.6	16	30	359
1400 - 1450	2.5			-

Refusal

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 258 – See Page 127 for location plan	
Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1400	Dark brown Sandy GRAVEL with minor silt and trace of cobbles. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 75.0mm; Sand, fine to coarse; Silt, non-plastic.
1400 to 1500	Light grey Sandy GRAVEL with trace of silt. Dry. Loose / Soft. Gravel, subrounded to rounded, maximum particle size 63.0mm; Sand, 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.

Note:

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



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 265 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	10.0	15		233
50 - 100	5.0			388
100 - 150	4.5		42	416
150 - 200	8.3	17		267
200 - 250	10.0			233
250 - 300	10.0	10		233
300 - 350	10.0			233
350 - 400	5.0	15		388
400 - 450	4.5		54	416
450 - 500	7.1	18		299
500 - 550	4.5			416
550 - 600	5.0	21		388
600 - 650	5.0		45	388
650 - 700	5.0	20		388
700 - 750	7.1			299
750 - 800	7.1	14		299
800 - 850	7.1			299
850 - 900	12.5	11		198
900 - 950	10.0		39	233
950 - 1000	7.1	12		299
1000 - 1050	7.1			299
1050 - 1100	10.0	12		233
1100 - 1150	6.3		53	330
1150 - 1200	7.1	15		299
1200 - 1250	6.3			330
1250 - 1300	4.5	19		416
1300 - 1350	4.5			416
1350 - 1400	4.5	22		416
1400 - 1450	10.0			233
1450 - 1500	7.1	12		299
1500 - 1550	8.3		33	267
1550 - 1600	8.3	12		267
1600 - 1650	10.0			233
1650 - 1700	8.3	11		267
1700 - 1750	12.5			198
1750 - 1800	8.3	10		267

¹ 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.

The graph plots Inferred Bearing Capacity (kPa) on the x-axis (0 to 500) against Depth (mm) on the y-axis (0 to 2300). Two data series are shown: 'Inferred Bearing Capacity (50mm Intervals)' represented by a grey stepped line and 'Inferred Bearing Capacity (300mm Intervals)' represented by a blue stepped line. The 300mm intervals generally show higher capacity values than the 50mm intervals. Vertical dashed lines are present at approximately 50mm (red) and 100mm (green) depths.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 265 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 600	Dark brown Sandy GRAVEL with minor / some silt and trace of cobbles. Moist. Tightly packed. Gravel / cobbles, subrounded to rounded, maximum particle size 106.0mm; Sand, fine to coarse; Silt, non-plastic.
600 to 1300	Light brown Sandy GRAVEL with trace of / minor silt. Moist. Loose. Gravel, subrounded to rounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1500 *	Light grey Sandy GRAVEL with trace of silt. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 19.0mm; Sand, fine to medium; 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



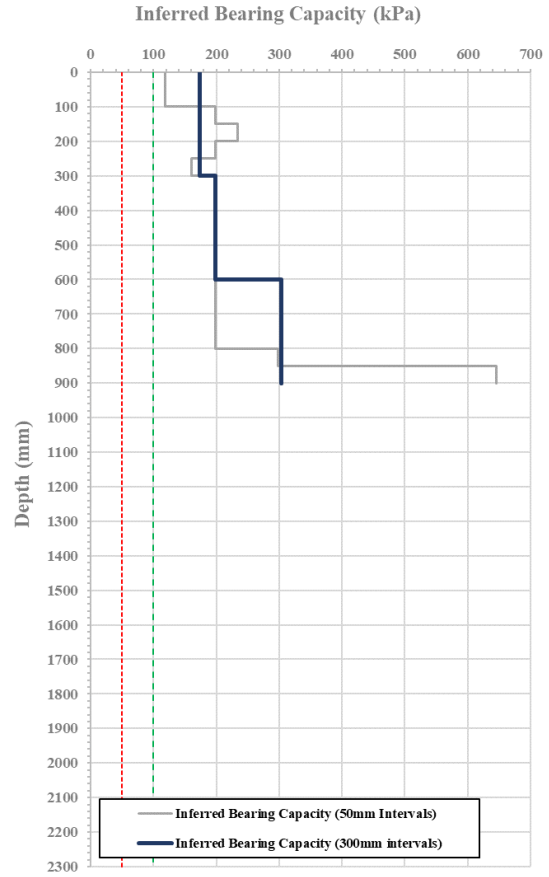
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 266 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	20	119
50 - 100	25.0	4		119
100 - 150	12.5	9		198
150 - 200	10.0	9		233
200 - 250	12.5	7	24	198
250 - 300	16.7			160
300 - 350	12.5	8	43	198
350 - 400	12.5			198
400 - 450	12.5			198
450 - 500	12.5			198
500 - 550	12.5	8	27	198
550 - 600	12.5			198
600 - 650	12.5	8	27	198
650 - 700	12.5			198
700 - 750	12.5			198
750 - 800	12.5			198
800 - 850	7.1	27	27	299
850 - 900	2.5			645
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 266 – See Page 127 for location plan	
Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 1300	Dark brown Sandy GRAVEL with minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1500	Light grey Sandy GRAVEL with trace of silt. Dry. Loose. Gravel, subrounded to rounded, maximum particle size 63.0mm; Sand, 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.

Note:

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



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 267 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	12.5	8	28	198
50 - 100	12.5	8		198
100 - 150	8.3	10		267
150 - 200	12.5	10		198
200 - 250	12.5	10	24	198
250 - 300	8.3	10		267
300 - 350	8.3	10		267
350 - 400	12.5	10		198
400 - 450	12.5	8	21	198
450 - 500	12.5	8		198
500 - 550	16.7	6		160
550 - 600	16.7	6		160
600 - 650	16.7	6	22	160
650 - 700	16.7	6		160
700 - 750	16.7	7		160
750 - 800	12.5	7		198
800 - 850	16.7	8	36	160
850 - 900	10.0	8		233
900 - 950	12.5	7		198
950 - 1000	16.7	7		160
1000 - 1050	16.7	7	46	160
1050 - 1100	12.5	7		198
1100 - 1150	12.5	8		198
1150 - 1200	12.5	8		198
1200 - 1250	10.0	9	17	233
1250 - 1300	12.5	9		198
1300 - 1350	8.3	12		267
1350 - 1400	8.3	12		267
1400 - 1450	8.3	15	13	267
1450 - 1500	5.6	15		359
1500 - 1550	6.3	17		330
1550 - 1600	5.6	17		359
1600 - 1650	7.1	13	16	299
1650 - 1700	8.3	13		267
1700 - 1750	5.6	16		359
1750 - 1800	7.1	16		299

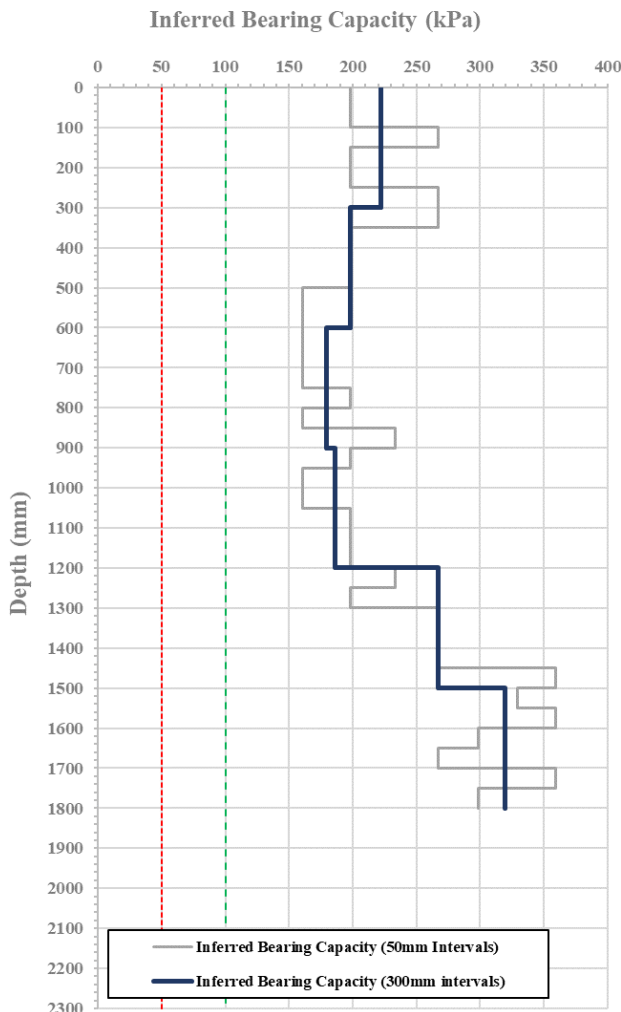
¹ Bearing capacity results stated above have been inferred from Fig 2 – Determination of allowable bearing pressure under small structures, M.J. Stockwell. The results are relative to the ground conditions at the time of test and will be heavily influenced if significant gravel fraction is present. The 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 267 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1400 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

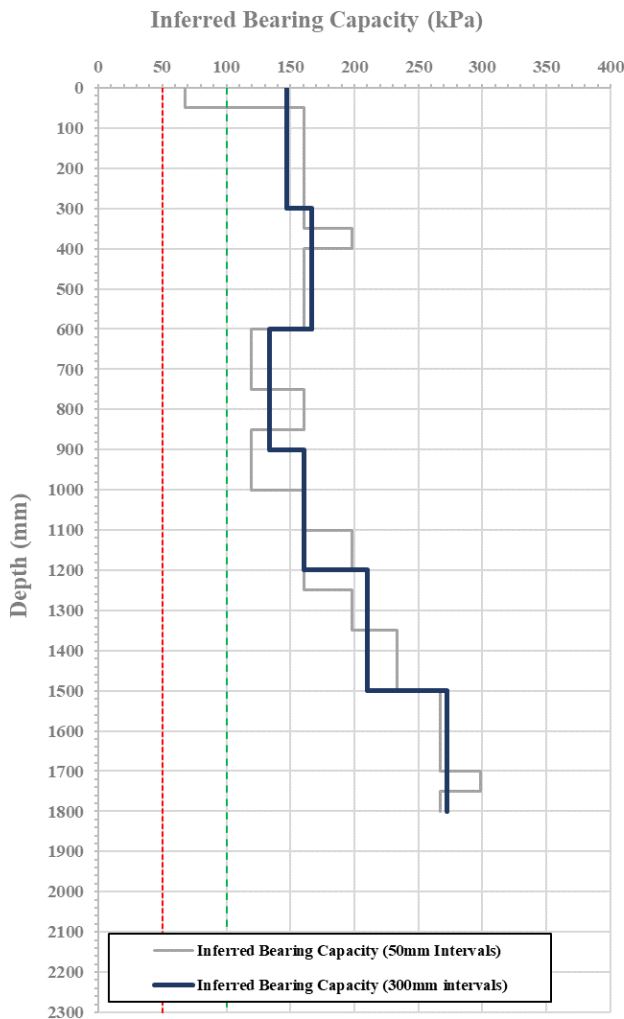
P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 268 – See Page 127 for location plan

Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	4	16	68
50 - 100	16.7	4		160
100 - 150	16.7	6		160
150 - 200	16.7	6		160
200 - 250	16.7	6	19	160
250 - 300	16.7	6		160
300 - 350	16.7	7		160
350 - 400	12.5	7		198
400 - 450	16.7	6	14	160
450 - 500	16.7	6		160
500 - 550	16.7	6		160
550 - 600	16.7	6		160
600 - 650	25.0	4	18	119
650 - 700	25.0	4		119
700 - 750	25.0	5		119
750 - 800	16.7	5		160
800 - 850	16.7	5	26	160
850 - 900	25.0	5		119
900 - 950	25.0	4		119
950 - 1000	25.0	4		119
1000 - 1050	16.7	6	37	160
1050 - 1100	16.7	6		160
1100 - 1150	12.5	8		198
1150 - 1200	12.5	8		198
1200 - 1250	16.7	7	12	160
1250 - 1300	12.5	7		198
1300 - 1350	12.5	9		198
1350 - 1400	10.0	9		233
1400 - 1450	10.0	10	12	233
1450 - 1500	10.0	10		233
1500 - 1550	8.3	12		267
1550 - 1600	8.3	12		267
1600 - 1650	8.3	12	13	267
1650 - 1700	8.3	12		267
1700 - 1750	7.1	13		299
1750 - 1800	8.3	13		267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 268 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1350 *	Grey / brown Gravelly SAND with trace of / minor silt and trace of cobbles. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 106.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

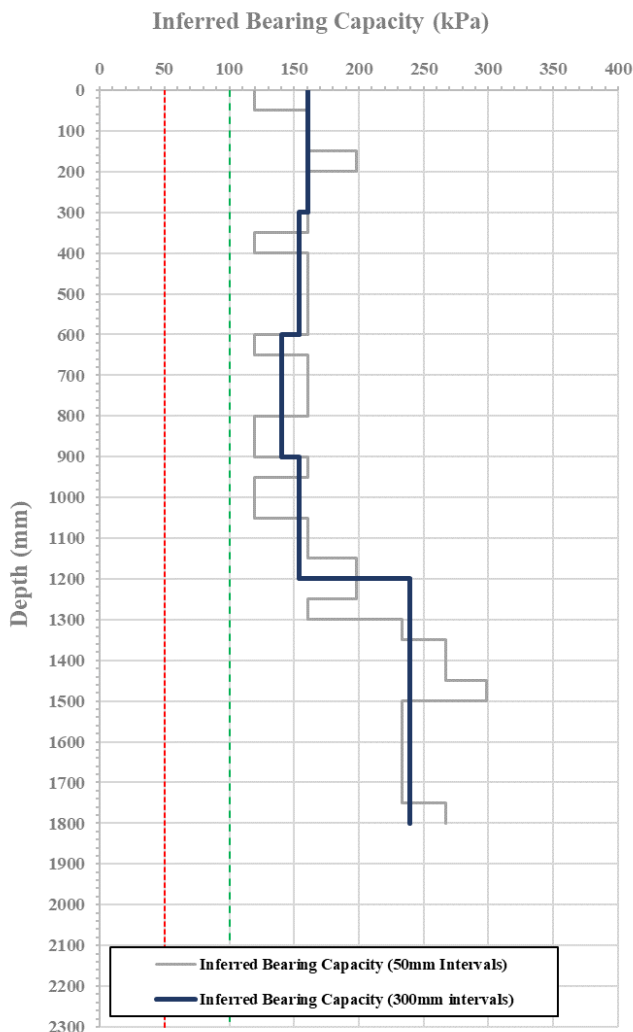
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 269 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	18	119
50 - 100	16.7	5		160
100 - 150	16.7	7		160
150 - 200	12.5	7		198
200 - 250	16.7	6		160
250 - 300	16.7	6	160	
300 - 350	16.7	5	17	160
350 - 400	25.0	5		119
400 - 450	16.7	6		160
450 - 500	16.7	6		160
500 - 550	16.7	6		160
550 - 600	16.7	6	15	160
600 - 650	25.0	5		119
650 - 700	16.7	6		160
700 - 750	16.7	6		160
750 - 800	16.7	6		160
800 - 850	25.0	4	31	119
850 - 900	25.0	4		119
900 - 950	16.7	5		160
950 - 1000	25.0	5		119
1000 - 1050	25.0	5		119
1050 - 1100	16.7	5	17	160
1100 - 1150	16.7	7		160
1150 - 1200	12.5	7		198
1200 - 1250	12.5	7		198
1250 - 1300	16.7	7		160
1300 - 1350	10.0	11	31	233
1350 - 1400	8.3	11		267
1400 - 1450	8.3	13		267
1450 - 1500	7.1	13		299
1500 - 1550	10.0	10		233
1550 - 1600	10.0	10	31	233
1600 - 1650	10.0	10		233
1650 - 1700	10.0	10		233
1700 - 1750	10.0	11		233
1750 - 1800	8.3	11		267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 269 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

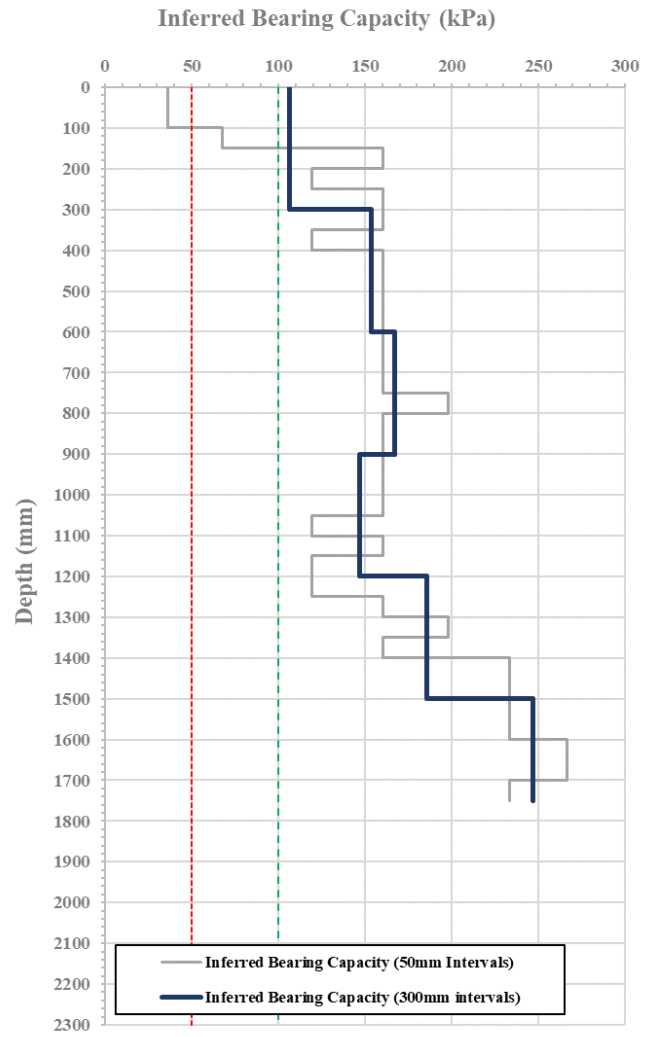


TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 270 – See Page 127 for location plan

Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	10	36
50 - 100	100.0	1		36
100 - 150	50.0	4		68
150 - 200	16.7	5	17	160
200 - 250	25.0			119
250 - 300	16.7	5	17	160
300 - 350	16.7			160
350 - 400	25.0			119
400 - 450	16.7	6	17	160
450 - 500	16.7			160
500 - 550	16.7	6	19	160
550 - 600	16.7			160
600 - 650	16.7	6	19	160
650 - 700	16.7			160
700 - 750	16.7	7	22	160
750 - 800	12.5			198
800 - 850	16.7	6	32	160
850 - 900	16.7			160
900 - 950	16.7	6	32	160
950 - 1000	16.7			160
1000 - 1050	16.7	5	16	160
1050 - 1100	25.0			119
1100 - 1150	16.7	5	22	160
1150 - 1200	25.0			119
1200 - 1250	25.0	5	22	119
1250 - 1300	16.7			160
1300 - 1350	12.5	7	22	198
1350 - 1400	16.7			160
1400 - 1450	10.0	10	32	233
1450 - 1500	10.0			233
1500 - 1550	10.0	10	32	233
1550 - 1600	10.0			233
1600 - 1650	8.3	12	32	267
1650 - 1700	8.3			267
1700 - 1750	10.0	-	-	233



¹ 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.

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 to 1200	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 37.5mm; Sand, fine to coarse; Silt, non-plastic.
1200 to 1400 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

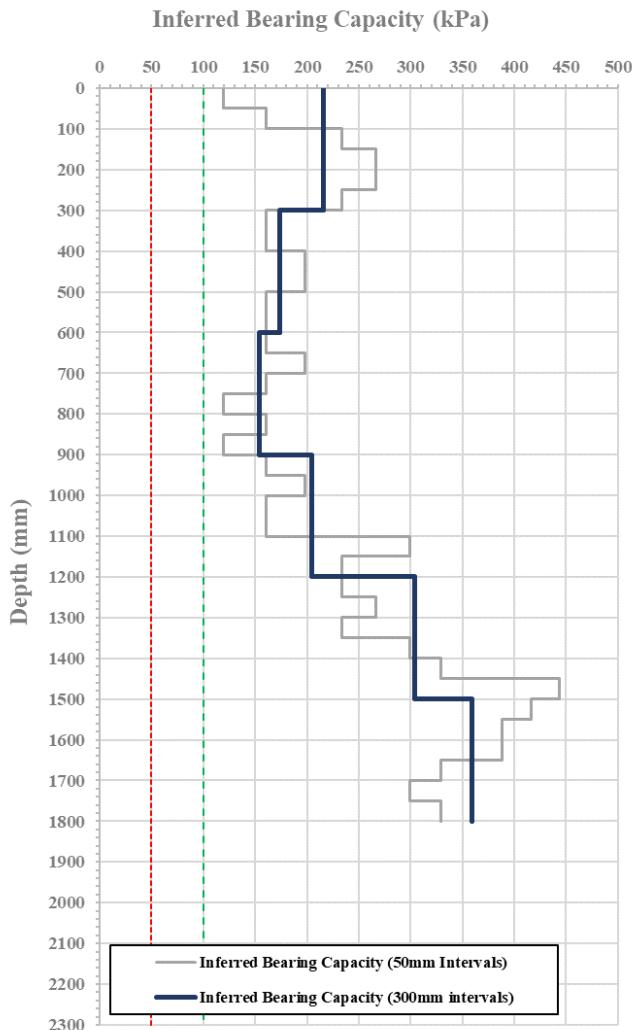
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 271 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	27	119
50 - 100	16.7	5		160
100 - 150	10.0	11		233
150 - 200	8.3	11	20	267
200 - 250	8.3			267
250 - 300	10.0	6	17	233
300 - 350	16.7			160
350 - 400	16.7			160
400 - 450	12.5	8	25	198
450 - 500	12.5			198
500 - 550	16.7	6	43	160
550 - 600	16.7			160
600 - 650	16.7			160
650 - 700	12.5	7	54	198
700 - 750	16.7			160
750 - 800	25.0	5	18	119
800 - 850	16.7			160
850 - 900	25.0	7	15	119
900 - 950	16.7			160
950 - 1000	12.5			198
1000 - 1050	16.7	6	21	160
1050 - 1100	16.7			160
1100 - 1150	7.1	12	54	299
1150 - 1200	10.0			233
1200 - 1250	10.0			233
1250 - 1300	8.3	11	20	267
1300 - 1350	10.0			233
1350 - 1400	7.1	12	18	299
1400 - 1450	6.3			330
1450 - 1500	4.2			444
1500 - 1550	4.5	21	15	416
1550 - 1600	5.0			388
1600 - 1650	5.0	18	15	388
1650 - 1700	6.3			330
1700 - 1750	7.1			299
1750 - 1800	6.3	15	330	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 271 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 37.5mm; Sand, fine to coarse; Silt, non-plastic.
1400 to 1450 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

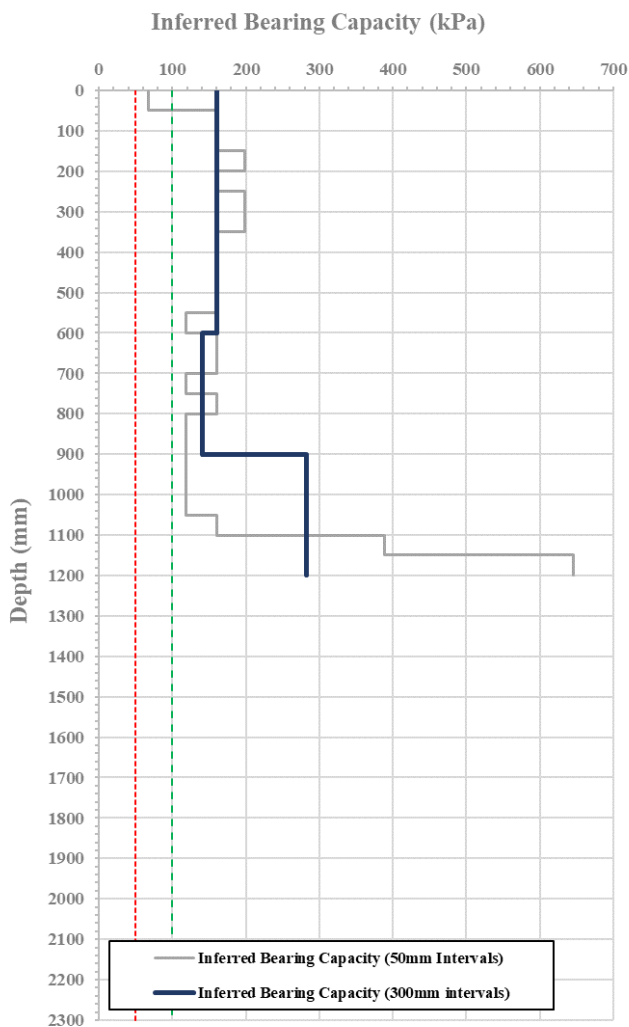
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 272 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	4	18	68
50 - 100	16.7	4		160
100 - 150	16.7	7		160
150 - 200	12.5	7		198
200 - 250	16.7	7	160	
250 - 300	12.5	7	198	
300 - 350	12.5	7	198	
350 - 400	16.7	7	160	
400 - 450	16.7	6	18	160
450 - 500	16.7	6	18	160
500 - 550	16.7	5	18	160
550 - 600	25.0	5	18	119
600 - 650	16.7	6	15	160
650 - 700	16.7	6	15	160
700 - 750	25.0	5	15	119
750 - 800	16.7	5	15	160
800 - 850	25.0	4	15	119
850 - 900	25.0	4	15	119
900 - 950	25.0	4	39	119
950 - 1000	25.0	4	39	119
1000 - 1050	25.0	5	39	119
1050 - 1100	16.7	5	39	160
1100 - 1150	5.0	30	39	388
1150 - 1200	2.5	30	39	645
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 272 - See Page 127 for location plan	
Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1450	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 37.5mm; Sand, fine to coarse; Silt, non-plastic.
1450 to 1550	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

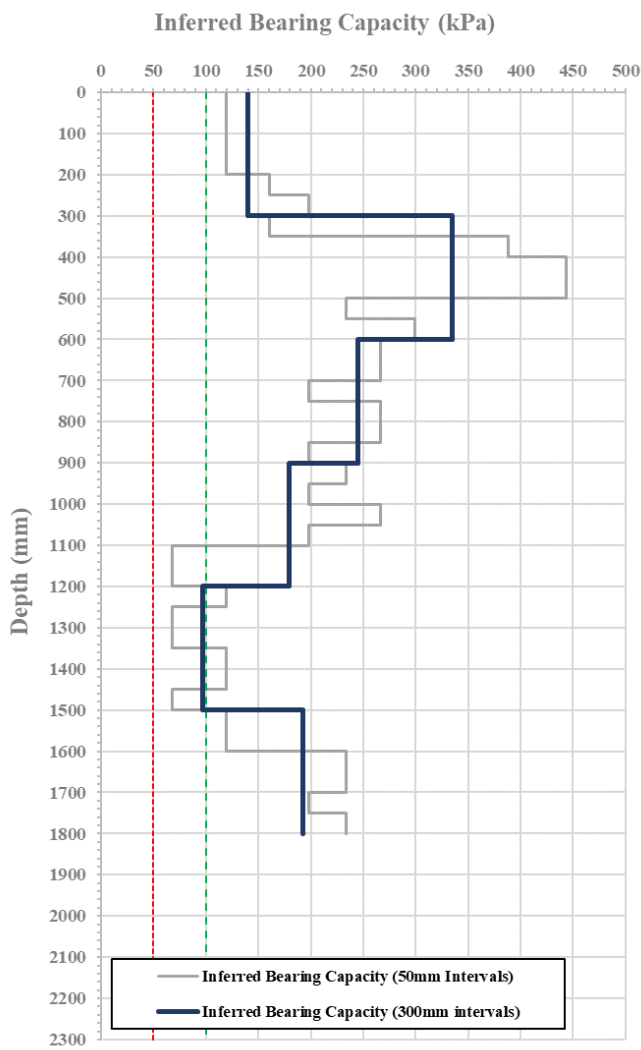
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 273 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	15	119
50 - 100	25.0	4		119
100 - 150	25.0	4		119
150 - 200	25.0	4	7	119
200 - 250	16.7	7		160
250 - 300	12.5	7	13	198
300 - 350	16.7	13		160
350 - 400	5.0	13		388
400 - 450	4.2	24	49	444
450 - 500	4.2			444
500 - 550	10.0	12	32	233
550 - 600	7.1			299
600 - 650	8.3	12	10	267
650 - 700	8.3			267
700 - 750	12.5	10	21	198
750 - 800	8.3			267
800 - 850	8.3	10	9	267
850 - 900	12.5			198
900 - 950	10.0	9	23	233
950 - 1000	12.5			198
1000 - 1050	8.3	10	9	267
1050 - 1100	12.5			198
1100 - 1150	50.0	2	23	68
1150 - 1200	50.0			68
1200 - 1250	25.0	3	9	119
1250 - 1300	50.0			68
1300 - 1350	50.0	3	23	68
1350 - 1400	25.0			119
1400 - 1450	25.0	3	9	119
1450 - 1500	50.0			68
1500 - 1550	25.0	4	23	119
1550 - 1600	25.0			119
1600 - 1650	10.0	10	9	233
1650 - 1700	10.0			233
1700 - 1750	12.5	9	23	198
1750 - 1800	10.0			233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 273 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1000 *	Brown Silty Sandy GRAVEL. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

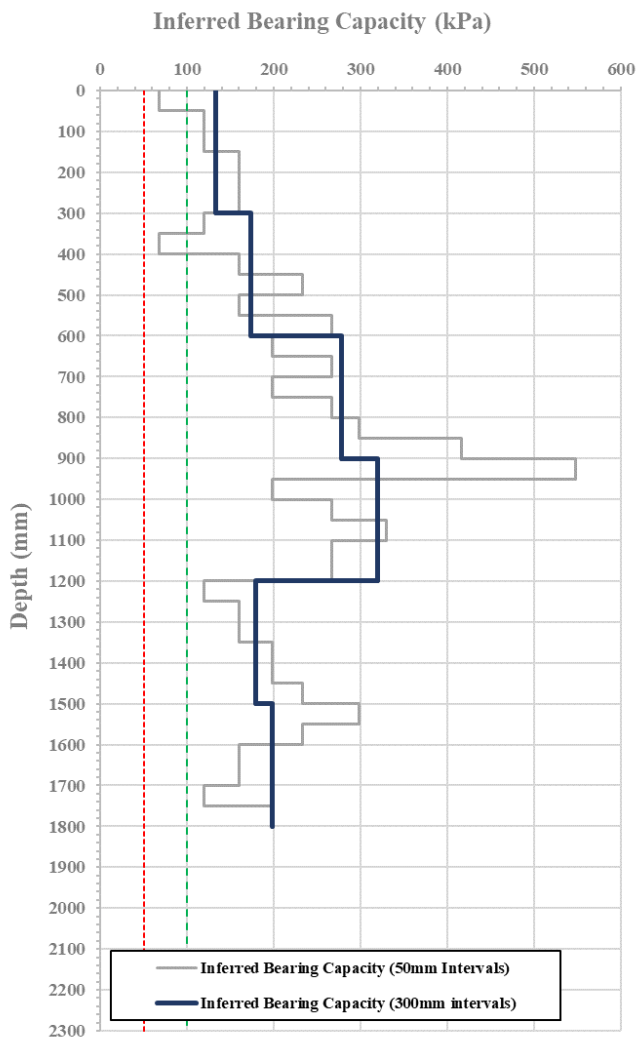
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 274 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	14	68
50 - 100	25.0	3		119
100 - 150	25.0	5		119
150 - 200	16.7	5		160
200 - 250	16.7	6	20	160
250 - 300	16.7			160
300 - 350	25.0	3	38	119
350 - 400	50.0	3		68
400 - 450	16.7	8		160
450 - 500	10.0	8		233
500 - 550	16.7	9	46	160
550 - 600	8.3			267
600 - 650	12.5	10	21	198
650 - 700	8.3			267
700 - 750	12.5	10	24	198
750 - 800	8.3			267
800 - 850	7.1	18	21	299
850 - 900	4.5			416
900 - 950	3.1	20	21	548
950 - 1000	12.5			198
1000 - 1050	8.3	14	21	267
1050 - 1100	6.3			330
1100 - 1150	8.3	12	21	267
1150 - 1200	8.3			267
1200 - 1250	25.0	5	21	119
1250 - 1300	16.7			160
1300 - 1350	16.7	7	21	160
1350 - 1400	12.5			198
1400 - 1450	12.5	9	21	198
1450 - 1500	10.0			233
1500 - 1550	7.1	12	21	299
1550 - 1600	10.0			233
1600 - 1650	16.7	6	21	160
1650 - 1700	16.7			160
1700 - 1750	25.0	6	21	119
1750 - 1800	12.5			198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 274 - See Page 127 for location plan	
Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1500 *	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 275 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	6	55	119
50 - 100	12.5			198
100 - 150	8.3	267		
150 - 200	6.3	330		
200 - 250	5.6	359		
250 - 300	1.9	35	783	
300 - 350	2.5	-	645	
Refusal				

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 275 - See Page 127 for location plan	
Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1200	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

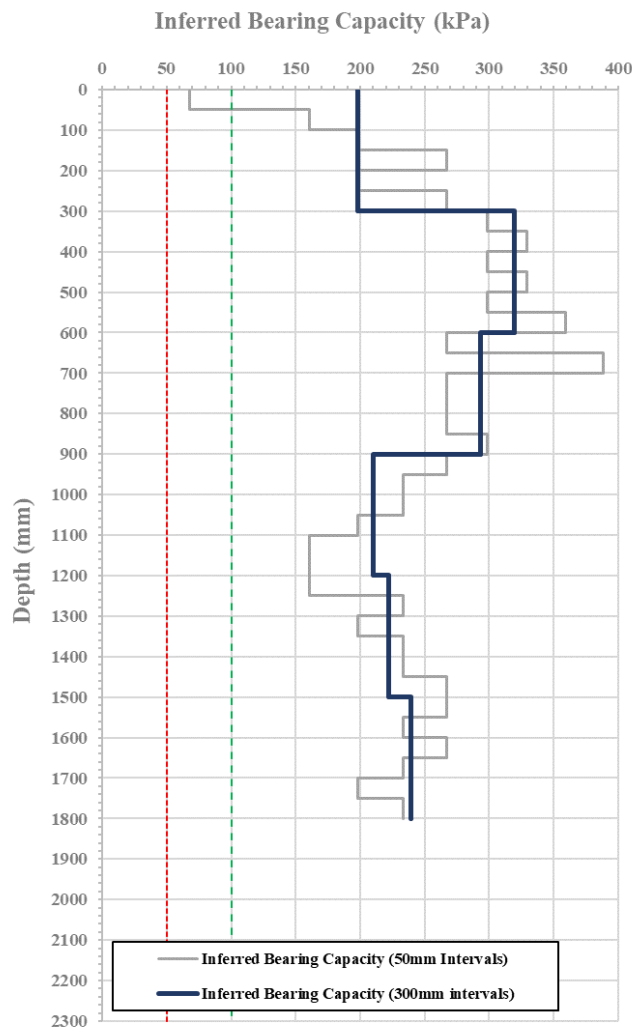


TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 279 – See Page 127 for location plan

Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	4	24	68
50 - 100	16.7	4		160
100 - 150	12.5	10		198
150 - 200	8.3	10	24	267
200 - 250	12.5			198
250 - 300	8.3	15	46	267
300 - 350	7.1			299
350 - 400	6.3			330
400 - 450	7.1	15	46	299
450 - 500	6.3			330
500 - 550	7.1	16	41	299
550 - 600	5.6			359
600 - 650	8.3	16	41	267
650 - 700	5.0			388
700 - 750	8.3	12	41	267
750 - 800	8.3			267
800 - 850	8.3			267
850 - 900	7.1	13	26	299
900 - 950	8.3			267
950 - 1000	10.0	11	26	233
1000 - 1050	10.0			233
1050 - 1100	12.5	9	26	198
1100 - 1150	16.7			160
1150 - 1200	16.7	6	28	160
1200 - 1250	16.7			160
1250 - 1300	10.0	8	28	233
1300 - 1350	12.5			198
1350 - 1400	10.0	9	28	233
1400 - 1450	10.0			233
1450 - 1500	8.3	11	31	267
1500 - 1550	8.3			267
1550 - 1600	10.0	11	31	233
1600 - 1650	8.3			267
1650 - 1700	10.0	11	31	233
1700 - 1750	12.5			198
1750 - 1800	10.0	9	31	233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 279 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1200	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1200 to 1400 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

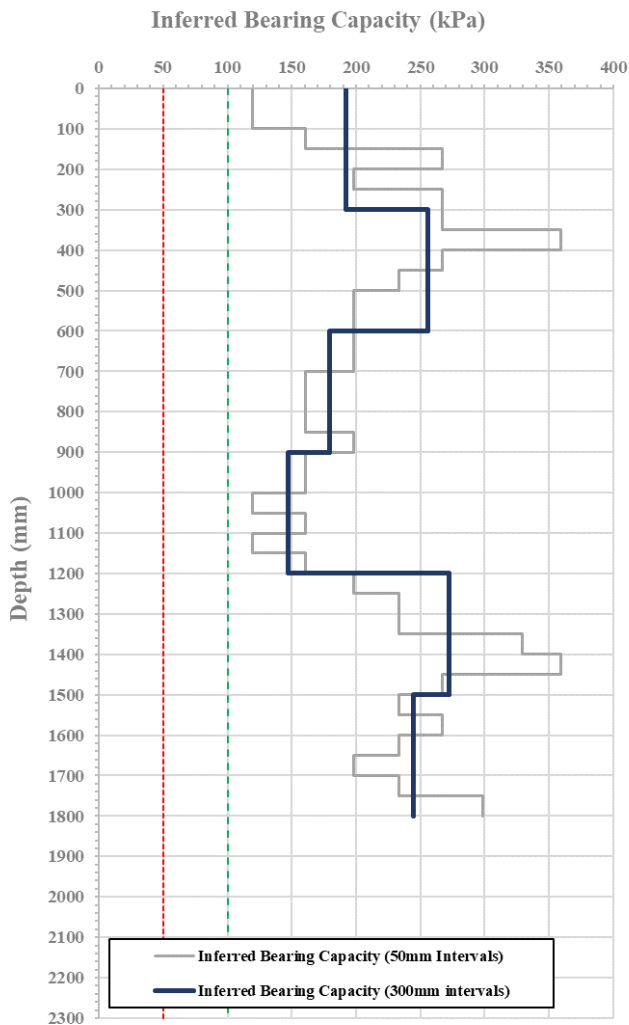
P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 280 – See Page 127 for location plan

Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	23	119
50 - 100	25.0	4		119
100 - 150	16.7	9		160
150 - 200	8.3	10	34	267
200 - 250	12.5			198
250 - 300	8.3	15	21	267
300 - 350	8.3			267
350 - 400	5.6			359
400 - 450	8.3	11	37	267
450 - 500	10.0			233
500 - 550	12.5	8	32	198
550 - 600	12.5			198
600 - 650	12.5			198
650 - 700	12.5	6	16	160
700 - 750	16.7			160
750 - 800	16.7	7	37	160
800 - 850	16.7			160
850 - 900	12.5	6	32	198
900 - 950	16.7			160
950 - 1000	16.7			160
1000 - 1050	25.0	5	37	119
1050 - 1100	16.7			160
1100 - 1150	25.0	5	32	119
1150 - 1200	16.7			160
1200 - 1250	12.5			198
1250 - 1300	10.0	9	37	233
1300 - 1350	10.0			233
1350 - 1400	6.3	13	32	330
1400 - 1450	5.6			359
1450 - 1500	8.3	15	32	267
1500 - 1550	10.0			233
1550 - 1600	8.3			267
1600 - 1650	10.0	9	32	233
1650 - 1700	12.5			198
1700 - 1750	10.0	12	32	233
1750 - 1800	7.1			299



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 280 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1400	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1400 to 1500 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

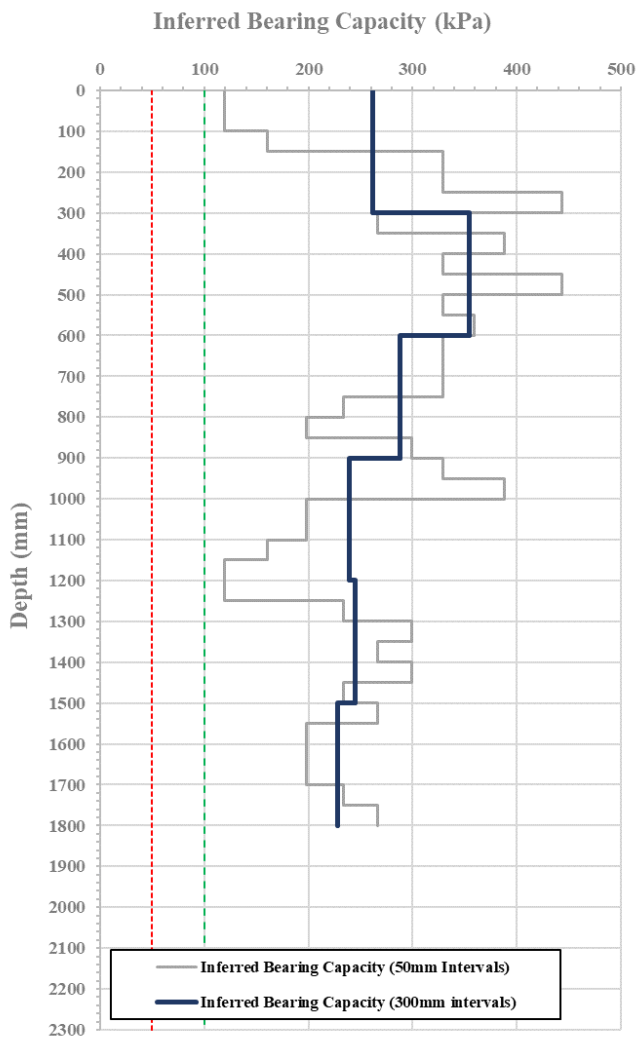
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 281 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	35	119
50 - 100	25.0	4		119
100 - 150	16.7	11		160
150 - 200	6.3	20	53	330
200 - 250	6.3			330
250 - 300	4.2	16	40	444
300 - 350	8.3			267
350 - 400	5.0			388
400 - 450	6.3	20	53	330
450 - 500	4.2			444
500 - 550	6.3	17	31	330
550 - 600	5.6			359
600 - 650	6.3	16	40	330
650 - 700	6.3			330
700 - 750	6.3	13	32	330
750 - 800	10.0			233
800 - 850	12.5	11	29	198
850 - 900	7.1			299
900 - 950	6.3	18	31	330
950 - 1000	5.0			388
1000 - 1050	12.5	8	29	198
1050 - 1100	12.5			198
1100 - 1150	16.7	5	32	160
1150 - 1200	25.0			119
1200 - 1250	25.0	7	29	119
1250 - 1300	10.0			233
1300 - 1350	7.1	13	31	299
1350 - 1400	8.3			267
1400 - 1450	7.1	12	29	299
1450 - 1500	10.0			233
1500 - 1550	8.3	10	31	267
1550 - 1600	12.5			198
1600 - 1650	12.5	8	29	198
1650 - 1700	12.5			198
1700 - 1750	10.0	11	31	233
1750 - 1800	8.3			267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 281 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1200	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
1200 to 1300 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

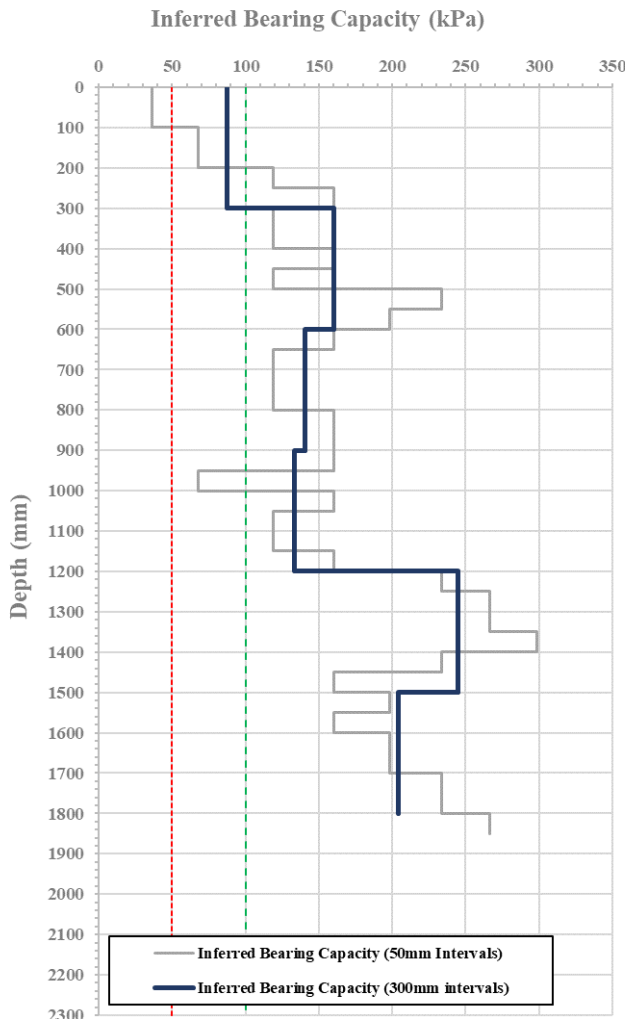
TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 282 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	8	36
50 - 100	100.0	1		36
100 - 150	50.0	2		68
150 - 200	50.0	2	18	68
200 - 250	25.0	5		119
250 - 300	16.7	5		160
300 - 350	25.0	4	15	119
350 - 400	25.0	4		119
400 - 450	16.7	5		160
450 - 500	25.0	5	14	119
500 - 550	10.0	9		233
550 - 600	12.5	9		198
600 - 650	16.7	5	25	160
650 - 700	25.0	5		119
700 - 750	25.0	4		119
750 - 800	25.0	4	32	119
800 - 850	16.7	6		160
850 - 900	16.7	6		160
900 - 950	16.7	4	25	160
950 - 1000	50.0	4		68
1000 - 1050	16.7	5		160
1050 - 1100	25.0	5	14	119
1100 - 1150	25.0	5		119
1150 - 1200	16.7	5		160
1200 - 1250	10.0	11	32	233
1250 - 1300	8.3	11		267
1300 - 1350	8.3	13		267
1350 - 1400	7.1	13	25	299
1400 - 1450	10.0	8		233
1450 - 1500	16.7	8		160
1500 - 1550	12.5	7	25	198
1550 - 1600	16.7	7		160
1600 - 1650	12.5	8		198
1650 - 1700	12.5	8	10	198
1700 - 1750	10.0	10		233
1750 - 1800	10.0	10		233
1800 - 1850	8.3	-	-	267

¹ 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.



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 282 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1500 *	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooring Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 283 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	4	17	68
50 - 100	16.7			160
100 - 150	12.5	7		198
150 - 200	16.7		20	160
200 - 250	16.7	6		160
250 - 300	16.7			160
300 - 350	16.7	6	30	160
350 - 400	16.7			160
400 - 450	12.5	7		198
450 - 500	16.7		15	160
500 - 550	12.5	7		198
550 - 600	16.7			160
600 - 650	25.0	6	10	119
650 - 700	12.5			198
700 - 750	10.0	15		233
750 - 800	5.0		19	388
800 - 850	10.0	9		233
850 - 900	12.5			198
900 - 950	25.0	5	15	119
950 - 1000	16.7			160
1000 - 1050	50.0	3		68
1050 - 1100	25.0		10	119
1100 - 1150	50.0	2		68
1150 - 1200	50.0			68
1200 - 1250	25.0	3	15	119
1250 - 1300	50.0			68
1300 - 1350	25.0	5		119
1350 - 1400	16.7		19	160
1400 - 1450	16.7	7		160
1450 - 1500	12.5			198
1500 - 1550	12.5	8	15	198
1550 - 1600	12.5			198
1600 - 1650	16.7	6		160
1650 - 1700	16.7		10	160
1700 - 1750	25.0	5		119
1750 - 1800	16.7			160
1800 - 1850	16.7	-	-	160

¹ 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.

The graph plots Inferred Bearing Capacity (kPa) on the x-axis (0 to 400) against Depth (mm) on the y-axis (0 to 2300). Two data series are shown: 'Inferred Bearing Capacity (50mm Intervals)' represented by a grey step-line and 'Inferred Bearing Capacity (300mm intervals)' represented by a blue step-line. Vertical dashed lines are present at approximately 50mm (red) and 100mm (green) depths. The blue line generally shows higher capacity values than the grey line, especially between 100mm and 1800mm depth.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 283 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400 *	Grey / brown SAND with trace of / minor silt. Moist. Tightly packed / loose. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

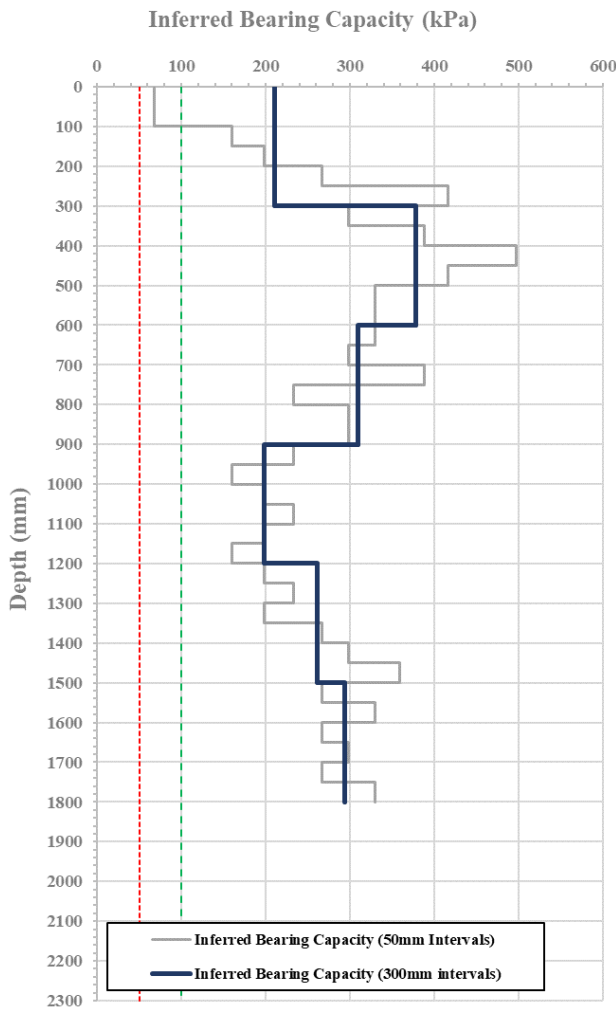
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 284 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	26	68
50 - 100	50.0	2		68
100 - 150	16.7	7		160
150 - 200	12.5	17	58	198
200 - 250	8.3			267
250 - 300	4.5	416		
300 - 350	7.1	17	44	299
350 - 400	5.0			388
400 - 450	3.6	25		24
450 - 500	4.5		416	
500 - 550	6.3	16	35	
550 - 600	6.3			330
600 - 650	6.3	15		41
650 - 700	7.1		299	
700 - 750	5.0	15	35	
750 - 800	10.0			233
800 - 850	7.1	14		41
850 - 900	7.1		299	
900 - 950	10.0	8	24	
950 - 1000	16.7			160
1000 - 1050	12.5	9		35
1050 - 1100	10.0		233	
1100 - 1150	12.5	7	41	
1150 - 1200	16.7			160
1200 - 1250	12.5	9		35
1250 - 1300	10.0		233	
1300 - 1350	12.5	10	41	
1350 - 1400	8.3			267
1400 - 1450	7.1	16		41
1450 - 1500	5.6		359	
1500 - 1550	8.3	14	41	
1550 - 1600	6.3			330
1600 - 1650	8.3	13		41
1650 - 1700	7.1		299	
1700 - 1750	8.3	14	41	
1750 - 1800	6.3			330



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 284 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1300	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1450 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

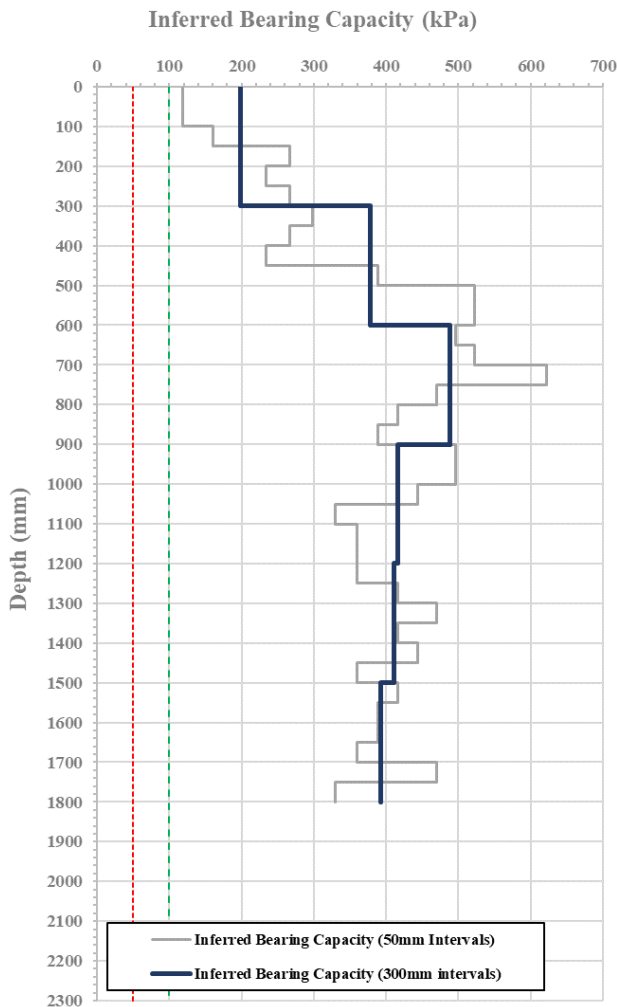
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 285 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	24	119
50 - 100	25.0	4		119
100 - 150	16.7	9		160
150 - 200	8.3	11	58	267
200 - 250	10.0			233
250 - 300	8.3	13	82	267
300 - 350	7.1			299
350 - 400	8.3			267
400 - 450	10.0	15	66	233
450 - 500	5.0			388
500 - 550	3.3	30	61	523
550 - 600	3.3			523
600 - 650	3.6	29	82	497
650 - 700	3.3			523
700 - 750	2.6	32	66	622
750 - 800	3.8			471
800 - 850	4.5	21	65	416
850 - 900	5.0			388
900 - 950	3.6	28	61	497
950 - 1000	3.6			497
1000 - 1050	4.2	20	66	444
1050 - 1100	6.3			330
1100 - 1150	5.6	18	65	359
1150 - 1200	5.6			359
1200 - 1250	5.6	20	61	359
1250 - 1300	4.5			416
1300 - 1350	3.8	24	65	471
1350 - 1400	4.5			416
1400 - 1450	4.2	21	61	444
1450 - 1500	5.6			359
1500 - 1550	4.5	21	61	416
1550 - 1600	5.0			388
1600 - 1650	5.0	19	61	388
1650 - 1700	5.6			359
1700 - 1750	3.8	21	61	471
1750 - 1800	6.3			330



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 285 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1300	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1400 *	Light grey SAND. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 286 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	15	68
50 - 100	25.0			119
100 - 150	25.0			119
150 - 200	25.0	4		119
200 - 250	16.7	8		160
250 - 300	10.0			233
300 - 350	10.0	13	233	
350 - 400	6.3		330	
400 - 450	8.3		49	267
450 - 500	5.6	359		
500 - 550	5.6	21		359
550 - 600	4.2		444	
600 - 650	6.3	23	330	
650 - 700	3.3		523	
700 - 750	5.0	29	388	
750 - 800	2.6		84	622
800 - 850	4.2			444
850 - 900	2.5	32	645	
Refusal				

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 286 - See Page 127 for location plan	
Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1300	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subrounded to rounded, maximum particle size 19.0mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1500	Light greenish / greyish blue Sandy SILT. Moist. Soft. Sand, fine to medium; Silt, 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.

Note:

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



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



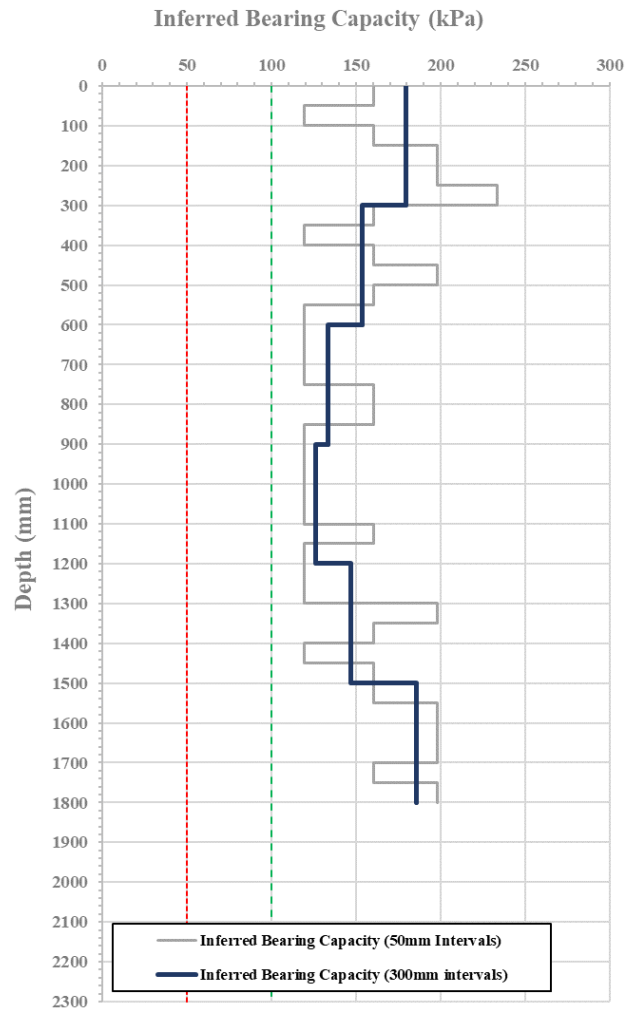
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 287 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	5	21	160
50 - 100	25.0	5		119
100 - 150	16.7	7		160
150 - 200	12.5	7		198
200 - 250	12.5	9		198
250 - 300	10.0	9	233	
300 - 350	16.7	5	17	160
350 - 400	25.0	5		119
400 - 450	16.7	7		160
450 - 500	12.5	7		198
500 - 550	16.7	5		160
550 - 600	25.0	5	14	119
600 - 650	25.0	4		119
650 - 700	25.0	4		119
700 - 750	25.0	5		119
750 - 800	16.7	5		160
800 - 850	16.7	5	13	160
850 - 900	25.0	5		119
900 - 950	25.0	4		119
950 - 1000	25.0	4		119
1000 - 1050	25.0	4		119
1050 - 1100	25.0	4	16	119
1100 - 1150	16.7	5		160
1150 - 1200	25.0	5		119
1200 - 1250	25.0	4		119
1250 - 1300	25.0	4		119
1300 - 1350	12.5	7	22	198
1350 - 1400	16.7	7		160
1400 - 1450	25.0	5		119
1450 - 1500	16.7	5		160
1500 - 1550	16.7	7		160
1550 - 1600	12.5	7	8	198
1600 - 1650	12.5	8		198
1650 - 1700	12.5	8		198
1700 - 1750	16.7	7		160
1750 - 1800	12.5	7		198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 287 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic 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 SAND with minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

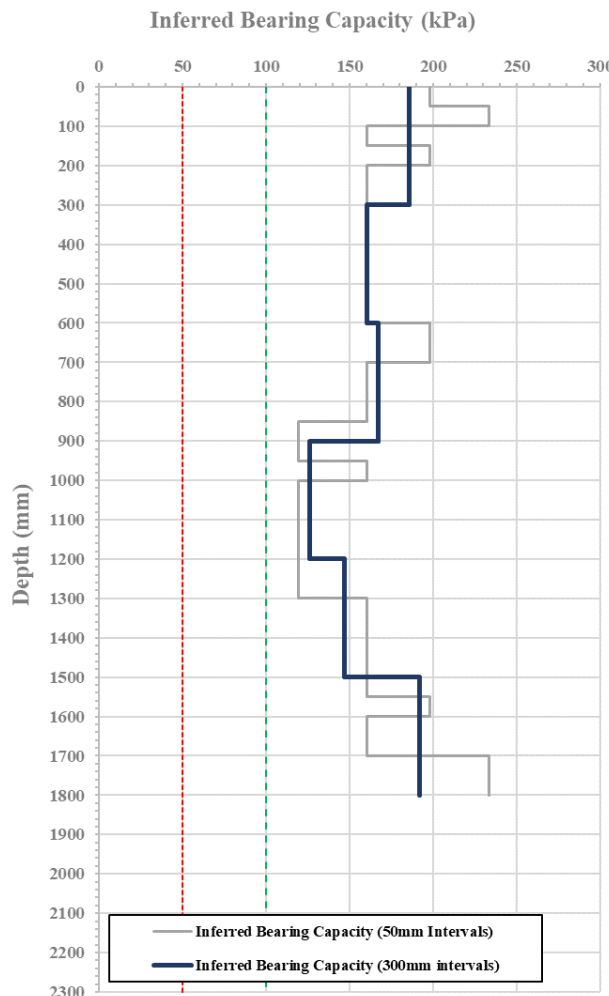
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 288 – See Page 127 for location plan					
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)	
		100 mm	300 mm		
0 - 50	12.5	9	22	198	
50 - 100	10.0	9		233	
100 - 150	16.7	7		160	
150 - 200	12.5	7		198	
200 - 250	16.7	6	18	160	
250 - 300	16.7			160	
300 - 350	16.7	6		160	
350 - 400	16.7	6		160	
400 - 450	16.7	6	19	160	
450 - 500	16.7			160	
500 - 550	16.7	6		160	
550 - 600	16.7	6		160	
600 - 650	12.5	8	13	198	
650 - 700	12.5			198	
700 - 750	16.7	6		160	
750 - 800	16.7	6		160	
800 - 850	16.7	5	16	160	
850 - 900	25.0			119	
900 - 950	25.0	5		23	119
950 - 1000	16.7				160
1000 - 1050	25.0	4	16		119
1050 - 1100	25.0				119
1100 - 1150	25.0	4		23	119
1150 - 1200	25.0				119
1200 - 1250	25.0	4	16		119
1250 - 1300	25.0				119
1300 - 1350	16.7	6		23	160
1350 - 1400	16.7				160
1400 - 1450	16.7	6	23		160
1450 - 1500	16.7				160
1500 - 1550	16.7	7		23	160
1550 - 1600	12.5				198
1600 - 1650	16.7	6	23		160
1650 - 1700	16.7				160
1700 - 1750	10.0	10		23	233
1750 - 1800	10.0				233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 288 - See Page 127 for location plan

Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 400	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
400 to 1400 *	Grey / brown SAND with minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 289 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	14	119
50 - 100	25.0	4		119
100 - 150	16.7	5		160
150 - 200	25.0	5	14	119
200 - 250	25.0	5		119
250 - 300	16.7	5	14	160
300 - 350	25.0	4		119
350 - 400	25.0	4	14	119
400 - 450	16.7	6		160
450 - 500	16.7	6	14	160
500 - 550	25.0	4		119
550 - 600	25.0	4	14	119
600 - 650	16.7	5		160
650 - 700	25.0	5	14	119
700 - 750	16.7	5		160
750 - 800	25.0	5	14	119
800 - 850	25.0	4		119
850 - 900	25.0	4	11	119
900 - 950	16.7	5		160
950 - 1000	25.0	5	11	119
1000 - 1050	25.0	3		119
1050 - 1100	50.0	3	11	68
1100 - 1150	25.0	3		119
1150 - 1200	50.0	3	15	68
1200 - 1250	25.0	3		119
1250 - 1300	50.0	3	15	68
1300 - 1350	16.7	5		160
1350 - 1400	25.0	5	15	119
1400 - 1450	12.5	7		198
1450 - 1500	16.7	7	30	160
1500 - 1550	12.5	8		198
1550 - 1600	12.5	8	30	198
1600 - 1650	10.0	10		233
1650 - 1700	10.0	10	30	233
1700 - 1750	10.0	12		233
1750 - 1800	7.1	12	299	

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 289 - See Page 127 for location plan

Depth (mm)	Description
0 to 300	Topsoil & vegetation (organic matter).
300 to 500	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, fine to coarse; Silt, non-plastic.
500 to 1400 *	Grey / brown SAND with minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

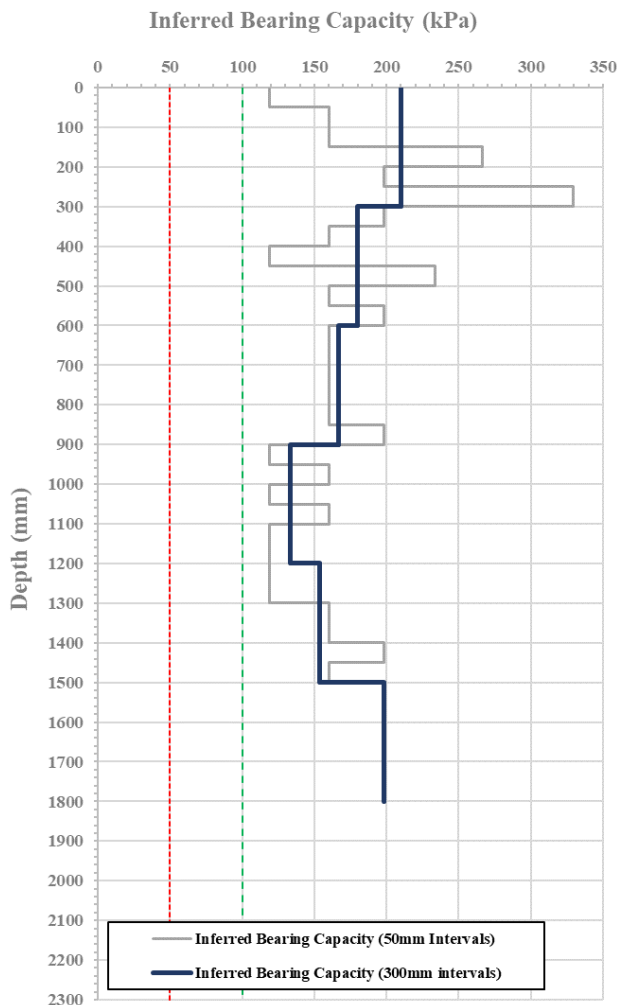
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 290 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	26	119
50 - 100	16.7	5		160
100 - 150	16.7	9		160
150 - 200	8.3	12		267
200 - 250	12.5			198
250 - 300	6.3		330	
300 - 350	12.5	7	21	198
350 - 400	16.7	7		160
400 - 450	25.0	7		119
450 - 500	10.0	7		233
500 - 550	16.7	7		160
550 - 600	12.5		198	
600 - 650	16.7	6	19	160
650 - 700	16.7	6		160
700 - 750	16.7	6		160
750 - 800	16.7	7		160
800 - 850	16.7	7		198
850 - 900	12.5	5	14	119
900 - 950	25.0	5		160
950 - 1000	16.7	5		119
1000 - 1050	25.0	4		160
1050 - 1100	16.7	4		119
1100 - 1150	25.0	4	17	119
1150 - 1200	25.0	6		160
1200 - 1250	25.0	7		160
1250 - 1300	25.0	7		198
1300 - 1350	16.7	8		160
1350 - 1400	16.7	8	24	198
1400 - 1450	12.5	8		198
1450 - 1500	16.7	8		198
1500 - 1550	12.5	8		198
1550 - 1600	12.5	8		198
1600 - 1650	12.5			198
1650 - 1700	12.5			198
1700 - 1750	12.5			198
1750 - 1800	12.5			198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 290 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400 *	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

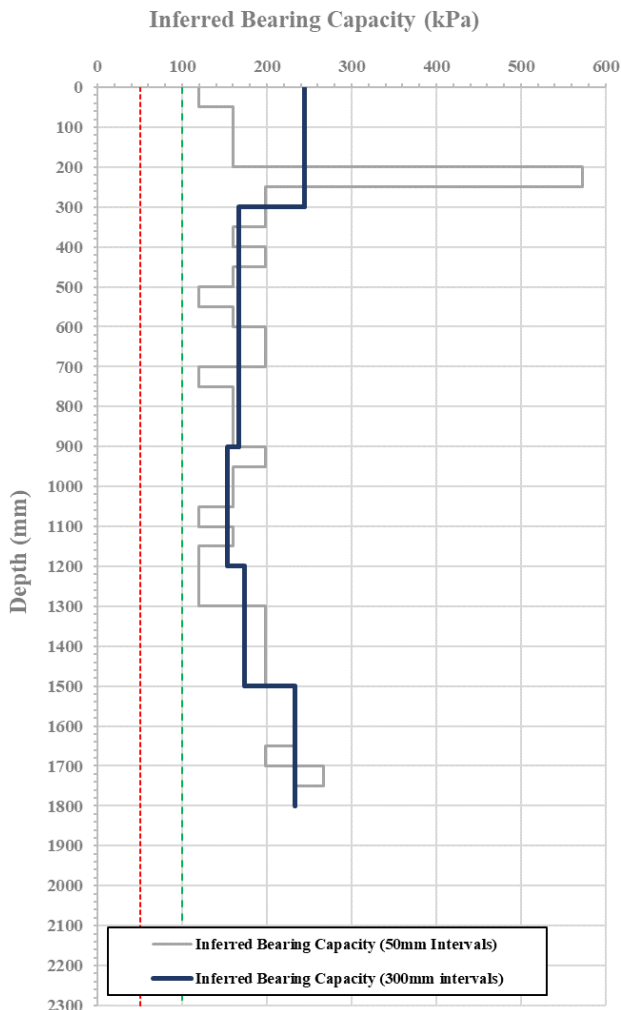
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 291 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	32	119
50 - 100	16.7	5		160
100 - 150	16.7	6		160
150 - 200	16.7	6	21	160
200 - 250	2.9	21		573
250 - 300	12.5	21		198
300 - 350	12.5	7	19	198
350 - 400	16.7	7		160
400 - 450	12.5	7		198
450 - 500	16.7	7	19	160
500 - 550	25.0	5		119
550 - 600	16.7	5		160
600 - 650	12.5	8	19	198
650 - 700	12.5	8		198
700 - 750	25.0	5		119
750 - 800	16.7	5	19	160
800 - 850	16.7	6		160
850 - 900	16.7	6		160
900 - 950	12.5	7	17	198
950 - 1000	16.7	7		160
1000 - 1050	16.7	5		160
1050 - 1100	25.0	5	17	119
1100 - 1150	16.7	5		160
1150 - 1200	25.0	5		119
1200 - 1250	25.0	4	20	119
1250 - 1300	25.0	4		119
1300 - 1350	12.5	8		198
1350 - 1400	12.5	8	20	198
1400 - 1450	12.5	8		198
1450 - 1500	12.5	8		198
1500 - 1550	10.0	10	30	233
1550 - 1600	10.0	10		233
1600 - 1650	10.0	9		233
1650 - 1700	12.5	9	11	198
1700 - 1750	8.3	11		267
1750 - 1800	10.0	11		233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 291 - See Page 127 for location plan

Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 1000 *	Grey / brown Gravelly SAND with trace of cobbles and trace of silt. Moist. Tightly packed. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

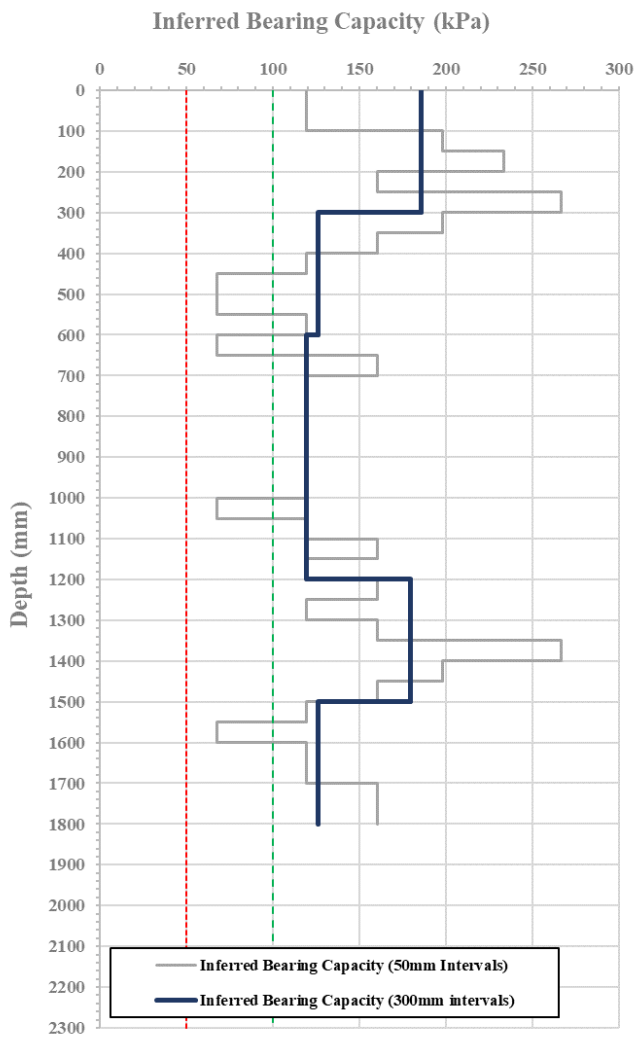
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 292 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	22	119
50 - 100	25.0	4		119
100 - 150	12.5	9		198
150 - 200	10.0	9	13	233
200 - 250	16.7	9		160
250 - 300	8.3	7		267
300 - 350	12.5	3	12	198
350 - 400	16.7	3		160
400 - 450	25.0	3		119
450 - 500	50.0	3	12	68
500 - 550	50.0	3		68
550 - 600	25.0	4		119
600 - 650	50.0	4	12	68
650 - 700	16.7	4		160
700 - 750	25.0	4		119
750 - 800	25.0	4	21	119
800 - 850	25.0	4		119
850 - 900	25.0	4		119
900 - 950	25.0	4	13	119
950 - 1000	25.0	3		119
1000 - 1050	50.0	3		68
1050 - 1100	25.0	5	13	119
1100 - 1150	16.7	5		160
1150 - 1200	25.0	5		119
1200 - 1250	16.7	9	13	160
1250 - 1300	25.0	7		119
1300 - 1350	16.7	9		160
1350 - 1400	8.3	7	13	267
1400 - 1450	12.5	4		198
1450 - 1500	16.7	3		160
1500 - 1550	25.0	4	13	119
1550 - 1600	50.0	4		68
1600 - 1650	25.0	6		119
1650 - 1700	25.0	6	13	119
1700 - 1750	16.7	6		160
1750 - 1800	16.7	6	160	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 292 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1450 *	Grey / brown Gravelly SAND with trace of cobbles and trace of silt. Moist. Tightly packed. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

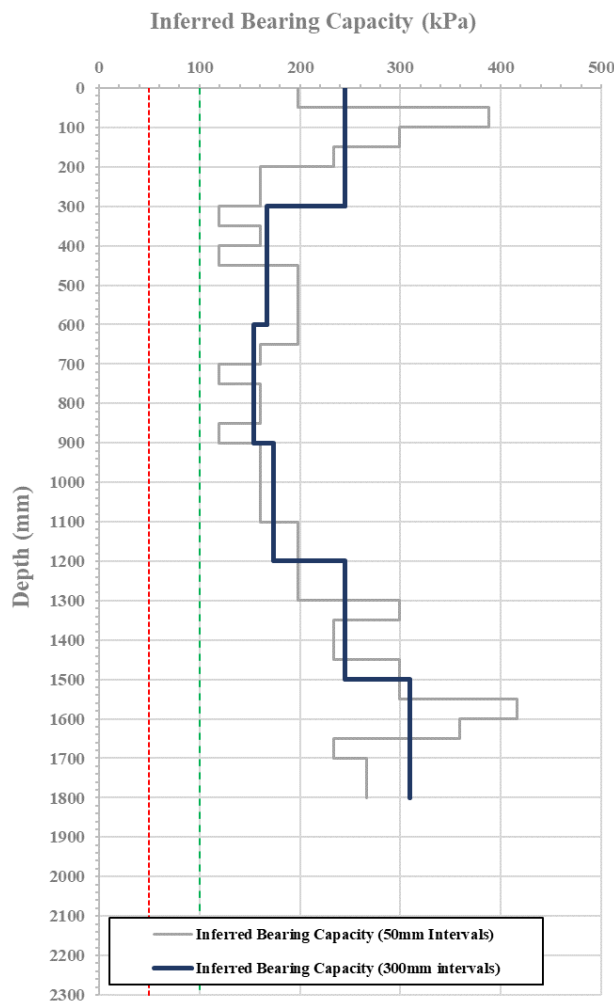
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 293 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	12.5	14	32	198
50 - 100	5.0	12		388
100 - 150	7.1			299
150 - 200	10.0	6	233	
200 - 250	16.7		160	
250 - 300	16.7	5	160	
300 - 350	25.0		119	
350 - 400	16.7		160	
400 - 450	25.0	6	119	
450 - 500	12.5		198	
500 - 550	12.5	8	198	
550 - 600	12.5		198	
600 - 650	12.5	7	198	
650 - 700	16.7		160	
700 - 750	25.0	5	119	
750 - 800	16.7		160	
800 - 850	16.7	5	160	
850 - 900	25.0		119	
900 - 950	16.7	6	160	
950 - 1000	16.7		160	
1000 - 1050	16.7	6	160	
1050 - 1100	16.7		160	
1100 - 1150	12.5	8	198	
1150 - 1200	12.5		198	
1200 - 1250	12.5	8	198	
1250 - 1300	12.5		198	
1300 - 1350	7.1	12	299	
1350 - 1400	10.0		233	
1400 - 1450	10.0	12	233	
1450 - 1500	7.1		299	
1500 - 1550	7.1	18	299	
1550 - 1600	4.5		416	
1600 - 1650	5.6	14	359	
1650 - 1700	10.0		233	
1700 - 1750	8.3	12	267	
1750 - 1800	8.3		267	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 293 - See Page 127 for location plan

Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 1350 *	Grey / brown Gravelly SAND with trace of cobbles and trace of silt. Moist. Compact. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

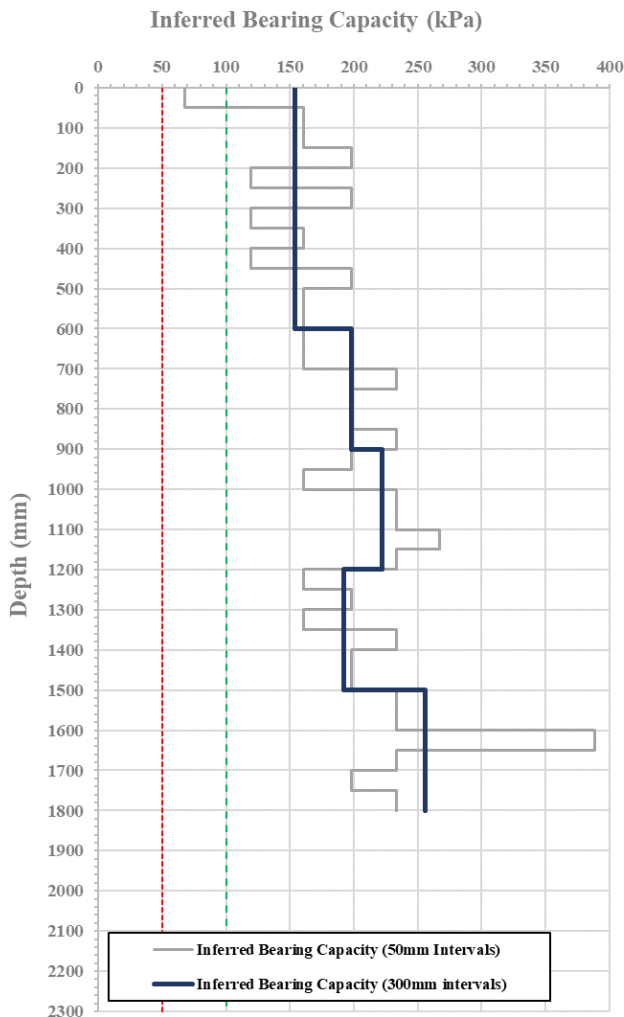
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 294 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	4	17	68
50 - 100	16.7	4		160
100 - 150	16.7	7		160
150 - 200	12.5	7	17	198
200 - 250	25.0	6		119
250 - 300	12.5	6		198
300 - 350	25.0	5	17	119
350 - 400	16.7	5		160
400 - 450	25.0	6		119
450 - 500	12.5	6	24	198
500 - 550	16.7	6		160
550 - 600	16.7	6		160
600 - 650	16.7	6	24	160
650 - 700	16.7	6		160
700 - 750	10.0	9		233
750 - 800	12.5	9	28	198
800 - 850	12.5	9		198
850 - 900	10.0	9		233
900 - 950	12.5	7	23	198
950 - 1000	16.7	7		160
1000 - 1050	10.0	10		233
1050 - 1100	10.0	10	34	233
1100 - 1150	8.3	11		267
1150 - 1200	10.0	11		233
1200 - 1250	16.7	7	23	160
1250 - 1300	12.5	7		198
1300 - 1350	16.7	8		160
1350 - 1400	10.0	8	34	233
1400 - 1450	12.5	8		198
1450 - 1500	12.5	8		198
1500 - 1550	10.0	10	34	233
1550 - 1600	10.0	10		233
1600 - 1650	5.0	15		388
1650 - 1700	10.0	15	34	233
1700 - 1750	12.5	9		198
1750 - 1800	10.0	9		233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 294 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1400 *	Grey / brown Gravelly SAND with trace of cobbles and trace of silt. Moist. Tightly packed. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

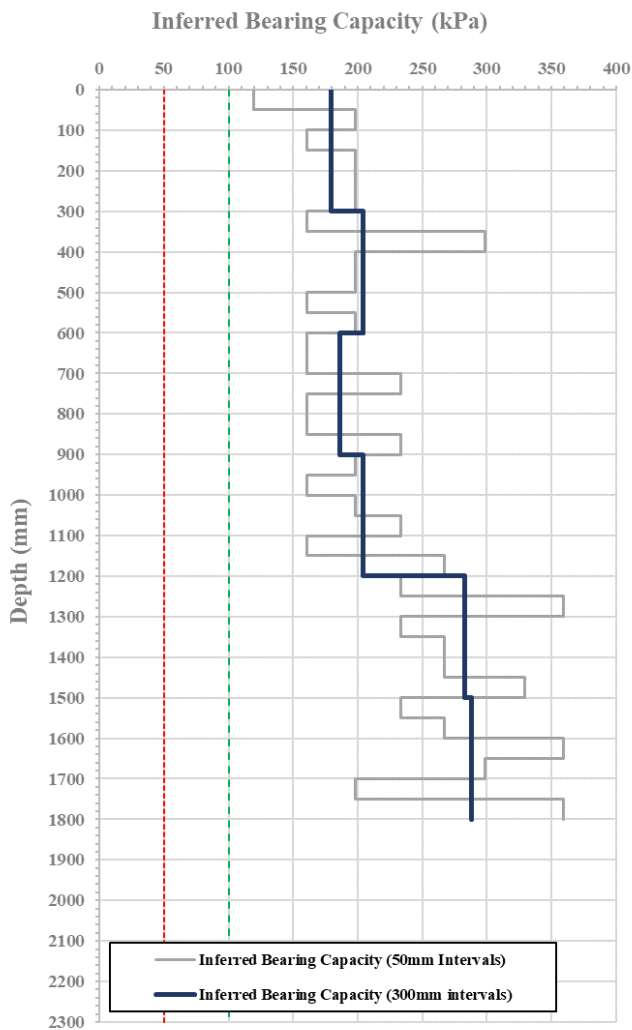
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 295 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	6	21	119
50 - 100	12.5	6		198
100 - 150	16.7	7		160
150 - 200	12.5	7		198
200 - 250	12.5	8		198
250 - 300	12.5	8	198	
300 - 350	16.7	10	25	160
350 - 400	7.1	10		299
400 - 450	12.5	8		198
450 - 500	12.5	8		198
500 - 550	16.7	7		160
550 - 600	12.5	7	22	198
600 - 650	16.7	6		160
650 - 700	16.7	6		160
700 - 750	10.0	8		233
750 - 800	16.7	8		160
800 - 850	16.7	8	25	160
850 - 900	10.0	8		233
900 - 950	12.5	7		198
950 - 1000	16.7	7		160
1000 - 1050	12.5	9		198
1050 - 1100	10.0	9	39	233
1100 - 1150	16.7	9		160
1150 - 1200	8.3	9		267
1200 - 1250	10.0	14		233
1250 - 1300	5.6	14		359
1300 - 1350	10.0	11	40	233
1350 - 1400	8.3	11		267
1400 - 1450	8.3	14		267
1450 - 1500	6.3	14		330
1500 - 1550	10.0	11		233
1550 - 1600	8.3	11	16	267
1600 - 1650	5.6	16		359
1650 - 1700	7.1	16		299
1700 - 1750	12.5	13		198
1750 - 1800	5.6	13		359



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 295 - See Page 127 for location plan

Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 1500 *	Grey / brown Gravelly SAND with trace of cobbles and trace of silt. Moist. Tightly packed. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



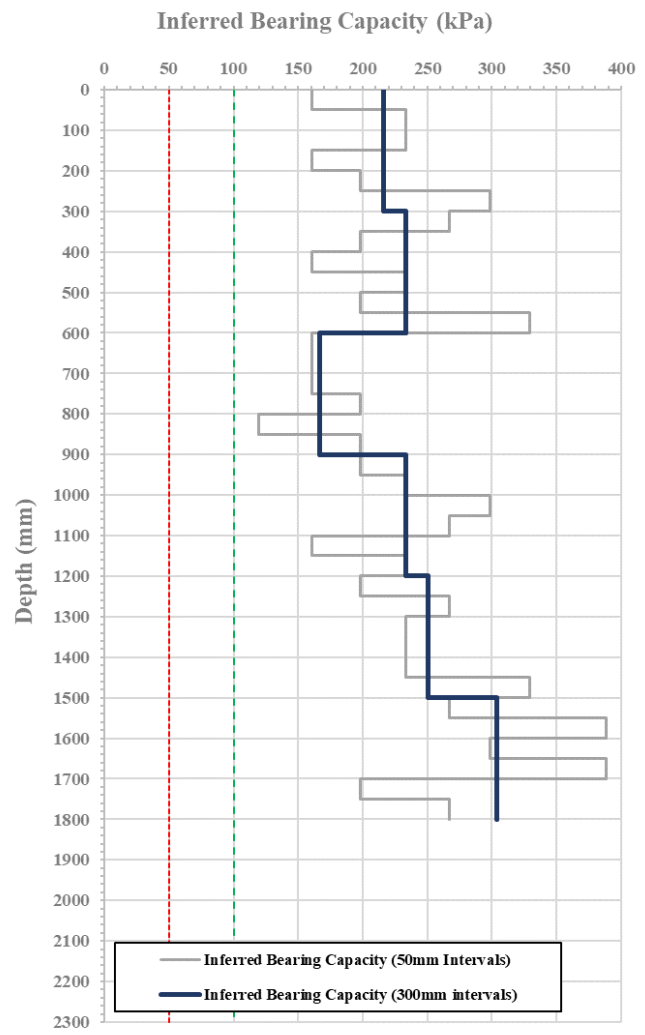
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 296 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	8	27	160
50 - 100	10.0	8		233
100 - 150	10.0	8		233
150 - 200	16.7	11	30	160
200 - 250	12.5	11		198
250 - 300	7.1	11		299
300 - 350	8.3	10	19	267
350 - 400	12.5	10		198
400 - 450	16.7	8		160
450 - 500	10.0	8	30	233
500 - 550	12.5	12		198
550 - 600	6.3	12		330
600 - 650	16.7	6	33	160
650 - 700	16.7	6		160
700 - 750	16.7	7		160
750 - 800	12.5	7	43	198
800 - 850	25.0	6		119
850 - 900	12.5	6		198
900 - 950	12.5	9	30	198
950 - 1000	10.0	9		233
1000 - 1050	7.1	13		299
1050 - 1100	8.3	13	33	267
1100 - 1150	16.7	8		160
1150 - 1200	10.0	8		233
1200 - 1250	12.5	10	43	198
1250 - 1300	8.3	10		267
1300 - 1350	10.0	10		233
1350 - 1400	10.0	10	33	233
1400 - 1450	10.0	13		233
1450 - 1500	6.3	13		330
1500 - 1550	8.3	16	43	267
1550 - 1600	5.0	16		388
1600 - 1650	7.1	17		299
1650 - 1700	5.0	17	33	388
1700 - 1750	12.5	10		198
1750 - 1800	8.3	10		267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 296 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400 *	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

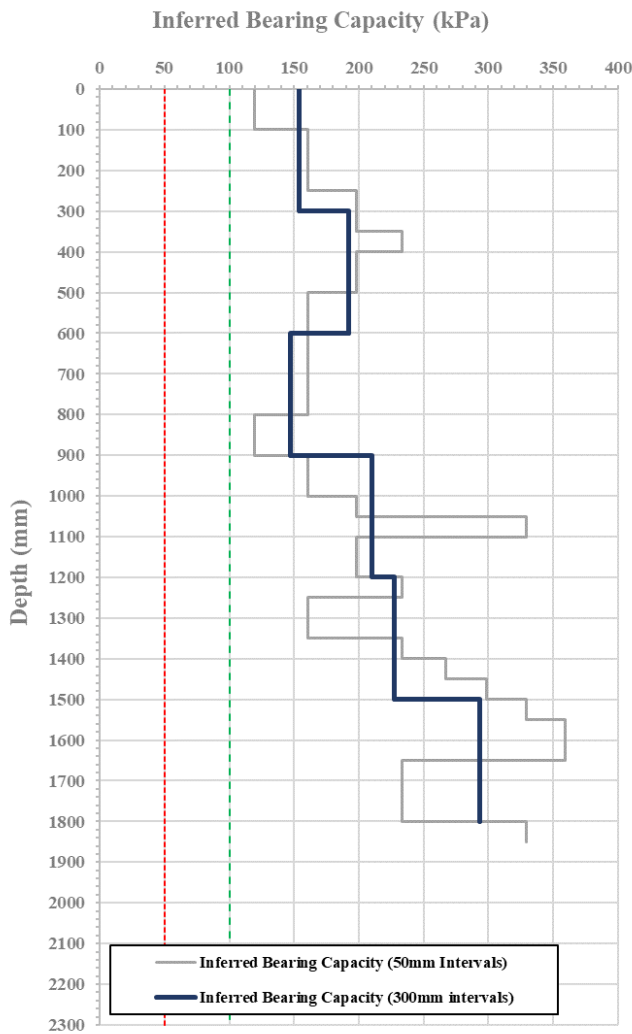
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 297 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	17	119
50 - 100	25.0	4		119
100 - 150	16.7	6		160
150 - 200	16.7	6	23	160
200 - 250	16.7	7		160
250 - 300	12.5	7		198
300 - 350	12.5	9	16	198
350 - 400	10.0	9		233
400 - 450	12.5	8		198
450 - 500	12.5	8	26	198
500 - 550	16.7	6		160
550 - 600	16.7	6		160
600 - 650	16.7	6	29	160
650 - 700	16.7	6		160
700 - 750	16.7	6		160
750 - 800	16.7	6	41	160
800 - 850	25.0	4		119
850 - 900	25.0	4		119
900 - 950	16.7	6	13	160
950 - 1000	16.7	6		160
1000 - 1050	12.5	12		198
1050 - 1100	6.3	12	8	330
1100 - 1150	12.5	8		198
1150 - 1200	12.5	8		198
1200 - 1250	10.0	8	17	233
1250 - 1300	16.7	8		160
1300 - 1350	16.7	8		160
1350 - 1400	10.0	8	14	233
1400 - 1450	8.3	13		267
1450 - 1500	7.1	13		299
1500 - 1550	6.3	17	10	330
1550 - 1600	5.6	17		359
1600 - 1650	5.6	14		359
1650 - 1700	10.0	14	10	233
1700 - 1750	10.0	10		233
1750 - 1800	10.0	10		233
1800 - 1850	6.3	-	-	330



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 297 - See Page 127 for location plan

Depth (mm)	Description
0 to 300	Topsoil & vegetation (organic matter).
300 to 1500 *	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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



Central Testing Services

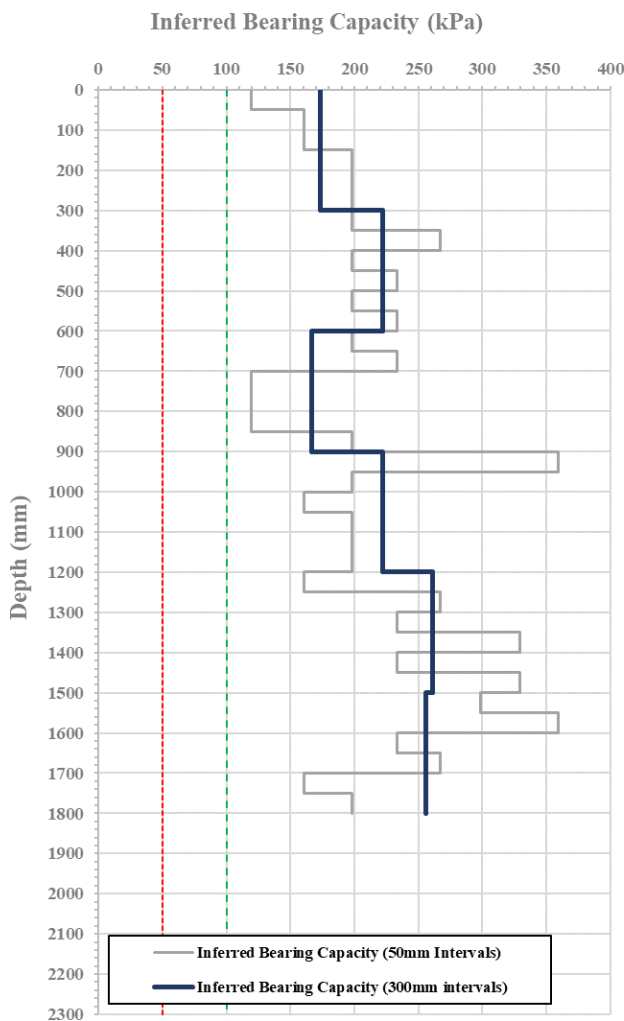
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 298 – See Page 127 for location plan					
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)	
		100 mm	300 mm		
0 - 50	25.0	5	20	119	
50 - 100	16.7	5		160	
100 - 150	16.7	7		160	
150 - 200	12.5	7		198	
200 - 250	12.5	8	28	198	
250 - 300	12.5			198	
300 - 350	12.5	10		198	
350 - 400	8.3	9		267	
400 - 450	12.5		198		
450 - 500	10.0		233		
500 - 550	12.5		198		
550 - 600	10.0	9	19	233	
600 - 650	12.5			198	
650 - 700	10.0			233	
700 - 750	25.0			119	
750 - 800	25.0	4	28	119	
800 - 850	25.0			119	
850 - 900	12.5	6		198	
900 - 950	5.6	13		35	359
950 - 1000	12.5		198		
1000 - 1050	16.7		7		160
1050 - 1100	12.5		198		
1100 - 1150	12.5	8	34	198	
1150 - 1200	12.5			198	
1200 - 1250	16.7	9		160	
1250 - 1300	8.3	13		34	267
1300 - 1350	10.0		233		
1350 - 1400	6.3		330		
1400 - 1450	10.0		233		
1450 - 1500	6.3	13	34	330	
1500 - 1550	7.1			299	
1550 - 1600	5.6			16	359
1600 - 1650	10.0			11	233
1650 - 1700	8.3	267			
1700 - 1750	16.7	7	34	160	
1750 - 1800	12.5			198	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 298 - See Page 127 for location plan

Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 1500 *	Grey / brown Gravelly SAND with trace of silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



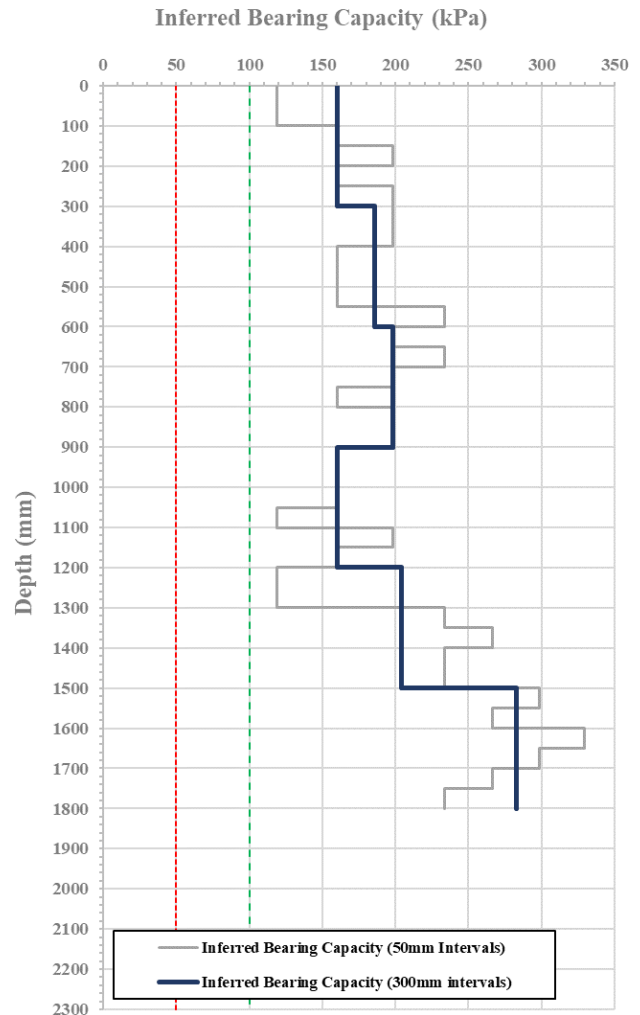
Test results indicated as not accredited are outside the scope of the laboratory's accreditation



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 299 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	18	119
50 - 100	25.0	4		119
100 - 150	16.7	7		160
150 - 200	12.5	7		198
200 - 250	16.7	7	22	160
250 - 300	12.5	7		198
300 - 350	12.5	8		198
350 - 400	12.5	8		198
400 - 450	16.7	6	24	160
450 - 500	16.7	6		160
500 - 550	16.7	8		160
550 - 600	10.0	8		233
600 - 650	12.5	9	18	198
650 - 700	10.0	9		233
700 - 750	12.5	7		198
750 - 800	16.7	7		160
800 - 850	12.5	8	25	198
850 - 900	12.5	8		198
900 - 950	16.7	6		160
950 - 1000	16.7	6		160
1000 - 1050	16.7	5	39	160
1050 - 1100	25.0	5		119
1100 - 1150	12.5	7		198
1150 - 1200	16.7	7		160
1200 - 1250	25.0	4	11	119
1250 - 1300	25.0	4		119
1300 - 1350	10.0	11		233
1350 - 1400	8.3	11		267
1400 - 1450	10.0	10	15	233
1450 - 1500	10.0	10		233
1500 - 1550	7.1	13		299
1550 - 1600	8.3	13		267
1600 - 1650	6.3	15	11	330
1650 - 1700	7.1	15		299
1700 - 1750	8.3	11		267
1750 - 1800	10.0	11		233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 299 - See Page 127 for location plan

Depth (mm)	Description
0 to 300	Topsoil & vegetation (organic matter).
300 to 1350 *	Light brown Sandy GRAVEL with trace of / minor silt. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

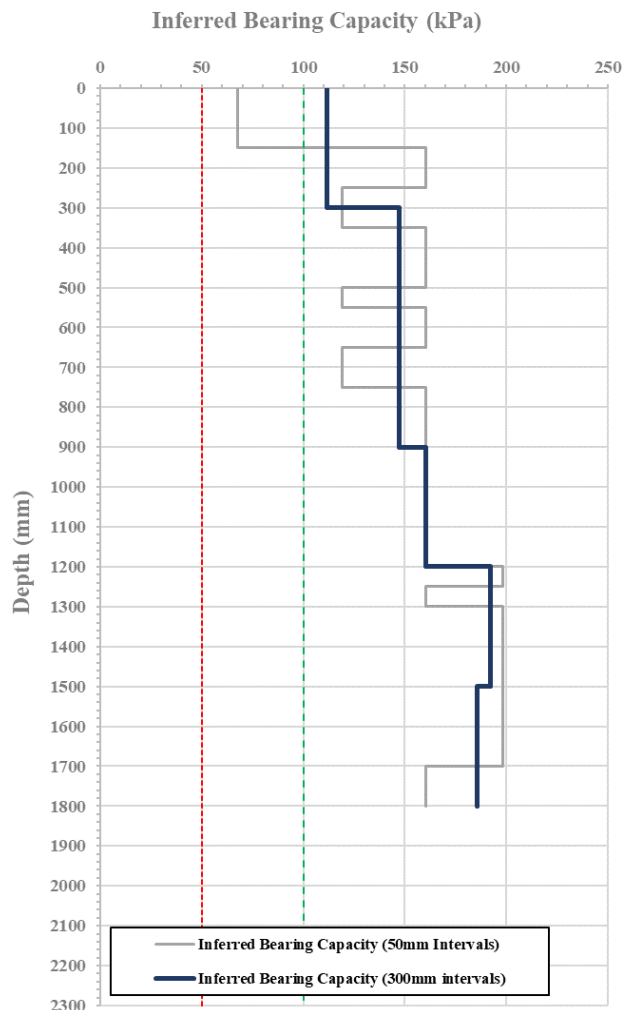
P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 301 – See Page 127 for location plan

Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	11	68
50 - 100	50.0			68
100 - 150	50.0	4		68
150 - 200	16.7			160
200 - 250	16.7		160	
250 - 300	25.0	5	16	119
300 - 350	25.0			119
350 - 400	16.7	5		160
400 - 450	16.7			160
450 - 500	16.7	6	16	160
500 - 550	25.0			119
550 - 600	16.7	5		160
600 - 650	16.7			160
650 - 700	25.0	5	16	119
700 - 750	25.0			119
750 - 800	16.7	5		160
800 - 850	16.7			160
850 - 900	16.7	6	18	160
900 - 950	16.7			160
950 - 1000	16.7	6		160
1000 - 1050	16.7			160
1050 - 1100	16.7	6	23	160
1100 - 1150	16.7			160
1150 - 1200	16.7	6		160
1200 - 1250	12.5			198
1250 - 1300	16.7	7	22	160
1300 - 1350	12.5			198
1350 - 1400	12.5	8		198
1400 - 1450	12.5			198
1450 - 1500	12.5	8	22	198
1500 - 1550	12.5			198
1550 - 1600	12.5	8		198
1600 - 1650	12.5			198
1650 - 1700	12.5	8	22	198
1700 - 1750	16.7			160
1750 - 1800	16.7	6		160



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 301 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1250 *	Grey / brown Gravelly SAND with some silt, Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

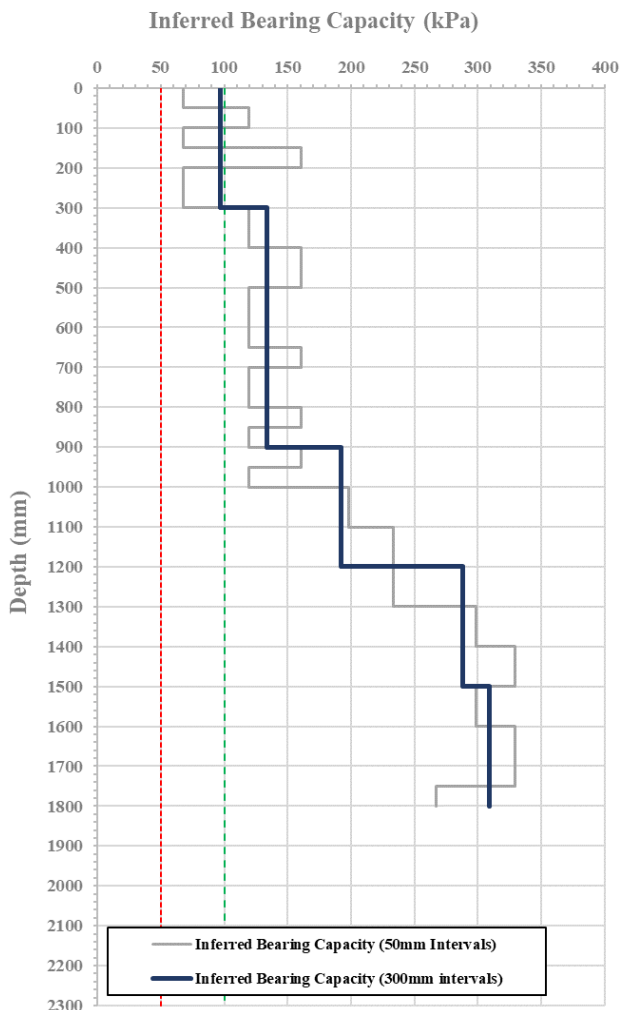
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 302 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	9	68
50 - 100	25.0	3		119
100 - 150	50.0	4		68
150 - 200	16.7	4	14	160
200 - 250	50.0	2		68
250 - 300	50.0	2		68
300 - 350	25.0	4	14	119
350 - 400	25.0	4		119
400 - 450	16.7	6		160
450 - 500	16.7	6	14	160
500 - 550	25.0	4		119
550 - 600	25.0	4		119
600 - 650	25.0	5	14	119
650 - 700	16.7	5		160
700 - 750	25.0	4		119
750 - 800	25.0	4	14	119
800 - 850	16.7	5		160
850 - 900	25.0	5		119
900 - 950	16.7	5	23	160
950 - 1000	25.0	5		119
1000 - 1050	12.5	8		198
1050 - 1100	12.5	8	23	198
1100 - 1150	10.0	10		233
1150 - 1200	10.0	10		233
1200 - 1250	10.0	10	40	233
1250 - 1300	10.0	10		233
1300 - 1350	7.1	14		299
1350 - 1400	7.1	14	40	299
1400 - 1450	6.3	16		330
1450 - 1500	6.3	16		330
1500 - 1550	7.1	14	44	299
1550 - 1600	7.1	14		299
1600 - 1650	6.3	16		330
1650 - 1700	6.3	16	44	330
1700 - 1750	6.3	14		330
1750 - 1800	8.3	14		267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 302 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1500 *	Light brown Gravelly SAND with trace of silt. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

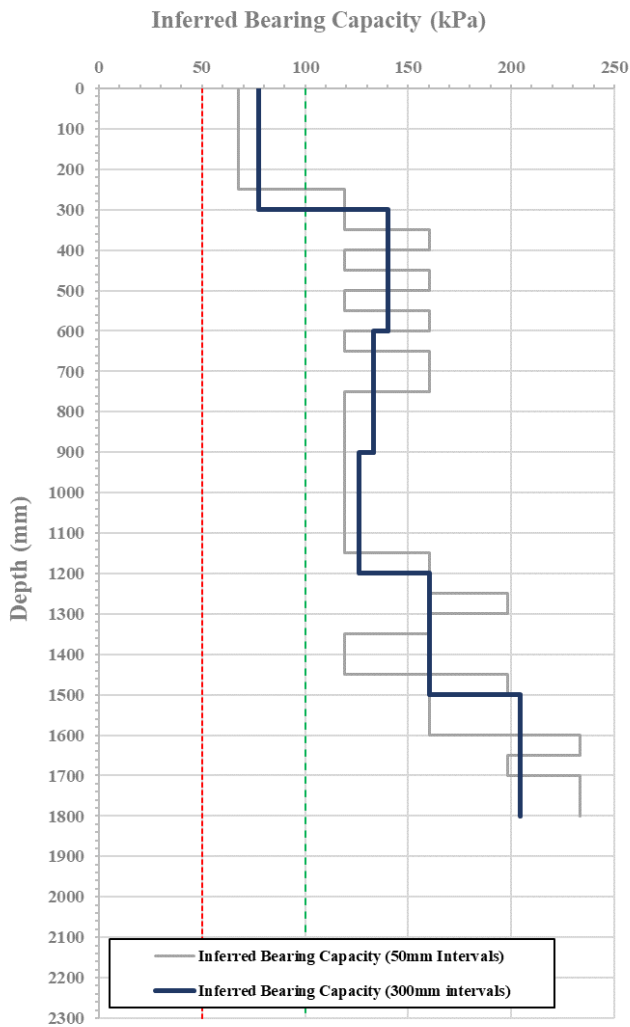
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 303 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	7	68
50 - 100	50.0	2		68
100 - 150	50.0	2		68
150 - 200	50.0	3	15	68
200 - 250	50.0	3		119
250 - 300	25.0	5	14	119
300 - 350	25.0	5		119
350 - 400	16.7	5		160
400 - 450	25.0	5	13	119
450 - 500	16.7	5		160
500 - 550	25.0	5	18	119
550 - 600	16.7	5		119
600 - 650	25.0	5		160
650 - 700	16.7	5	25	160
700 - 750	16.7	5		160
750 - 800	25.0	5	9	119
800 - 850	25.0	4		119
850 - 900	25.0	4		119
900 - 950	25.0	4	10	119
950 - 1000	25.0	4		119
1000 - 1050	25.0	4	6	119
1050 - 1100	25.0	4		119
1100 - 1150	25.0	4		119
1150 - 1200	16.7	5	7	160
1200 - 1250	16.7	7		160
1250 - 1300	12.5	7	5	198
1300 - 1350	16.7	5		160
1350 - 1400	25.0	5		119
1400 - 1450	25.0	6	6	119
1450 - 1500	12.5	6		198
1500 - 1550	16.7	6	9	160
1550 - 1600	16.7	6		160
1600 - 1650	10.0	9		233
1650 - 1700	12.5	9	10	198
1700 - 1750	10.0	10		233
1750 - 1800	10.0	10		233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 303 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1500 *	Light brown Gravelly SAND with trace of silt. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

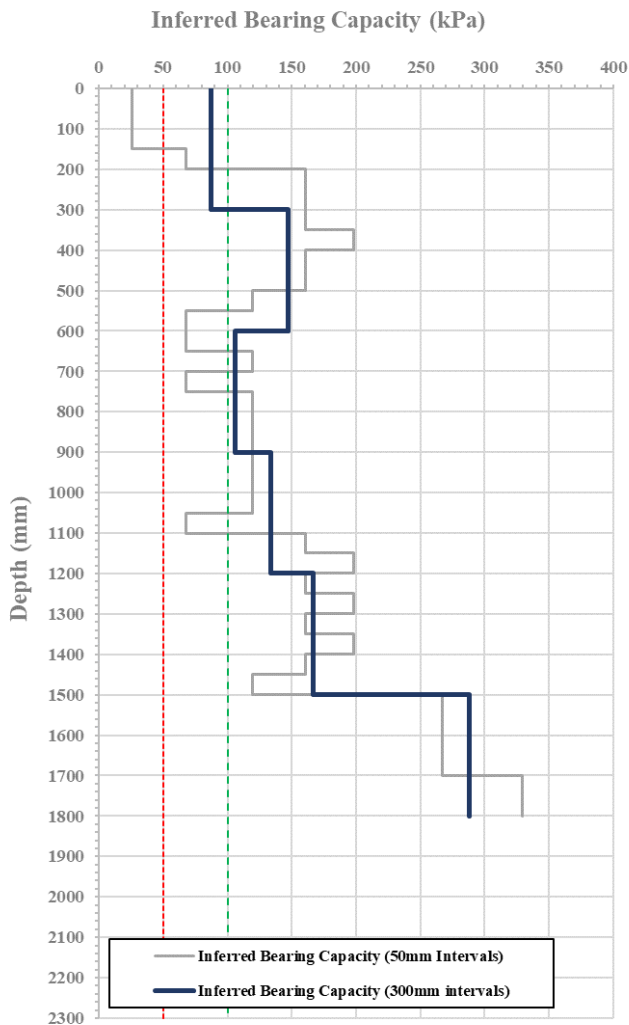
P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 304 – See Page 127 for location plan

Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	150.0	0.7	8	25
50 - 100	150.0			25
100 - 150	150.0			25
150 - 200	50.0	1.3	8	68
200 - 250	16.7			160
250 - 300	16.7	6	8	160
300 - 350	16.7			160
350 - 400	12.5	7	16	198
400 - 450	16.7			160
450 - 500	16.7	6	16	160
500 - 550	25.0			119
550 - 600	50.0	3	10	68
600 - 650	50.0			119
650 - 700	25.0	3	10	68
700 - 750	50.0			119
750 - 800	25.0	3	10	119
800 - 850	25.0			119
850 - 900	25.0	4	14	119
900 - 950	25.0			119
950 - 1000	25.0	4	14	119
1000 - 1050	25.0			119
1050 - 1100	50.0	3	14	68
1100 - 1150	16.7			160
1150 - 1200	12.5	7	19	198
1200 - 1250	16.7			160
1250 - 1300	12.5	7	19	198
1300 - 1350	16.7			160
1350 - 1400	12.5	7	19	198
1400 - 1450	16.7			160
1450 - 1500	25.0	5	40	119
1500 - 1550	8.3			267
1550 - 1600	8.3	12	40	267
1600 - 1650	8.3			267
1650 - 1700	8.3	12	40	267
1700 - 1750	6.3			330
1750 - 1800	6.3	16	40	330



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 304 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1300	Brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1500 *	Grey / brown SAND with trace of / minor silt. Moist. Tightly packed. Sand; 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

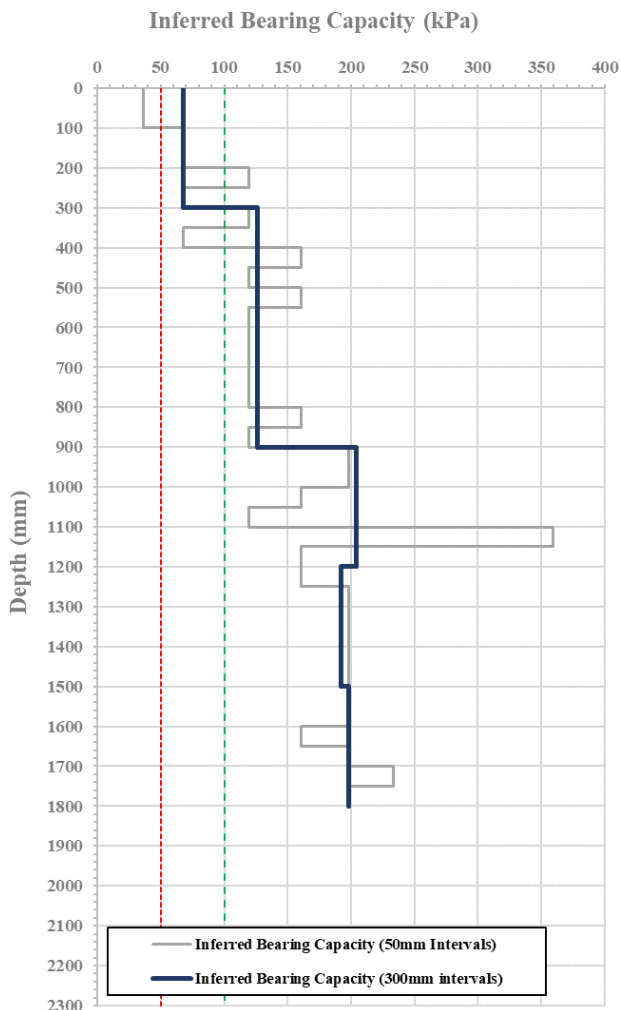
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 305 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	6	36
50 - 100	100.0	1		36
100 - 150	50.0	2		68
150 - 200	50.0	2	13	68
200 - 250	25.0	3		119
250 - 300	50.0	3		68
300 - 350	25.0	3	25	119
350 - 400	50.0	3		68
400 - 450	16.7	5		160
450 - 500	25.0	5	23	119
500 - 550	16.7	5		160
550 - 600	25.0	5		119
600 - 650	25.0	4	24	119
650 - 700	25.0	4		119
700 - 750	25.0	4		119
750 - 800	25.0	4	24	119
800 - 850	16.7	5		160
850 - 900	25.0	5		119
900 - 950	12.5	8	24	198
950 - 1000	12.5	8		198
1000 - 1050	16.7	5		160
1050 - 1100	25.0	5	24	119
1100 - 1150	5.6	12		359
1150 - 1200	16.7	12		160
1200 - 1250	16.7	7	24	160
1250 - 1300	12.5	7		198
1300 - 1350	12.5	8		198
1350 - 1400	12.5	8	24	198
1400 - 1450	12.5	8		198
1450 - 1500	12.5	8		198
1500 - 1550	12.5	8	24	198
1550 - 1600	12.5	8		198
1600 - 1650	16.7	7		160
1650 - 1700	12.5	7	24	198
1700 - 1750	10.0	9		233
1750 - 1800	12.5	9		198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 305 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1500 *	Brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

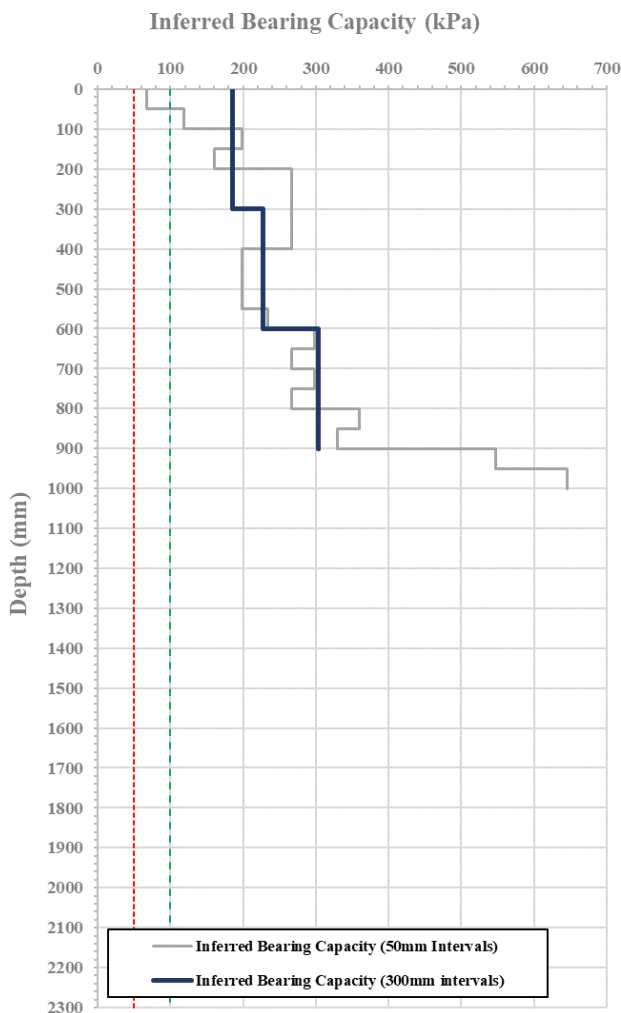
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 306 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	22	68
50 - 100	25.0	3		119
100 - 150	12.5	7		198
150 - 200	16.7	7		160
200 - 250	8.3	12	29	267
250 - 300	8.3			267
300 - 350	8.3	12		267
350 - 400	8.3	12		267
400 - 450	12.5	8	43	198
450 - 500	12.5			198
500 - 550	12.5	9		198
550 - 600	10.0			233
600 - 650	7.1	13	17	299
650 - 700	8.3			267
700 - 750	7.1	13		299
750 - 800	8.3			267
800 - 850	5.6	17	359	
850 - 900	6.3		330	
900 - 950	3.1	36	548	
950 - 1000	2.5		-	645
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 306 - See Page 127 for location plan	
Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1050	Brown Silty Sandy GRAVEL. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 19.0mm; Sand, fine to coarse; Silt, non-plastic.
1050 to 1500	Grey / brown SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

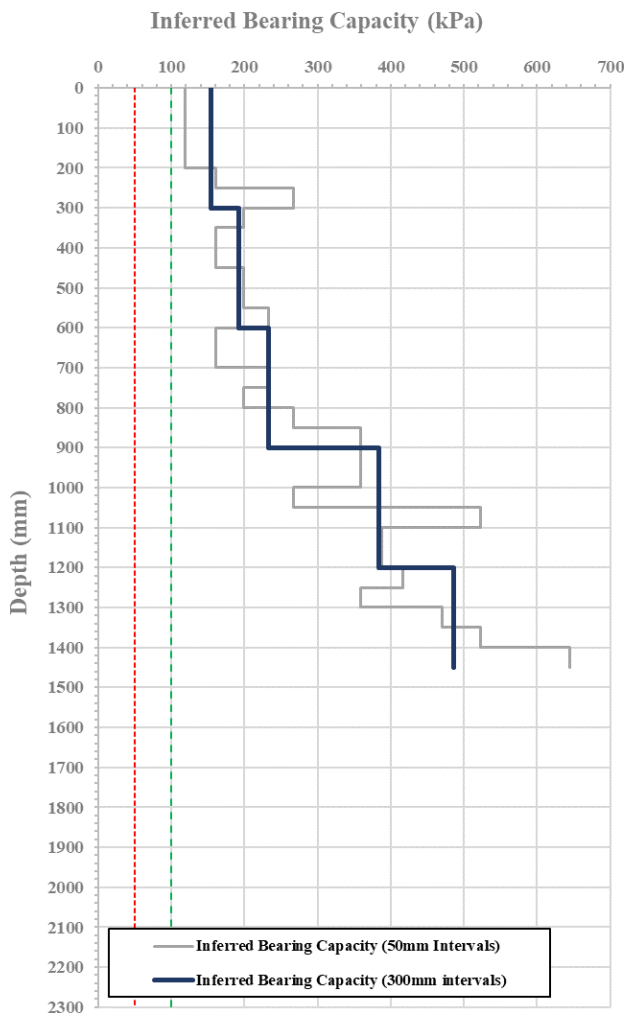
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 307 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	17	119
50 - 100	25.0	4		119
100 - 150	25.0	4		119
150 - 200	25.0	9	23	119
200 - 250	16.7	9		160
250 - 300	8.3	9		267
300 - 350	12.5	7	30	198
350 - 400	16.7	7		160
400 - 450	16.7	7		160
450 - 500	12.5	9	59	198
500 - 550	12.5	9		198
550 - 600	10.0	6		233
600 - 650	16.7	6	82	160
650 - 700	16.7	9		160
700 - 750	10.0	9		233
750 - 800	12.5	15	28	198
800 - 850	8.3	15		267
850 - 900	5.6	18		359
900 - 950	5.6	18	≅ 82	359
950 - 1000	5.6	21		359
1000 - 1050	8.3	21		267
1050 - 1100	3.3	20	≅ 82	523
1100 - 1150	5.0	20		388
1150 - 1200	5.0	20		388
1200 - 1250	4.5	20	≅ 82	416
1250 - 1300	5.6	28		359
1300 - 1350	3.8	28		471
1350 - 1400	3.3	-	≅ 82	523
1400 - 1450	2.5	-		645
Refusal				
¹ 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.				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 307 - See Page 127 for location plan

Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 1500	Brown Silty Sandy GRAVEL. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 19.0mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 308 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2		68
50 - 100	50.0			68
100 - 150	25.0	6	14	119
150 - 200	12.5			198
200 - 250	16.7	6		160
250 - 300	16.7			160
300 - 350	16.7	6		160
350 - 400	16.7			160
400 - 450	25.0	4	17	119
450 - 500	25.0			119
500 - 550	16.7	7		160
550 - 600	12.5			198
600 - 650	12.5	9		198
650 - 700	10.0			233
700 - 750	16.7	6	23	160
750 - 800	16.7			160
800 - 850	12.5	8		198
850 - 900	12.5			198
900 - 950	16.7	7		160
950 - 1000	12.5			198
1000 - 1050	16.7	8	25	160
1050 - 1100	10.0			233
1100 - 1150	10.0	10		233
1150 - 1200	10.0			233
1200 - 1250	8.3	11		267
1250 - 1300	10.0			233
1300 - 1350	10.0	12	49	233
1350 - 1400	7.1			299
1400 - 1450	8.3	26		267
1450 - 1500	2.5			645

Inferred Bearing Capacity (kPa)	
0	0
100	0
200	0
300	0
400	0
500	0
600	0
700	0
800	0
900	0
1000	0
1100	0
1200	0
1300	0
1400	0
1500	0
1600	0
1700	0
1800	0
1900	0
2000	0
2100	0
2200	0
2300	0

Refusal

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 308 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1500	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 19.0mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

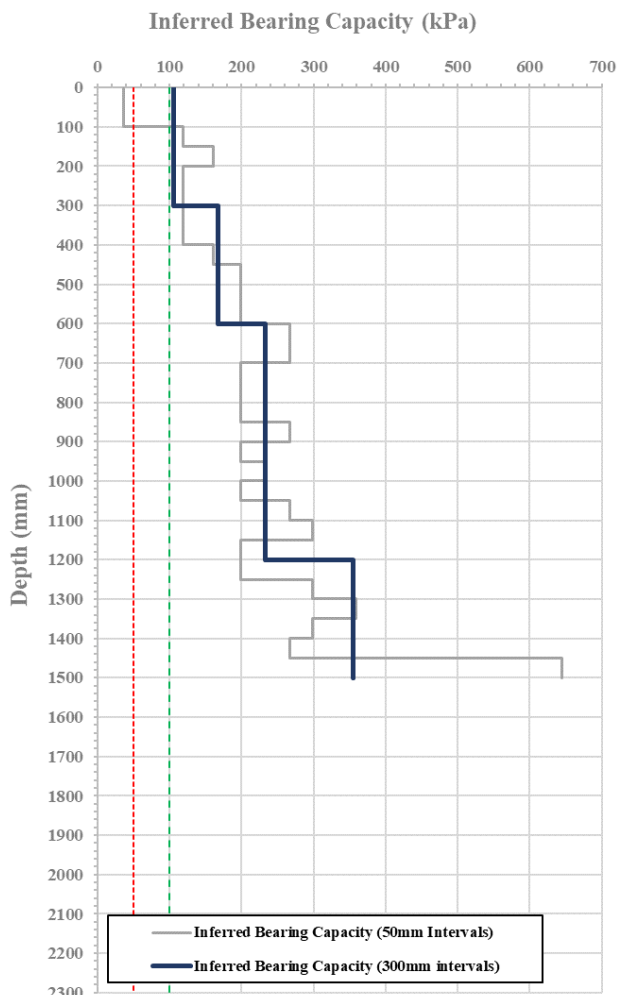
P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 309 – See Page 127 for location plan

Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	10	36
50 - 100	100.0	1		36
100 - 150	25.0	5		119
150 - 200	16.7	4	19	160
200 - 250	25.0			119
250 - 300	25.0	4		119
300 - 350	25.0	4	30	119
350 - 400	25.0			119
400 - 450	16.7	7		53
450 - 500	12.5		198	
500 - 550	12.5	8	30	
550 - 600	12.5			198
600 - 650	8.3	12		30
650 - 700	8.3		267	
700 - 750	12.5	8	53	
750 - 800	12.5			198
800 - 850	12.5	10		30
850 - 900	8.3		267	
900 - 950	12.5	9	30	
950 - 1000	10.0			233
1000 - 1050	12.5	10		30
1050 - 1100	8.3		267	
1100 - 1150	7.1	11	53	
1150 - 1200	12.5			198
1200 - 1250	12.5	11		30
1250 - 1300	7.1		299	
1300 - 1350	5.6	16	53	
1350 - 1400	7.1			299
1400 - 1450	8.3	26		53
1450 - 1500	2.5		645	



Refusal

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 309 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1500	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 19.0mm; Sand, 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.

Note:

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



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



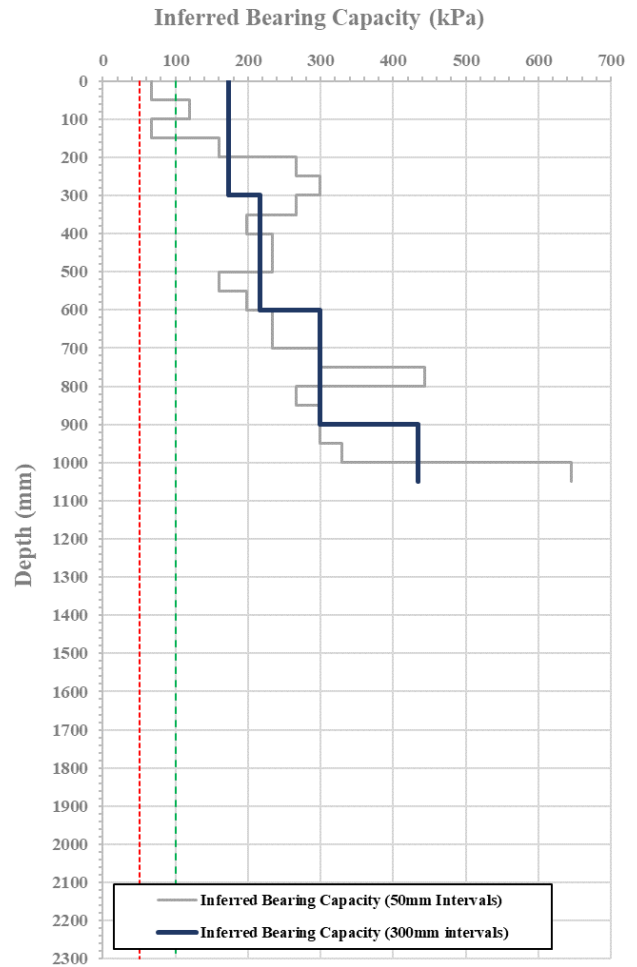
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 310 – See Page 127 for location plan					
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)	
		100 mm	300 mm		
0 - 50	50.0	3	20	68	
50 - 100	25.0			119	
100 - 150	50.0			68	
150 - 200	16.7	4		160	
200 - 250	8.3			267	
250 - 300	7.1			299	
300 - 350	8.3	13	27	267	
350 - 400	12.5			198	
400 - 450	10.0			233	
450 - 500	10.0	10	42	233	
500 - 550	16.7			160	
550 - 600	12.5			198	
600 - 650	10.0	7		70	233
650 - 700	10.0				233
700 - 750	7.1				299
750 - 800	4.2	19	≡ 70	444	
800 - 850	8.3			267	
850 - 900	7.1			299	
900 - 950	7.1	13	15	299	
950 - 1000	6.3			330	
1000 - 1050	2.5			-	645
Refusal					
<p>¹ 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.</p> <p>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.</p>					



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 310 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1450	Light brown Sandy GRAVEL with minor silt. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



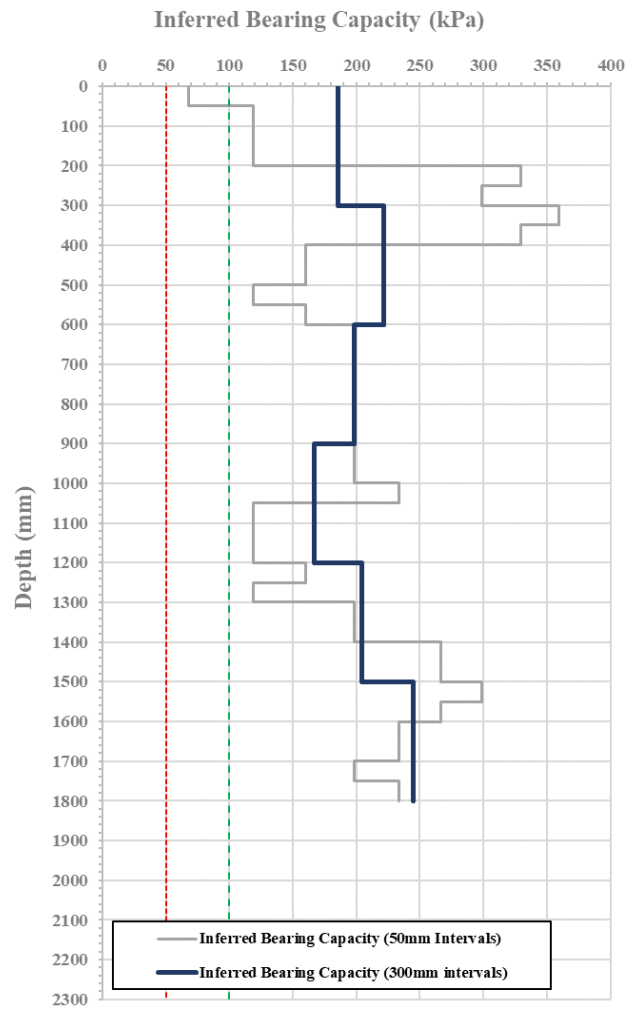
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 311 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	22	68
50 - 100	25.0	3		119
100 - 150	25.0	4		119
150 - 200	25.0	4	28	119
200 - 250	6.3	15		330
250 - 300	7.1	15		299
300 - 350	5.6	17	24	359
350 - 400	6.3	17		330
400 - 450	16.7	6		160
450 - 500	16.7	6	19	160
500 - 550	25.0	5		119
550 - 600	16.7	5		160
600 - 650	12.5	8	25	198
650 - 700	12.5	8		198
700 - 750	12.5	8		198
750 - 800	12.5	8	32	198
800 - 850	12.5	8		198
850 - 900	12.5	8		198
900 - 950	12.5	8	10	198
950 - 1000	12.5	8		198
1000 - 1050	10.0	7		233
1050 - 1100	25.0	7	9	119
1100 - 1150	25.0	4		119
1150 - 1200	25.0	4		119
1200 - 1250	16.7	5	13	160
1250 - 1300	25.0	5		119
1300 - 1350	12.5	8		198
1350 - 1400	12.5	8	12	198
1400 - 1450	8.3	12		267
1450 - 1500	8.3	12		267
1500 - 1550	7.1	13	10	299
1550 - 1600	8.3	13		267
1600 - 1650	10.0	10		233
1650 - 1700	10.0	10	9	233
1700 - 1750	12.5	9		198
1750 - 1800	10.0	9		233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 311 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1600 *	Light brown Gravelly Silty SAND. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

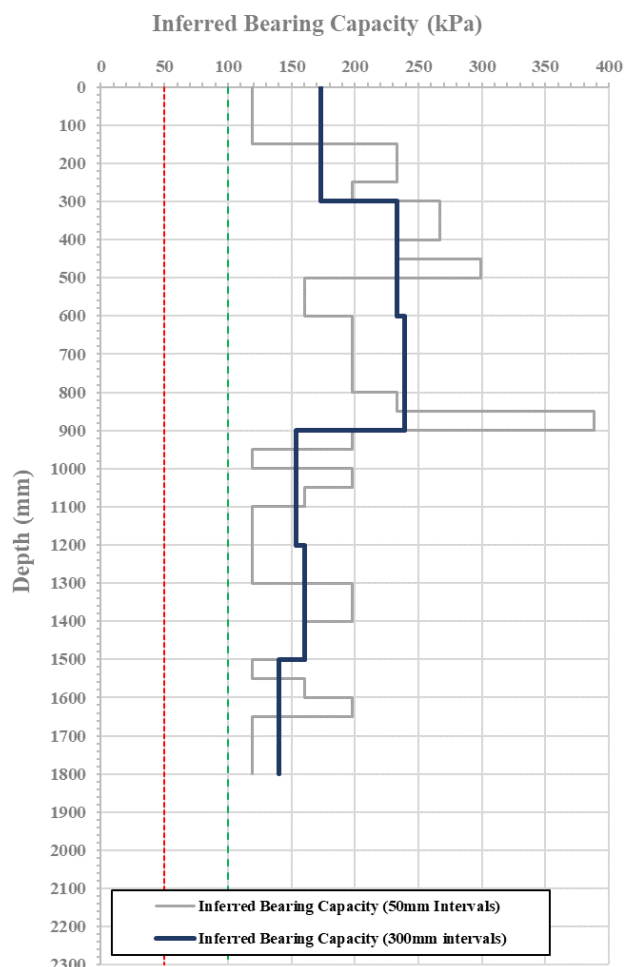


TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 312 – See Page 127 for location plan

Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	20	119
50 - 100	25.0	4		119
100 - 150	25.0	7		119
150 - 200	10.0	7		233
200 - 250	10.0	9	30	233
250 - 300	12.5			198
300 - 350	8.3	12	31	267
350 - 400	8.3			267
400 - 450	10.0			233
450 - 500	7.1			299
500 - 550	16.7	6	17	160
550 - 600	16.7			160
600 - 650	12.5	8	18	198
650 - 700	12.5			198
700 - 750	12.5			198
750 - 800	12.5			198
800 - 850	10.0	15	15	233
850 - 900	5.0			388
900 - 950	12.5	6	15	198
950 - 1000	25.0			119
1000 - 1050	12.5			198
1050 - 1100	16.7			160
1100 - 1150	25.0	4	18	119
1150 - 1200	25.0			119
1200 - 1250	25.0	4	15	119
1250 - 1300	25.0			119
1300 - 1350	12.5			198
1350 - 1400	12.5			198
1400 - 1450	16.7	8	15	160
1450 - 1500	16.7			160
1500 - 1550	25.0	5	15	119
1550 - 1600	16.7			160
1600 - 1650	12.5	6	15	198
1650 - 1700	25.0			119
1700 - 1750	25.0			119
1750 - 1800	25.0			4



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 312 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1200	Brown Gravelly SAND with minor silt. Dry. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, fine to coarse; Silt, non-plastic.
1200 to 1500 *	Light grey SAND with trace of / minor silt. Dry. Loose. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



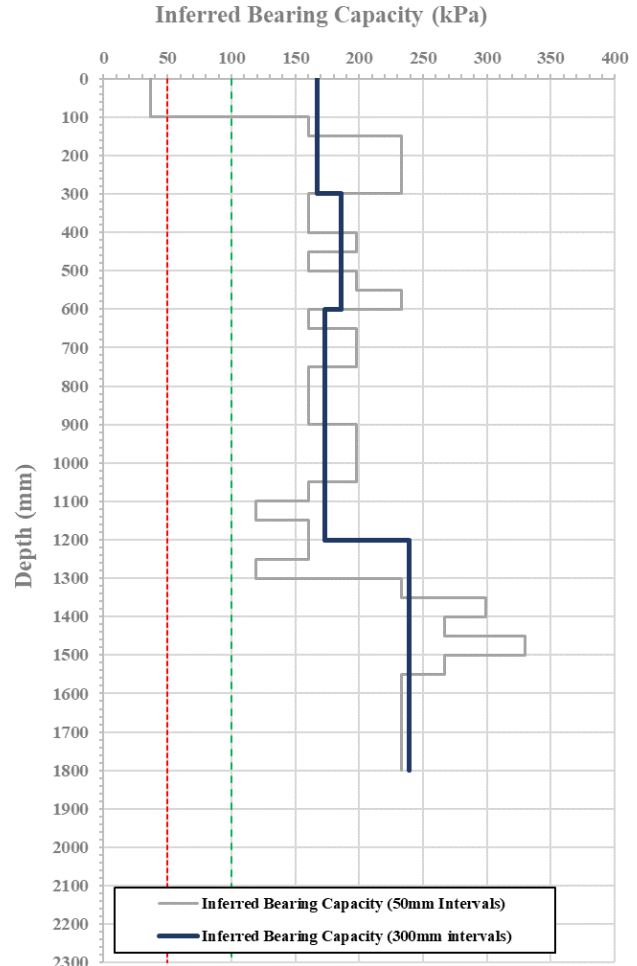
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 313 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	19	36
50 - 100	100.0	1		36
100 - 150	16.7	8		160
150 - 200	10.0	10	22	233
200 - 250	10.0			233
250 - 300	10.0			233
300 - 350	16.7	6	20	160
350 - 400	16.7	7		160
400 - 450	12.5	7		198
450 - 500	16.7	9	31	160
500 - 550	12.5			198
550 - 600	10.0			233
600 - 650	16.7	7	20	160
650 - 700	12.5	7		198
700 - 750	12.5	7		160
750 - 800	16.7	6	20	160
800 - 850	16.7			160
850 - 900	16.7			160
900 - 950	12.5	8	31	198
950 - 1000	12.5			198
1000 - 1050	12.5			198
1050 - 1100	16.7	7	31	160
1100 - 1150	25.0	5		119
1150 - 1200	16.7			160
1200 - 1250	16.7		5	31
1250 - 1300	25.0	119		
1300 - 1350	10.0	233		
1350 - 1400	7.1	12	31	299
1400 - 1450	8.3	14		267
1450 - 1500	6.3	14		330
1500 - 1550	8.3	11	31	267
1550 - 1600	10.0			233
1600 - 1650	10.0			233
1650 - 1700	10.0	10	31	233
1700 - 1750	10.0	10		233
1750 - 1800	10.0			233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 313 - See Page 127 for location plan	
Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1500 *	Brown Gravelly SAND with minor silt. Dry. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 314 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	8	36
50 - 100	100.0	1		36
100 - 150	50.0	2		68
150 - 200	50.0	2	18	68
200 - 250	16.7	5		160
250 - 300	25.0	5		119
300 - 350	16.7	7	6.3	160
350 - 400	12.5	7		198
400 - 450	16.7	7		160
450 - 500	12.5	7	3.7	198
500 - 550	50.0	4		68
550 - 600	16.7	4		160
600 - 650	50.0	3	27	68
650 - 700	25.0	3		119
700 - 750	50.0	3		68
750 - 800	25.0	3	38	119
800 - 850	300.0	0.33		14
850 - 900	300.0	0.33		14
900 - 950	300.0	0.33	15	14
950 - 1000	300.0	0.33		14
1000 - 1050	300.0	0.33		14
1050 - 1100	300.0	0.33	11	14
1100 - 1150	50.0	3		68
1150 - 1200	25.0	3		119
1200 - 1250	12.5	8	11	198
1250 - 1300	12.5	8		198
1300 - 1350	12.5	8		198
1350 - 1400	12.5	8	12	198
1400 - 1450	10.0	11		233
1450 - 1500	8.3	11		267
1500 - 1550	10.0	11	12	233
1550 - 1600	8.3	11		267
1600 - 1650	8.3	12		267
1650 - 1700	8.3	12	15	267
1700 - 1750	6.3	15		330
1750 - 1800	7.1	15		299

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 314 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1300	Light grey / brown Silty SAND with minor gravel. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 26.5mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1500 *	Light grey / brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

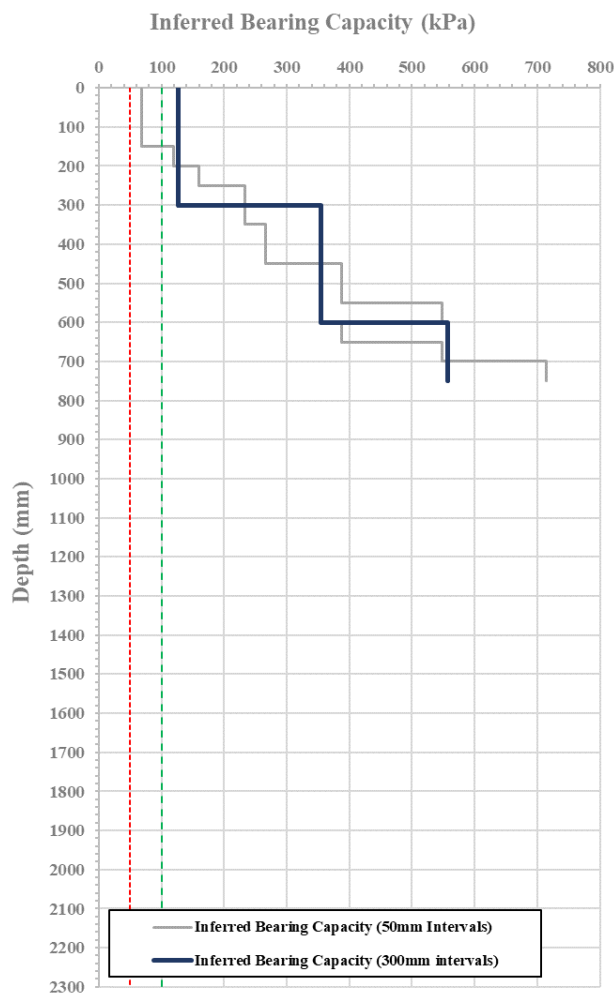
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 315 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	13	68
50 - 100	50.0			68
100 - 150	50.0	3		68
150 - 200	25.0		8	119
200 - 250	16.7			160
250 - 300	10.0			233
300 - 350	10.0		11	233
350 - 400	8.3			267
400 - 450	8.3			267
450 - 500	5.0		16	388
500 - 550	5.0			388
550 - 600	3.1			548
600 - 650	5.0		26	388
650 - 700	3.1			548
700 - 750	2.2	-		≅ 98
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 315 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1550	Brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

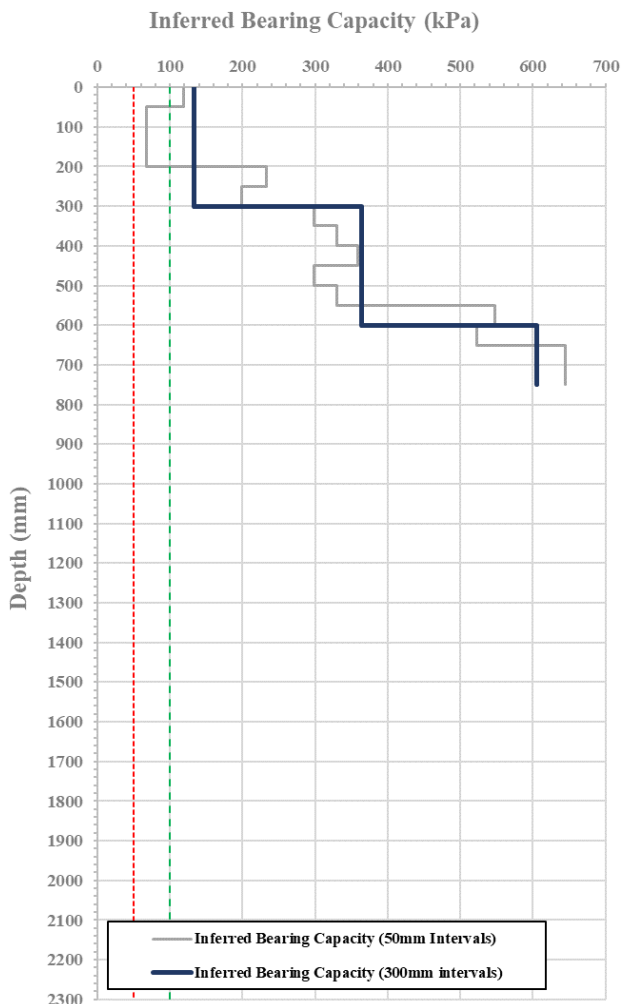
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 316 – See Page 127 for location plan					
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)	
		100 mm	300 mm		
0 - 50	25.0	3	14	119	
50 - 100	50.0			68	
100 - 150	50.0			68	
150 - 200	50.0	2		55	68
200 - 250	10.0				233
250 - 300	12.5	9			110
300 - 350	7.1		299		
350 - 400	6.3		330		
400 - 450	5.6	16	110		
450 - 500	7.1			299	
500 - 550	6.3	24		110	
550 - 600	3.1				548
600 - 650	3.3				523
650 - 700	2.5	35			110
700 - 750	2.5		645		
Refusal					
<p>¹ 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.</p> <p>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.</p>					



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 316 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1500	Brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

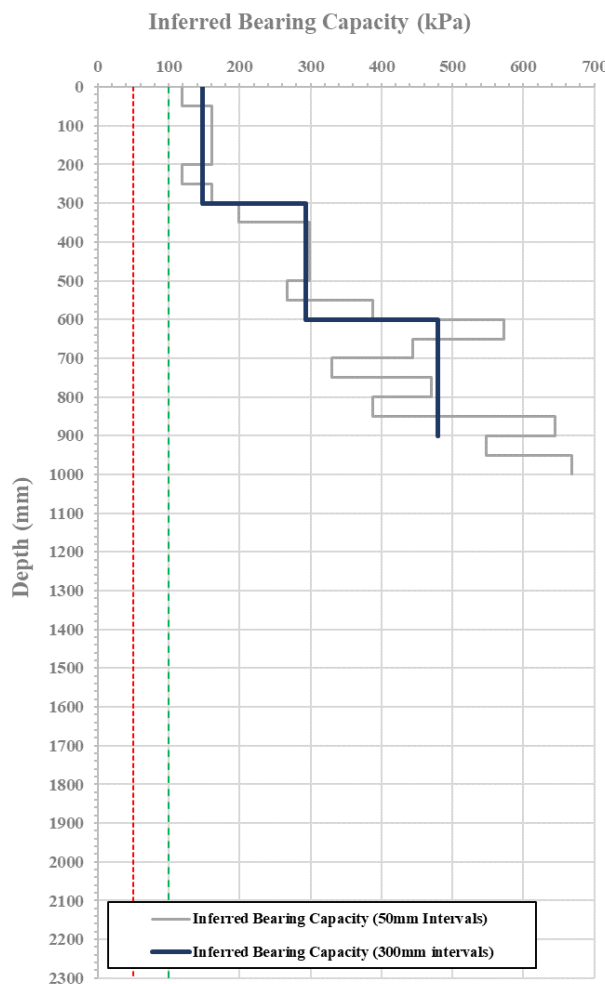
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooping Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 317 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	16	119
50 - 100	16.7	6		160
100 - 150	16.7			160
150 - 200	16.7	5		119
200 - 250	25.0			160
250 - 300	16.7	11	198	
300 - 350	12.5		299	
350 - 400	7.1		41	299
400 - 450	7.1	299		
450 - 500	7.1	16	267	
500 - 550	8.3		388	
550 - 600	5.0	29	573	
600 - 650	2.9		444	
650 - 700	4.2	21	330	
700 - 750	6.3		471	
750 - 800	3.8		30	388
800 - 850	5.0	645		
850 - 900	2.5	37	548	
900 - 950	3.1		669	
950 - 1000	2.4	-		
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 317 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1500	Brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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.

Note:

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



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



Central Testing Services

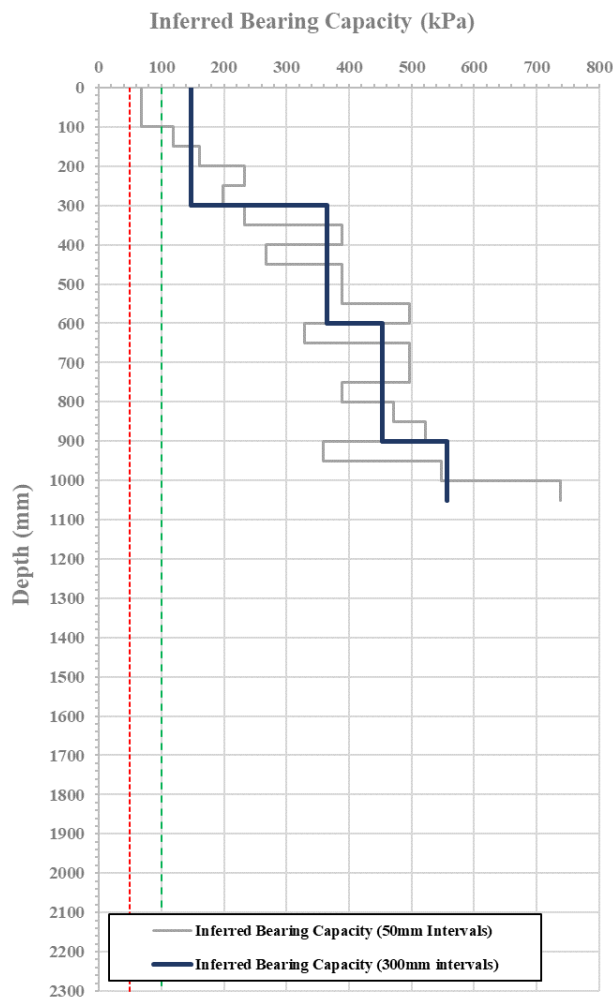
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 318 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	16	68
50 - 100	50.0	2		68
100 - 150	25.0	5		119
150 - 200	16.7	5		160
200 - 250	10.0	9		233
250 - 300	12.5	9	198	
300 - 350	10.0	15	55	233
350 - 400	5.0	15		388
400 - 450	8.3	16		267
450 - 500	5.0	16		388
500 - 550	5.0	24		388
550 - 600	3.6	24		497
600 - 650	6.3	22		330
650 - 700	3.6	22		497
700 - 750	3.6	24		497
750 - 800	5.0	24		388
800 - 850	3.8	28	98	471
850 - 900	3.3	28		523
900 - 950	5.6	25		359
950 - 1000	3.1	25		548
1000 - 1050	2.1	-		738
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 318 - See Page 127 for location plan	
Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1500	Brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 319 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2		68
50 - 100	50.0			68
100 - 150	16.7	10	44	160
150 - 200	7.1			299
200 - 250	2.5	32		645
250 - 300	4.2			444
300 - 350	7.1	12		299
350 - 400	10.0			233
400 - 450	5.6	19	44	359
450 - 500	5.0			388
500 - 550	10.0	13		233
550 - 600	6.3			330
600 - 650	8.3	14		267
650 - 700	6.3			330
700 - 750	7.1	15	39	299
750 - 800	6.3			330
800 - 850	10.0	10		233
850 - 900	10.0			233
900 - 950	7.1	14		299
950 - 1000	7.1			299
1000 - 1050	12.5	9	32	198
1050 - 1100	10.0			233
1100 - 1150	10.0	9		233
1150 - 1200	12.5			198
1200 - 1250	10.0	8		233
1250 - 1300	16.7			160
1300 - 1350	8.3	11	33	267
1350 - 1400	10.0			233
1400 - 1450	8.3	14		267
1450 - 1500	6.3			330
1500 - 1550	8.3	14		267
1550 - 1600	6.3			330
1600 - 1650	8.3	12	40	267
1650 - 1700	8.3			267
1700 - 1750	8.3	14		267
1750 - 1800	6.3			330

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 319 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1450 *	Grey / brown Gravelly SAND with trace of / minor silt and trace of cobbles. Moist. Tightly packed. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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."



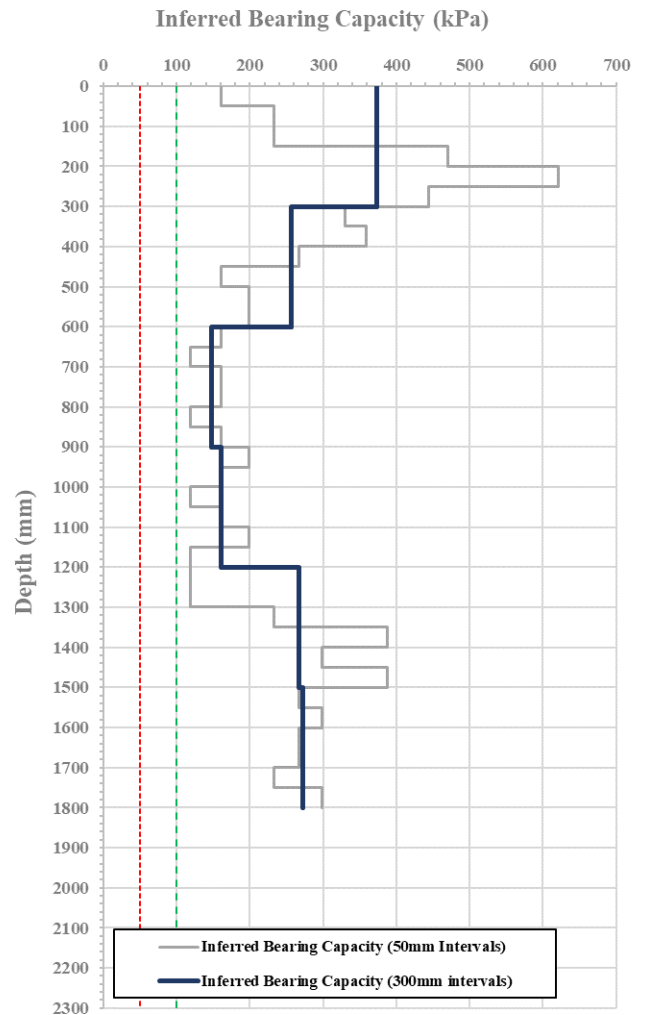
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 320 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	8	57	160
50 - 100	10.0	8		233
100 - 150	10.0	18		233
150 - 200	3.8	31	34	471
200 - 250	2.6			622
250 - 300	4.2	17	16	444
300 - 350	6.3			330
350 - 400	5.6			359
400 - 450	8.3	9	18	267
450 - 500	16.7			160
500 - 550	12.5	8	36	198
550 - 600	12.5			198
600 - 650	16.7	5	18	160
650 - 700	25.0			119
700 - 750	16.7	6	36	160
750 - 800	16.7			160
800 - 850	25.0	5	37	119
850 - 900	16.7			160
900 - 950	12.5	7	18	198
950 - 1000	16.7			160
1000 - 1050	25.0	5	36	119
1050 - 1100	16.7			160
1100 - 1150	12.5	6	37	198
1150 - 1200	25.0			119
1200 - 1250	25.0	4	36	119
1250 - 1300	25.0			119
1300 - 1350	10.0	15	37	233
1350 - 1400	5.0			388
1400 - 1450	7.1	17	37	299
1450 - 1500	5.0			388
1500 - 1550	8.3	13	37	267
1550 - 1600	7.1			299
1600 - 1650	8.3	12	37	267
1650 - 1700	8.3			267
1700 - 1750	10.0	12	37	233
1750 - 1800	7.1			299



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 320 - See Page 127 for location plan	
Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1300 *	Grey / brown Gravelly SAND with trace of / minor silt and trace of cobbles. Dry. Loose. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

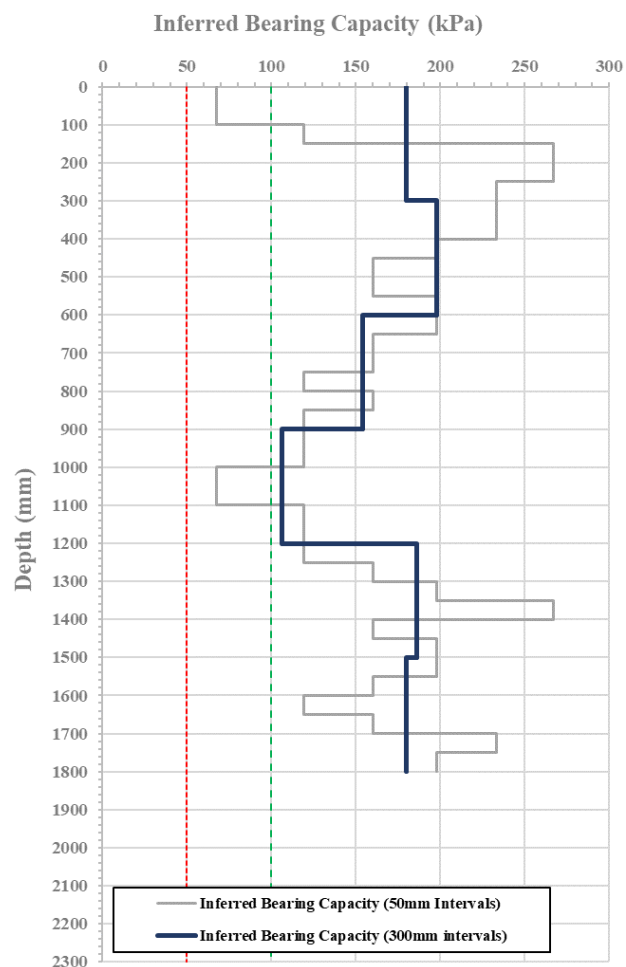
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 321 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	21	68
50 - 100	50.0			68
100 - 150	25.0	8		119
150 - 200	8.3	11		267
200 - 250	8.3			267
250 - 300	10.0			233
300 - 350	10.0	10		233
350 - 400	10.0			233
400 - 450	12.5		7	198
450 - 500	16.7	24		160
500 - 550	16.7			160
550 - 600	12.5		7	198
600 - 650	12.5	7		198
650 - 700	16.7			160
700 - 750	16.7		5	160
750 - 800	25.0	17		119
800 - 850	16.7			160
850 - 900	25.0		5	119
900 - 950	25.0	4		119
950 - 1000	25.0			119
1000 - 1050	50.0		2	68
1050 - 1100	50.0	10		68
1100 - 1150	25.0			119
1150 - 1200	25.0		4	119
1200 - 1250	25.0	5		119
1250 - 1300	16.7			160
1300 - 1350	12.5		10	198
1350 - 1400	8.3	22		267
1400 - 1450	16.7			160
1450 - 1500	12.5		7	198
1500 - 1550	12.5	7		198
1550 - 1600	16.7			160
1600 - 1650	25.0		5	119
1650 - 1700	16.7	21		160
1700 - 1750	10.0			233
1750 - 1800	12.5		9	198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 321 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1450 *	Grey / brown Gravelly SAND with trace of / minor silt and trace of cobbles. Dry. Loose. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



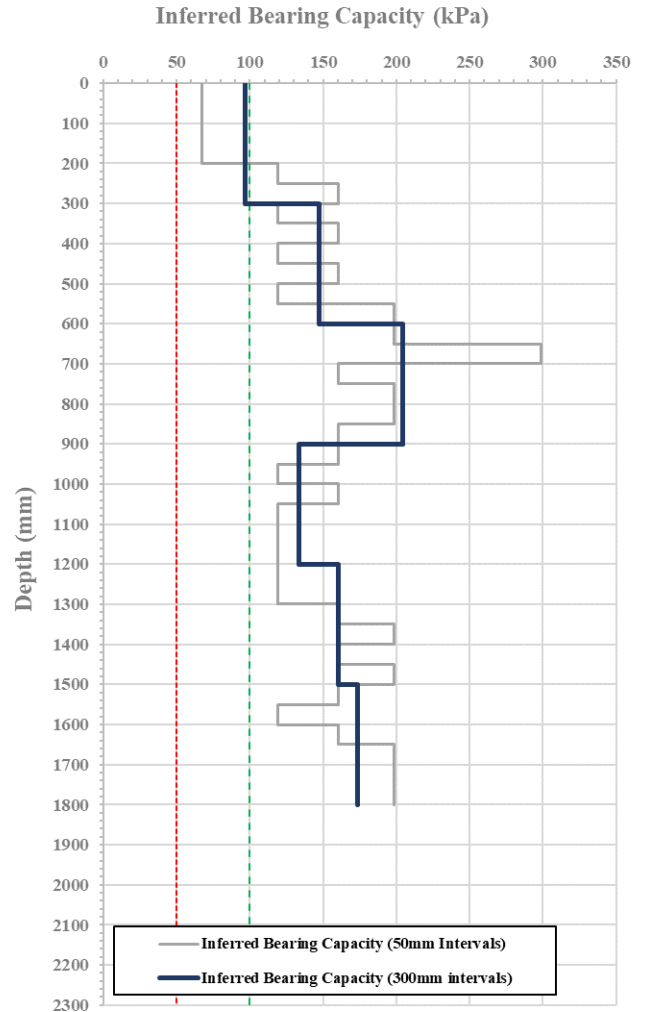
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 322 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	9	68
50 - 100	50.0	2		68
100 - 150	50.0	2		68
150 - 200	50.0	2	16	68
200 - 250	25.0	5		119
250 - 300	16.7	5		160
300 - 350	25.0	5	25	119
350 - 400	16.7	5		160
400 - 450	25.0	5		119
450 - 500	16.7	5	14	160
500 - 550	25.0	6		119
550 - 600	12.5	6		198
600 - 650	12.5	11	18	198
650 - 700	7.1	11		299
700 - 750	16.7	7		160
750 - 800	12.5	7	20	198
800 - 850	12.5	7		198
850 - 900	16.7	7		160
900 - 950	16.7	5	14	160
950 - 1000	25.0	5		119
1000 - 1050	16.7	5		160
1050 - 1100	25.0	5	18	119
1100 - 1150	25.0	4		119
1150 - 1200	25.0	4		119
1200 - 1250	25.0	4	20	119
1250 - 1300	25.0	4		119
1300 - 1350	16.7	7		160
1350 - 1400	12.5	7	20	198
1400 - 1450	16.7	7		160
1450 - 1500	12.5	7		198
1500 - 1550	16.7	5	20	160
1550 - 1600	25.0	5		119
1600 - 1650	16.7	7		160
1650 - 1700	12.5	7	20	198
1700 - 1750	12.5	8		198
1750 - 1800	12.5	8		198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 322 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1550 *	Grey / brown Gravelly SAND with trace of / minor silt and trace of cobbles. Dry. Loose. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 323 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	27	68
50 - 100	50.0			68
100 - 150	7.1	15		299
150 - 200	6.3	10		330
200 - 250	8.3		267	
250 - 300	12.5		198	
300 - 350	16.7	6	20	160
350 - 400	16.7			160
400 - 450	16.7	6		160
450 - 500	16.7	8		198
500 - 550	12.5		198	
550 - 600	12.5		198	
600 - 650	16.7	6	21	160
650 - 700	16.7			160
700 - 750	12.5	8		198
750 - 800	12.5	7		198
800 - 850	16.7		160	
850 - 900	12.5		198	
900 - 950	16.7	6	12	160
950 - 1000	16.7			160
1000 - 1050	50.0	3		68
1050 - 1100	25.0	3		119
1100 - 1150	25.0		119	
1150 - 1200	50.0		68	
1200 - 1250	25.0	4	25	119
1250 - 1300	25.0			119
1300 - 1350	25.0	11		119
1350 - 1400	5.6	10		359
1400 - 1450	8.3		267	
1450 - 1500	12.5		198	
1500 - 1550	12.5	8	27	198
1550 - 1600	12.5			198
1600 - 1650	25.0	6		119
1650 - 1700	12.5	13		198
1700 - 1750	8.3		267	
1750 - 1800	7.1		299	

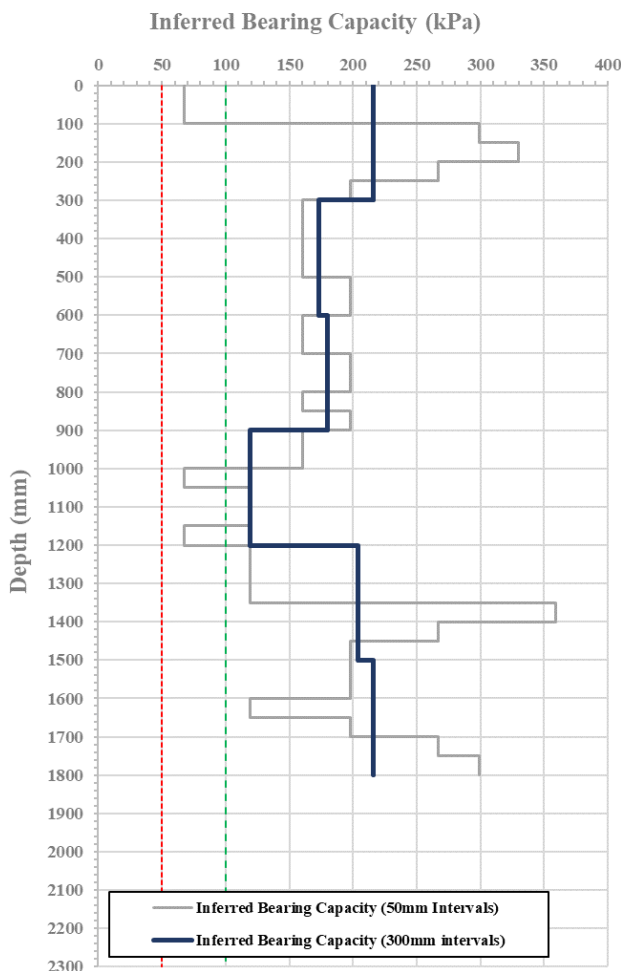
¹ Bearing capacity results stated above have been inferred from Fig 2 – Determination of allowable bearing pressure under small structures, M.J. Stockwell. The results are relative to the ground conditions at the time of test and will be heavily influenced if significant gravel fraction is present. The 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 323 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1600 *	Grey / brown Gravelly SAND with trace of / minor silt and trace of cobbles. Moist. Tightly packed. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



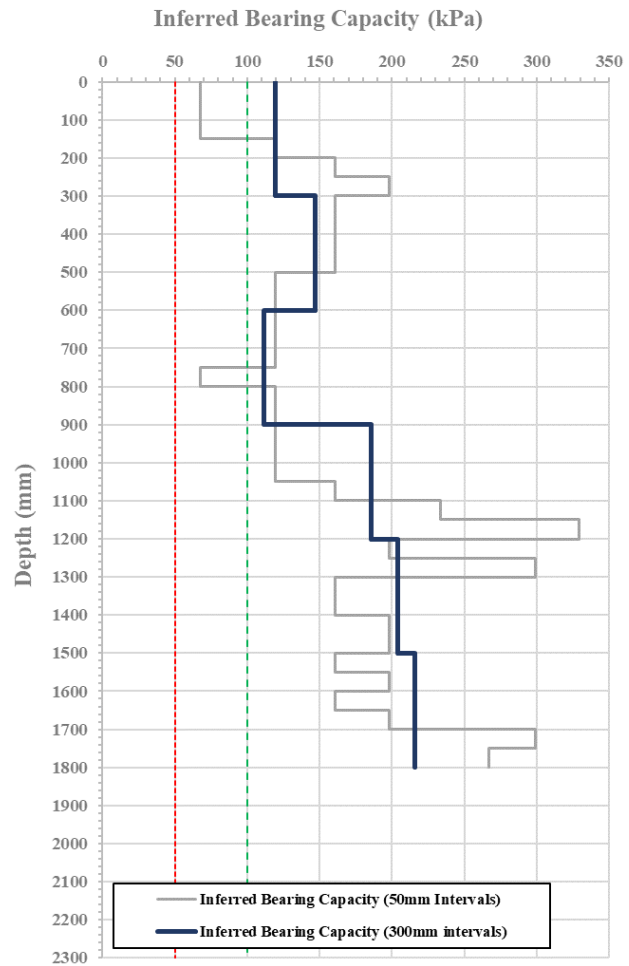
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 324 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	12	68
50 - 100	50.0			68
100 - 150	50.0	3		68
150 - 200	25.0		16	119
200 - 250	16.7	7		160
250 - 300	12.5			198
300 - 350	16.7	6	11	160
350 - 400	16.7			160
400 - 450	16.7	6		160
450 - 500	16.7		22	160
500 - 550	25.0	4		119
550 - 600	25.0			119
600 - 650	25.0	4	25	119
650 - 700	25.0			119
700 - 750	25.0	3		119
750 - 800	50.0		27	68
800 - 850	25.0	4		119
850 - 900	25.0			119
900 - 950	25.0	4	13	119
950 - 1000	25.0			119
1000 - 1050	25.0	5		119
1050 - 1100	16.7		11	160
1100 - 1150	10.0	13		233
1150 - 1200	6.3			330
1200 - 1250	12.5	11	25	198
1250 - 1300	7.1			299
1300 - 1350	16.7	6		160
1350 - 1400	16.7		8	160
1400 - 1450	12.5	8		198
1450 - 1500	12.5			198
1500 - 1550	16.7	7	7	160
1550 - 1600	12.5			198
1600 - 1650	16.7	7		160
1650 - 1700	12.5		13	198
1700 - 1750	7.1	13		299
1750 - 1800	8.3			267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 324 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400 *	Grey / brown Gravelly SAND with trace of / minor silt and trace of cobbles. Dry / Moist. Tightly packed. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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



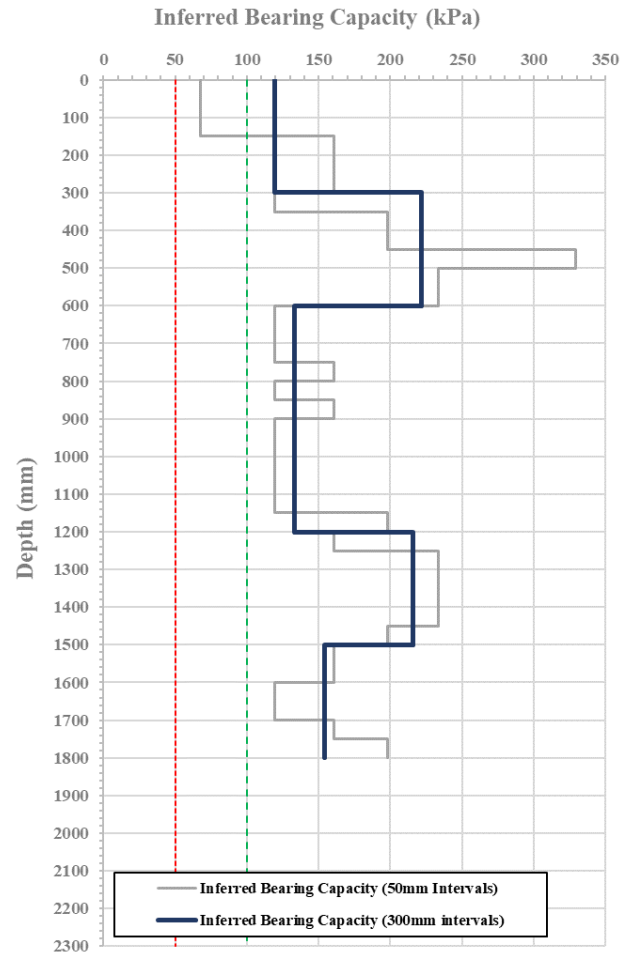
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 325 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	12	68
50 - 100	50.0	2		68
100 - 150	50.0	4		68
150 - 200	16.7	4		160
200 - 250	16.7	6	28	160
250 - 300	16.7			160
300 - 350	25.0			119
350 - 400	12.5	6	14	198
400 - 450	12.5	12		198
450 - 500	6.3			330
500 - 550	10.0	10		233
550 - 600	10.0		233	
600 - 650	25.0	4	14	119
650 - 700	25.0	4		119
700 - 750	25.0			119
750 - 800	16.7	5		160
800 - 850	25.0	5	27	119
850 - 900	16.7			160
900 - 950	25.0	4	17	119
950 - 1000	25.0			119
1000 - 1050	25.0			119
1050 - 1100	25.0			119
1100 - 1150	25.0	6	17	119
1150 - 1200	12.5			198
1200 - 1250	16.7	8	17	160
1250 - 1300	10.0			233
1300 - 1350	10.0			233
1350 - 1400	10.0	10	17	233
1400 - 1450	10.0			233
1450 - 1500	12.5	9	198	
1500 - 1550	16.7	6	17	160
1550 - 1600	16.7			160
1600 - 1650	25.0	4	17	119
1650 - 1700	25.0			119
1700 - 1750	16.7	7	17	160
1750 - 1800	12.5			198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 325 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1300 *	Brown Gravelly Silty SAND. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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



Central Testing Services

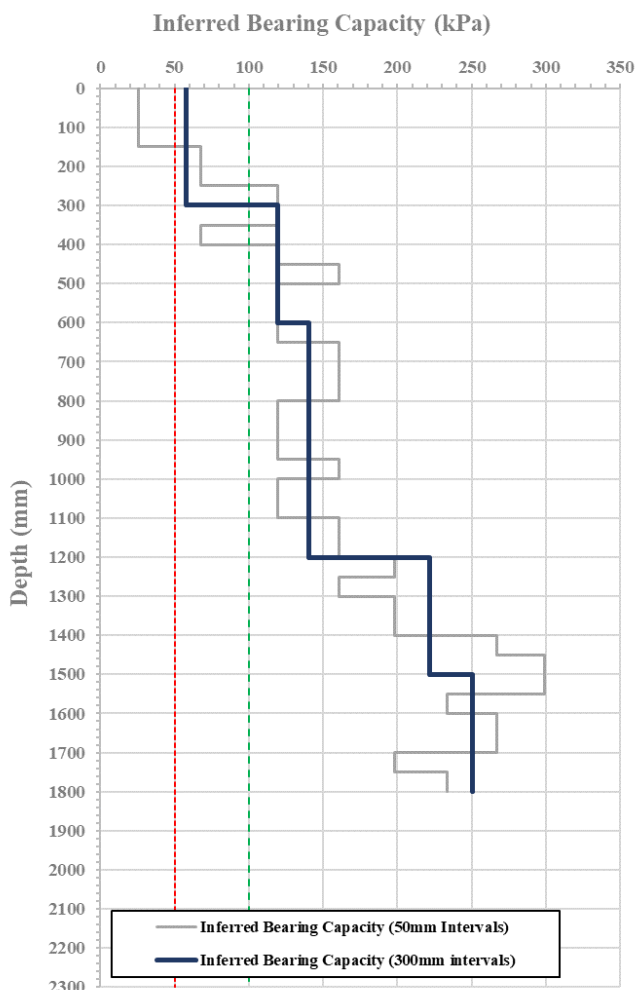
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 326 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	150.0	0.7	5	25
50 - 100	150.0			25
100 - 150	150.0			25
150 - 200	50.0	1.3		68
200 - 250	50.0			68
250 - 300	25.0	3	119	
300 - 350	25.0	3	119	
350 - 400	50.0	3	68	
400 - 450	25.0	5	12	119
450 - 500	16.7	5		160
500 - 550	25.0	4	119	
550 - 600	25.0	4	119	
600 - 650	25.0	5	15	119
650 - 700	16.7	5		160
700 - 750	16.7	6		160
750 - 800	16.7	6	160	
800 - 850	25.0	4	119	
850 - 900	25.0	4	119	
900 - 950	25.0	5	15	119
950 - 1000	16.7	5		160
1000 - 1050	25.0	4	119	
1050 - 1100	25.0	4	119	
1100 - 1150	16.7	6	160	
1150 - 1200	16.7	6	160	
1200 - 1250	12.5	7	28	198
1250 - 1300	16.7	7		160
1300 - 1350	12.5	8		198
1350 - 1400	12.5	8	198	
1400 - 1450	8.3	13	267	
1450 - 1500	7.1	13	299	
1500 - 1550	7.1	12	299	
1550 - 1600	10.0	12	233	
1600 - 1650	8.3	12	267	
1650 - 1700	8.3	12	267	
1700 - 1750	12.5	9	198	
1750 - 1800	10.0	9	233	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 326 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1500 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



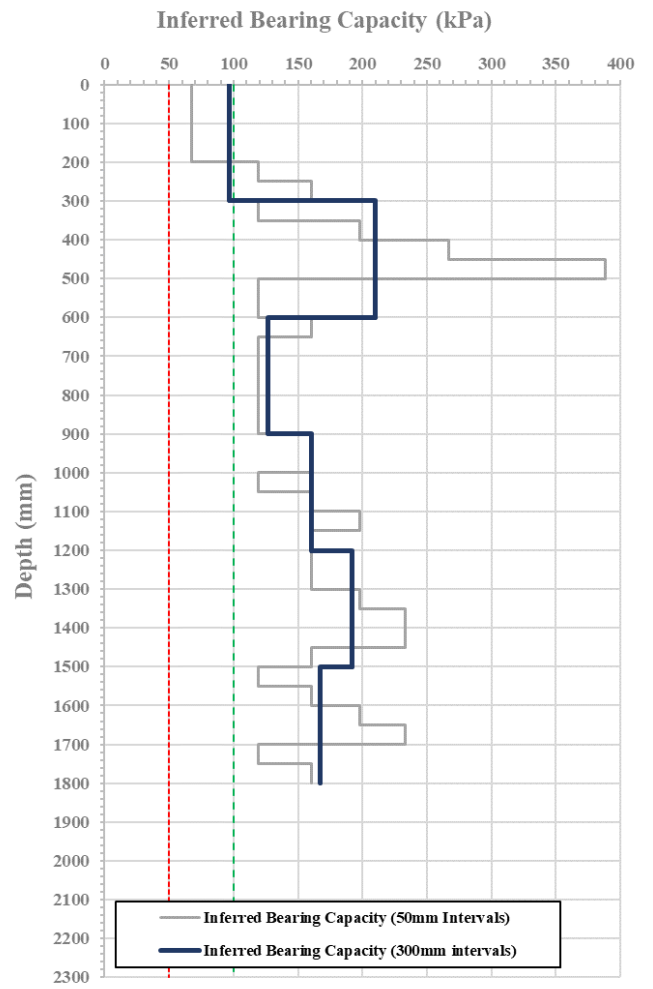
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 327 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	9	68
50 - 100	50.0			68
100 - 150	50.0	2		68
150 - 200	50.0		5	68
200 - 250	25.0			119
250 - 300	16.7		6	160
300 - 350	25.0			119
350 - 400	12.5			198
400 - 450	8.3		16	267
450 - 500	5.0			388
500 - 550	25.0		4	119
550 - 600	25.0			119
600 - 650	16.7		5	160
650 - 700	25.0			119
700 - 750	25.0		13	119
750 - 800	25.0			119
800 - 850	25.0			119
850 - 900	25.0		4	119
900 - 950	16.7			119
950 - 1000	16.7		6	160
1000 - 1050	25.0			160
1050 - 1100	16.7		5	119
1100 - 1150	12.5			160
1150 - 1200	16.7		7	198
1200 - 1250	16.7			160
1250 - 1300	16.7		6	160
1300 - 1350	12.5			160
1350 - 1400	10.0		9	198
1400 - 1450	10.0			233
1450 - 1500	16.7		8	233
1500 - 1550	25.0			160
1550 - 1600	16.7		5	160
1600 - 1650	12.5			119
1650 - 1700	10.0		9	198
1700 - 1750	25.0			233
1750 - 1800	16.7		5	119
				160



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 327 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1000 *	Grey / brown Gravelly SAND with trace of minor silt. Dry / Moist. Tightly packed. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



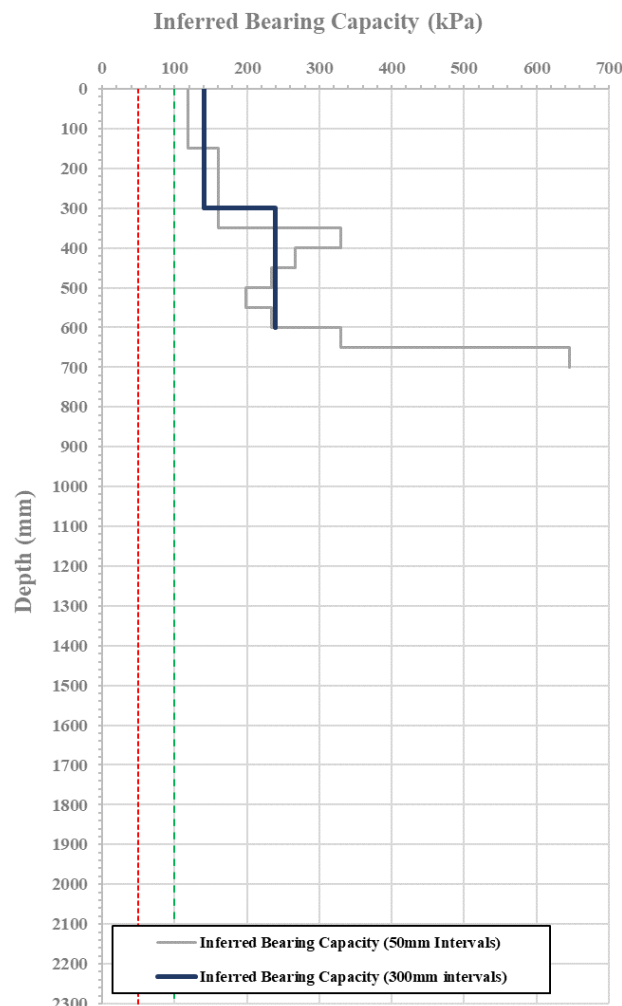
Test results indicated as not accredited are outside the scope of the laboratory's accreditation



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 328 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	15	119
50 - 100	25.0			119
100 - 150	25.0			119
150 - 200	16.7	5		160
200 - 250	16.7			160
250 - 300	16.7			160
300 - 350	16.7	6	31	160
350 - 400	6.3			330
400 - 450	8.3			267
450 - 500	10.0	11	233	
500 - 550	12.5		198	
550 - 600	10.0		233	
600 - 650	6.3	28	330	
650 - 700	2.5		645	
Refusal				
<p>¹ 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.</p> <p>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.</p>				



FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 328 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1000 *	Brown Silty Sandy GRAVEL with trace of cobbles. Dry. Tightly packed. Gravel / cobbles, angular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



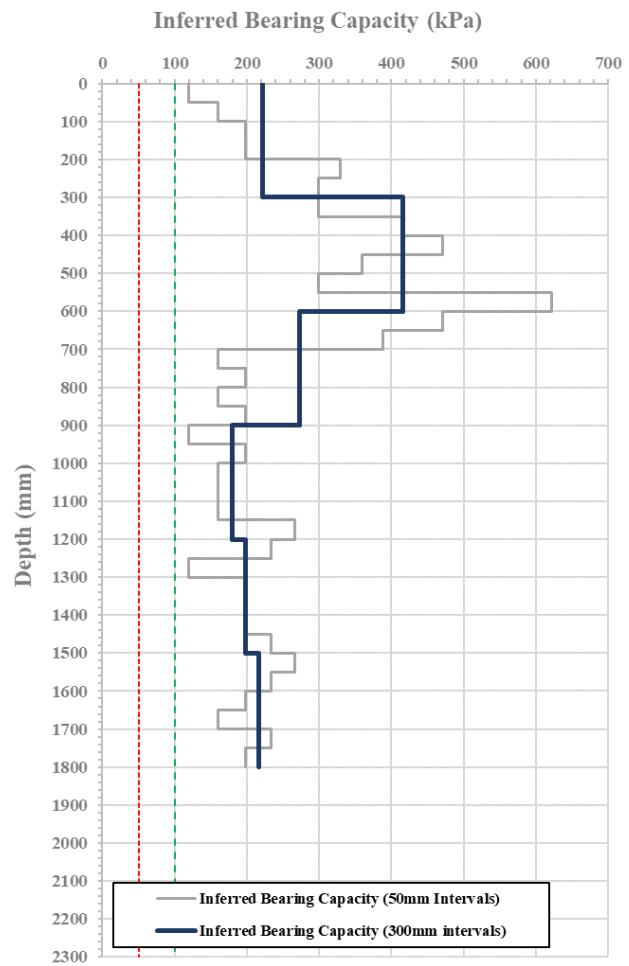
Test results indicated as not accredited are outside the scope of the laboratory's accreditation



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 329 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	28	119
50 - 100	16.7	5		160
100 - 150	12.5	8		198
150 - 200	12.5	8	66	198
200 - 250	6.3	15		330
250 - 300	7.1	15	66	299
300 - 350	7.1	18		299
350 - 400	4.5	18	66	416
400 - 450	3.8	22		471
450 - 500	5.6	22	66	359
500 - 550	7.1	26		299
550 - 600	2.6	26	66	622
600 - 650	3.8	23		471
650 - 700	5.0	23	37	388
700 - 750	16.7	7		160
750 - 800	12.5	7	37	198
800 - 850	16.7	7		160
850 - 900	12.5	7	21	198
900 - 950	25.0	6		119
950 - 1000	12.5	6	21	198
1000 - 1050	16.7	6		160
1050 - 1100	16.7	6	21	160
1100 - 1150	16.7	9		160
1150 - 1200	8.3	9	24	267
1200 - 1250	10.0	7		233
1250 - 1300	25.0	7	24	119
1300 - 1350	12.5	8		198
1350 - 1400	12.5	8	24	198
1400 - 1450	12.5	9		198
1450 - 1500	10.0	9	27	233
1500 - 1550	8.3	11		267
1550 - 1600	10.0	11	27	233
1600 - 1650	12.5	7		198
1650 - 1700	16.7	7	27	160
1700 - 1750	10.0	9		233
1750 - 1800	12.5	9	27	198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 329 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1000 *	Brown Silty Sandy GRAVEL with trace of cobbles. Dry. Tightly packed. Gravel / cobbles, angular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

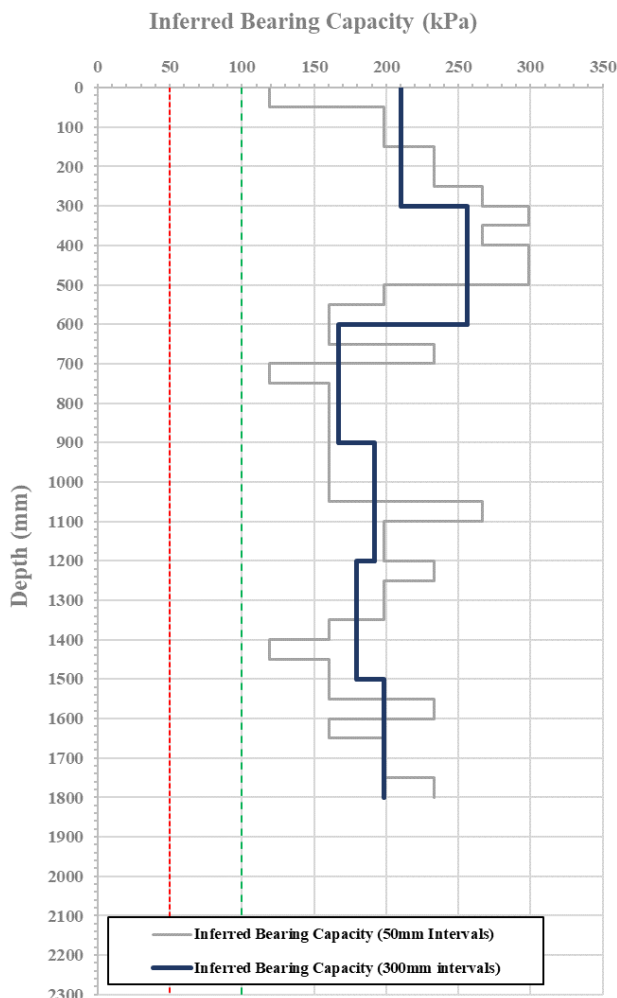
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 330 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	6	26	119
50 - 100	12.5	6		198
100 - 150	12.5	9		198
150 - 200	10.0	11	34	233
200 - 250	10.0			233
250 - 300	8.3	13	19	267
300 - 350	7.1			299
350 - 400	8.3			267
400 - 450	7.1	14	23	299
450 - 500	7.1			299
500 - 550	12.5	7	21	198
550 - 600	16.7			160
600 - 650	16.7	8	24	160
650 - 700	10.0			233
700 - 750	25.0	5	19	119
750 - 800	16.7			160
800 - 850	16.7	6	23	160
850 - 900	16.7			160
900 - 950	16.7	6	21	160
950 - 1000	16.7			160
1000 - 1050	16.7	9	24	160
1050 - 1100	8.3			267
1100 - 1150	12.5	8	21	198
1150 - 1200	12.5			198
1200 - 1250	10.0	9	21	233
1250 - 1300	12.5			198
1300 - 1350	12.5	7	24	198
1350 - 1400	16.7			160
1400 - 1450	25.0	5	21	119
1450 - 1500	16.7			160
1500 - 1550	16.7	8	24	160
1550 - 1600	10.0			233
1600 - 1650	16.7	7	21	160
1650 - 1700	12.5			198
1700 - 1750	12.5	9	24	198
1750 - 1800	10.0			233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 330 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1000	Grey / brown Gravelly SAND with trace of silt. Dry. Tightly packed. Gravel, subangular to subrounded, maximum particle size 75.0mm; Sand, fine to coarse; Silt, non-plastic.
1000 to 1300 *	Brown Silty Sandy GRAVEL with trace of silt. Dry. Tightly packed. Gravel / cobbles, angular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

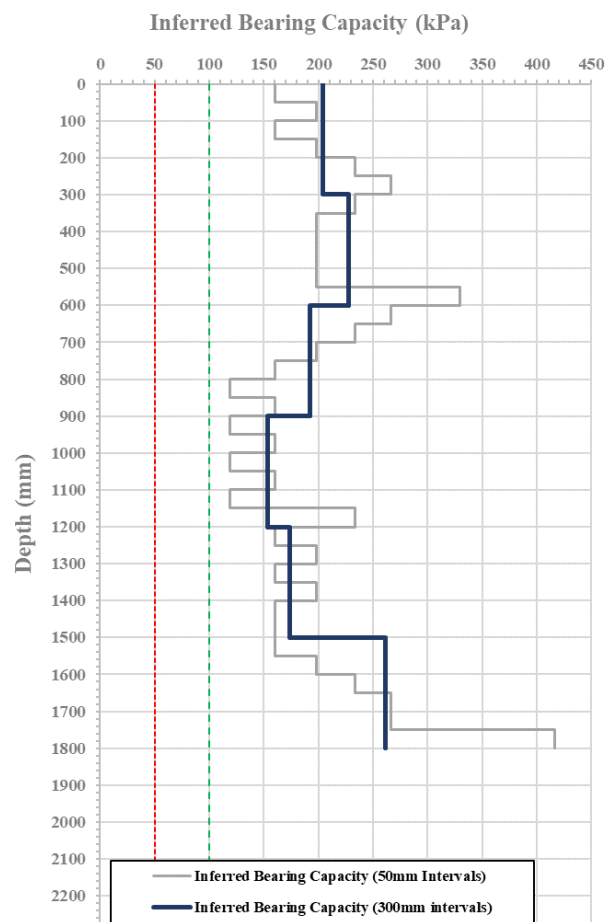
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooping Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 331 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	7	25	160
50 - 100	12.5	7		198
100 - 150	16.7			160
150 - 200	12.5	198		
200 - 250	10.0	11		233
250 - 300	8.3		267	
300 - 350	10.0	9	233	
350 - 400	12.5		198	
400 - 450	12.5		8	198
450 - 500	12.5	198		
500 - 550	12.5	12	198	
550 - 600	6.3		330	
600 - 650	8.3	11	267	
650 - 700	10.0		233	
700 - 750	12.5	7	198	
750 - 800	16.7		23	160
800 - 850	25.0			119
850 - 900	16.7	5	160	
900 - 950	25.0		119	
950 - 1000	16.7	5	160	
1000 - 1050	25.0		17	119
1050 - 1100	16.7	160		
1100 - 1150	25.0	7		119
1150 - 1200	10.0		233	
1200 - 1250	16.7	7	160	
1250 - 1300	12.5		20	198
1300 - 1350	16.7	160		
1350 - 1400	12.5	198		
1400 - 1450	16.7	7	160	
1450 - 1500	16.7		160	
1500 - 1550	16.7	6	160	
1550 - 1600	12.5		160	
1600 - 1650	10.0	7	198	
1650 - 1700	8.3		11	233
1700 - 1750	8.3	267		
1750 - 1800	4.5	17		267
				416



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 331 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1250 *	Grey / brown Gravelly SAND with trace of / minor silt. Dry. Tightly packed. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

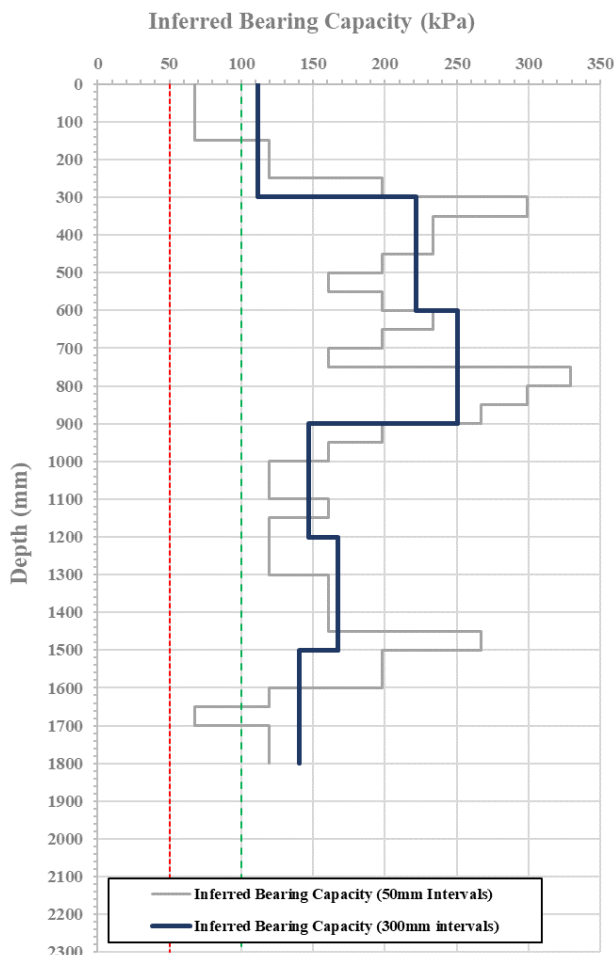
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 332 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	11	68
50 - 100	50.0	2		68
100 - 150	50.0	3		68
150 - 200	25.0	3	28	119
200 - 250	25.0	6		119
250 - 300	12.5	6		198
300 - 350	7.1	12	33	299
350 - 400	10.0	12		233
400 - 450	10.0	9		233
450 - 500	12.5	9	16	198
500 - 550	16.7	7		160
550 - 600	12.5	7		198
600 - 650	10.0	9	19	233
650 - 700	12.5	9		198
700 - 750	16.7	11		160
750 - 800	6.3	11	15	330
800 - 850	7.1	13		299
850 - 900	8.3	13		267
900 - 950	12.5	7	15	198
950 - 1000	16.7	7		160
1000 - 1050	25.0	4		119
1050 - 1100	25.0	4	15	119
1100 - 1150	16.7	5		160
1150 - 1200	25.0	5		119
1200 - 1250	25.0	4	15	119
1250 - 1300	25.0	4		119
1300 - 1350	16.7	6		160
1350 - 1400	16.7	6	15	160
1400 - 1450	16.7	9		160
1450 - 1500	8.3	9		267
1500 - 1550	12.5	8	15	198
1550 - 1600	12.5	8		198
1600 - 1650	25.0	3		119
1650 - 1700	50.0	3	15	68
1700 - 1750	25.0	4		119
1750 - 1800	25.0	4		119



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 332 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1500 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

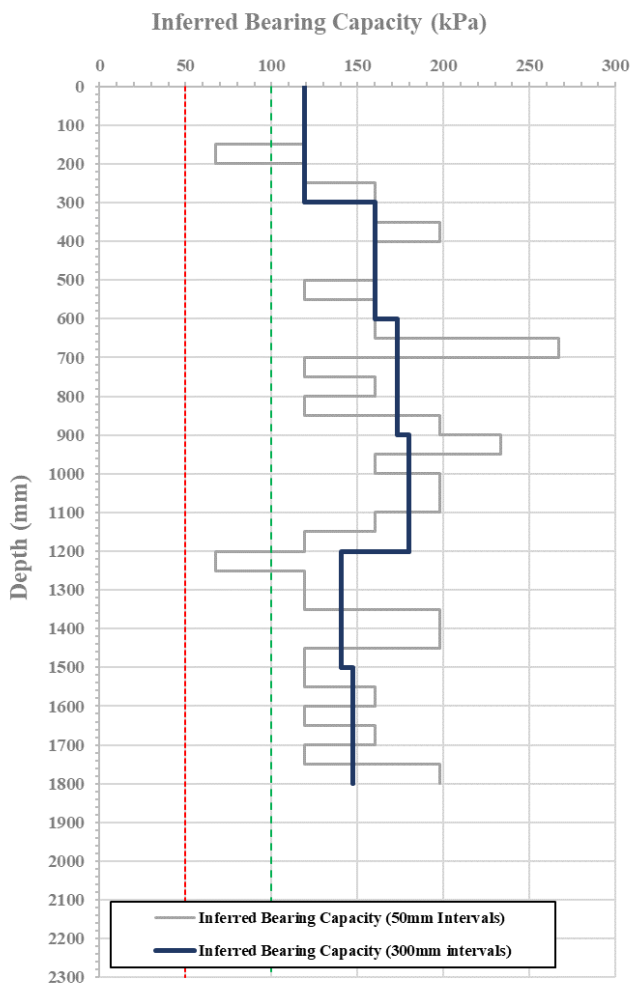
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 333 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	12	119
50 - 100	25.0	4		119
100 - 150	25.0	3		119
150 - 200	50.0	3	18	68
200 - 250	25.0	5		119
250 - 300	16.7	5		160
300 - 350	16.7	7	20	160
350 - 400	12.5	7		198
400 - 450	16.7	6		160
450 - 500	16.7	6	21	160
500 - 550	25.0	5		119
550 - 600	16.7	5		160
600 - 650	16.7	9	15	160
650 - 700	8.3	9		267
700 - 750	25.0	5		119
750 - 800	16.7	5	16	160
800 - 850	25.0	6		119
850 - 900	12.5	6		198
900 - 950	10.0	8	15	233
950 - 1000	16.7	8		160
1000 - 1050	12.5	8		198
1050 - 1100	12.5	8	16	198
1100 - 1150	16.7	5		160
1150 - 1200	25.0	5		119
1200 - 1250	50.0	3	15	68
1250 - 1300	25.0	3		119
1300 - 1350	25.0	6		119
1350 - 1400	12.5	6	16	198
1400 - 1450	12.5	6		198
1450 - 1500	25.0	6		119
1500 - 1550	25.0	5	16	119
1550 - 1600	16.7	5		160
1600 - 1650	25.0	5		119
1650 - 1700	16.7	5	16	160
1700 - 1750	25.0	6		119
1750 - 1800	12.5	6		198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 333 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1100	Brown Silty Sandy GRAVEL with trace of cobbles. Dry. Loose. Gravel / cobbles, subangular to subrounded, maximum particle size 75.0mm; Sand, fine to coarse; Silt, non-plastic.
1100 to 1300 *	Grey / brown SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

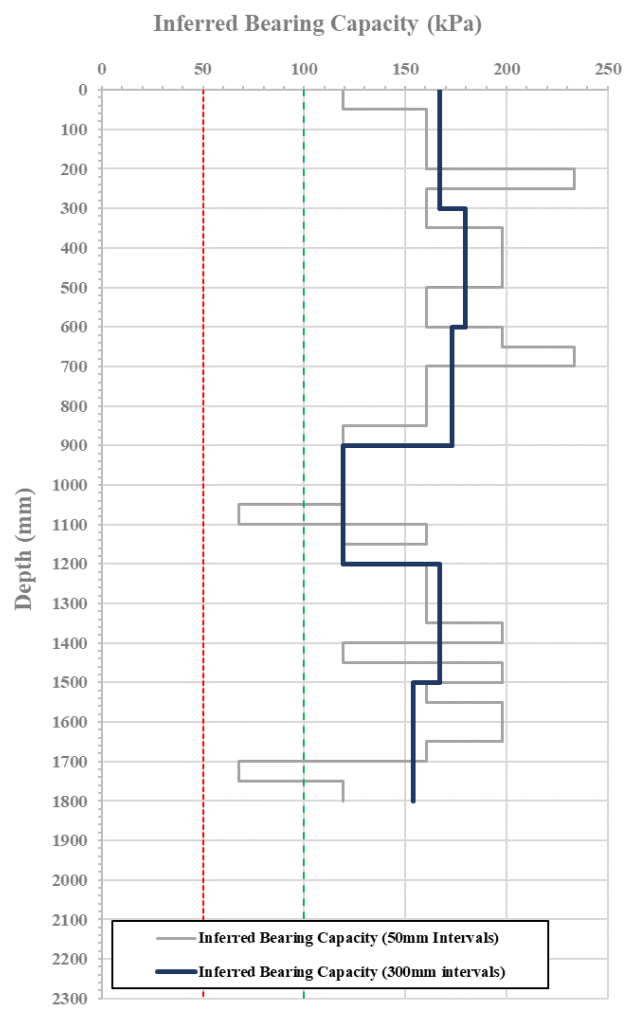
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 334 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	19	119
50 - 100	16.7	5		160
100 - 150	16.7	6		160
150 - 200	16.7	6		160
200 - 250	10.0	8	21	233
250 - 300	16.7	8		160
300 - 350	16.7	7	20	160
350 - 400	12.5	7		198
400 - 450	12.5	8		198
450 - 500	12.5	8		198
500 - 550	16.7	6	12	160
550 - 600	16.7	6		160
600 - 650	12.5	9		198
650 - 700	10.0	9		233
700 - 750	16.7	6	19	160
750 - 800	16.7	6		160
800 - 850	16.7	5		160
850 - 900	25.0	5		119
900 - 950	25.0	4	17	119
950 - 1000	25.0	4		119
1000 - 1050	25.0	3		119
1050 - 1100	50.0	3		68
1100 - 1150	16.7	5	19	160
1150 - 1200	25.0	5		119
1200 - 1250	16.7	6		160
1250 - 1300	16.7	6		160
1300 - 1350	16.7	7	17	160
1350 - 1400	12.5	7		198
1400 - 1450	25.0	6		119
1450 - 1500	12.5	6		198
1500 - 1550	16.7	7	17	160
1550 - 1600	12.5	7		198
1600 - 1650	12.5	7		198
1650 - 1700	16.7	7		160
1700 - 1750	50.0	3	17	68
1750 - 1800	25.0	3		119



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 334 - See Page 127 for location plan	
Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 600 *	Brown Silty Sandy GRAVEL with trace of cobbles. Dry. Loose. Gravel, angular to subrounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



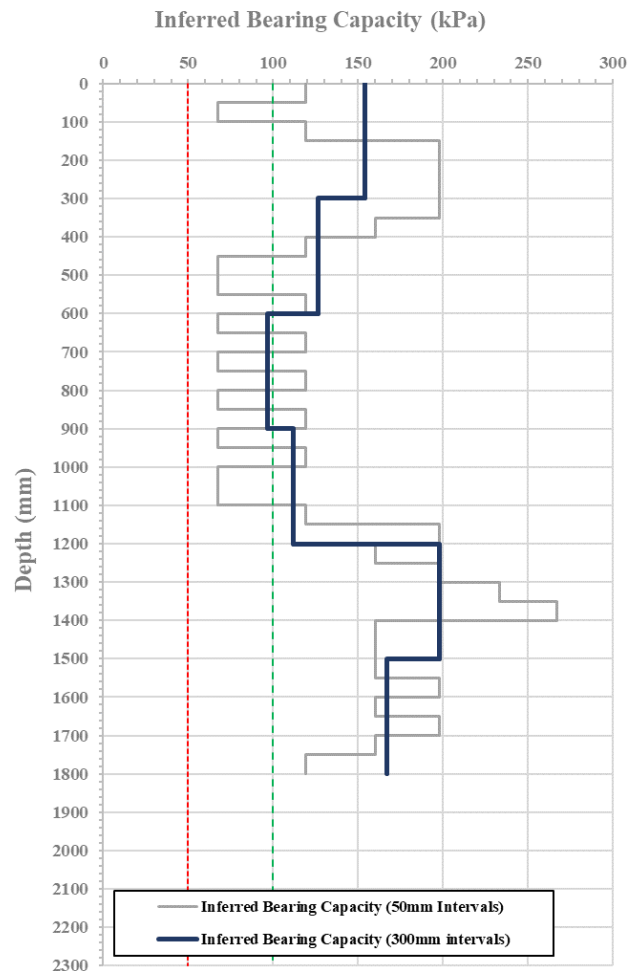
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 335 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	3	17	119
50 - 100	50.0	3		68
100 - 150	25.0	6		119
150 - 200	12.5	6	17	198
200 - 250	12.5	8		198
250 - 300	12.5	8		198
300 - 350	12.5	7	13	198
350 - 400	16.7	7		160
400 - 450	25.0	3		119
450 - 500	50.0	3	9	68
500 - 550	50.0	3		68
550 - 600	25.0	3		119
600 - 650	50.0	3	11	68
650 - 700	25.0	3		119
700 - 750	50.0	3		68
750 - 800	25.0	3	24	119
800 - 850	50.0	3		68
850 - 900	25.0	3		119
900 - 950	50.0	3	19	68
950 - 1000	25.0	3		119
1000 - 1050	50.0	2		68
1050 - 1100	50.0	6	19	68
1100 - 1150	25.0	6		119
1150 - 1200	12.5	7		198
1200 - 1250	16.7	7	19	160
1250 - 1300	12.5	7		198
1300 - 1350	10.0	11		233
1350 - 1400	8.3	11	19	267
1400 - 1450	16.7	6		160
1450 - 1500	16.7	6		160
1500 - 1550	16.7	7	19	160
1550 - 1600	12.5	7		198
1600 - 1650	16.7	7		160
1650 - 1700	12.5	7	19	198
1700 - 1750	16.7	5		160
1750 - 1800	25.0	5		119



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 335 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1300 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

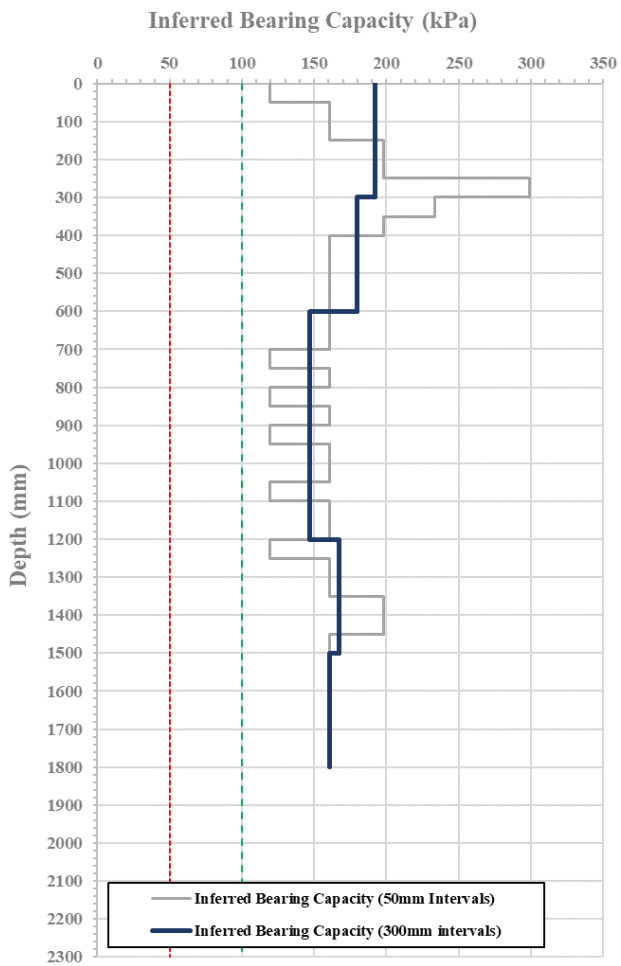
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 336 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	23	119
50 - 100	16.7	7		160
100 - 150	16.7			160
150 - 200	12.5	11		198
200 - 250	12.5			198
250 - 300	7.1	9	299	
300 - 350	10.0		233	
350 - 400	12.5		198	
400 - 450	16.7		21	160
450 - 500	16.7			160
500 - 550	16.7	160		
550 - 600	16.7	6	160	
600 - 650	16.7		160	
650 - 700	16.7	5	160	
700 - 750	25.0		119	
750 - 800	16.7		16	160
800 - 850	25.0			119
850 - 900	16.7		5	160
900 - 950	25.0	119		
950 - 1000	16.7	5	160	
1000 - 1050	16.7		160	
1050 - 1100	25.0		119	
1100 - 1150	16.7	6	160	
1150 - 1200	16.7		160	
1200 - 1250	25.0	5	119	
1250 - 1300	16.7		160	
1300 - 1350	16.7	7	160	
1350 - 1400	12.5		198	
1400 - 1450	12.5		198	
1450 - 1500	16.7	7	160	
1500 - 1550	16.7		160	
1550 - 1600	16.7	6	160	
1600 - 1650	16.7		160	
1650 - 1700	16.7		160	
1700 - 1750	16.7	6	160	
1750 - 1800	16.7		160	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 336 - See Page 127 for location plan

Depth (mm)	Description
0 to 250	Topsoil & vegetation (organic matter).
250 to 1450 *	Grey / brown Gravelly SAND with trace of / minor silt and trace of cobbles. Dry. Loose. Gravel / cobbles, subrounded to rounded, maximum particle size 75.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

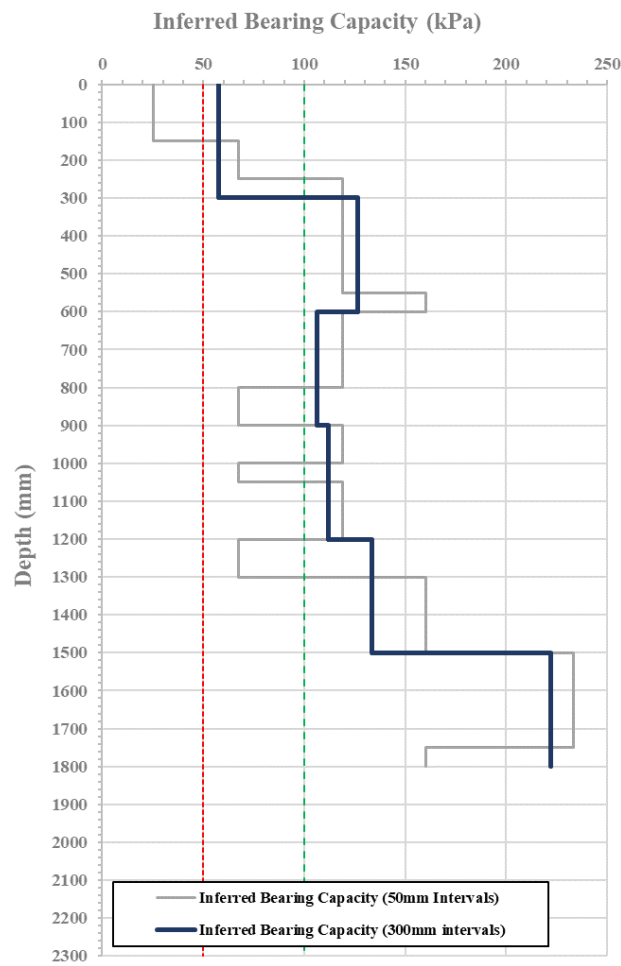
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 337 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	150.0	0.7	5	25
50 - 100	150.0			25
100 - 150	150.0			25
150 - 200	50.0	1.3	5	68
200 - 250	50.0			68
250 - 300	25.0	3	5	119
300 - 350	25.0			119
350 - 400	25.0	4	13	119
400 - 450	25.0			119
450 - 500	25.0	4	13	119
500 - 550	25.0			119
550 - 600	16.7	5	13	160
600 - 650	25.0			119
650 - 700	25.0	4	10	119
700 - 750	25.0			119
750 - 800	25.0	4	10	119
800 - 850	50.0			68
850 - 900	50.0	2	10	68
900 - 950	25.0			119
950 - 1000	25.0	4	11	119
1000 - 1050	50.0			68
1050 - 1100	25.0	3	11	119
1100 - 1150	25.0			119
1150 - 1200	25.0	4	11	119
1200 - 1250	50.0			68
1250 - 1300	50.0	2	14	68
1300 - 1350	16.7			160
1350 - 1400	16.7	6	14	160
1400 - 1450	16.7			160
1450 - 1500	16.7	6	14	160
1500 - 1550	10.0			233
1550 - 1600	10.0	10	28	233
1600 - 1650	10.0			233
1650 - 1700	10.0	10	28	233
1700 - 1750	10.0			233
1750 - 1800	16.7	8	28	233
				160



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 337 - See Page 127 for location plan	
Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1300 *	Grey / brown Gravelly SAND with trace of silt. Dry. Loose. Gravel, subrounded to rounded, maximum particle size 19.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

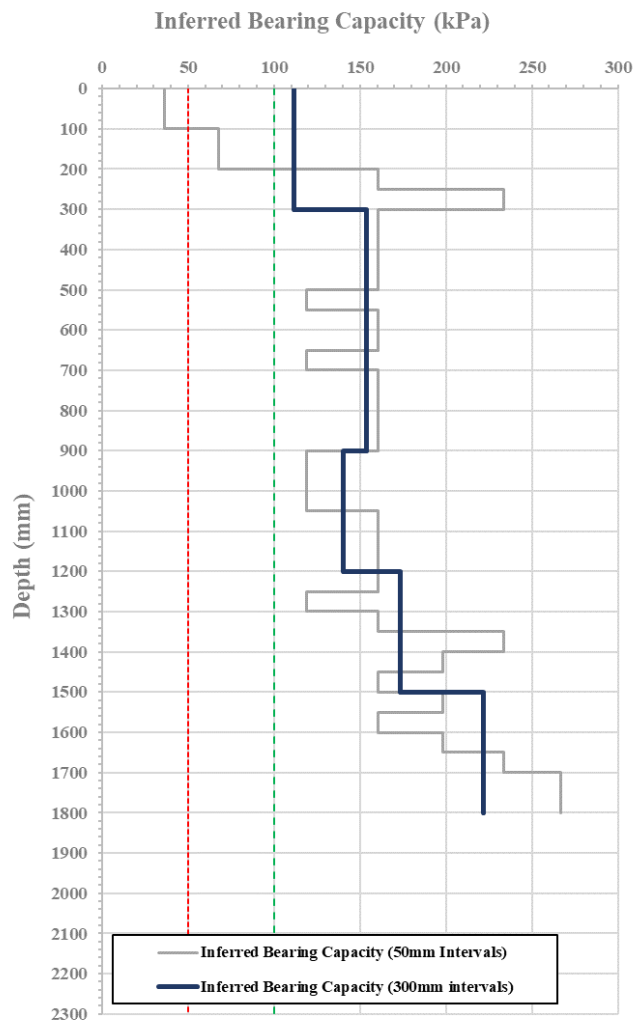


TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 338 – See Page 127 for location plan

Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	100.0	1	11	36
50 - 100	100.0	1		36
100 - 150	50.0	2		68
150 - 200	50.0	2	17	68
200 - 250	16.7	8		160
250 - 300	10.0	8		233
300 - 350	16.7	6	17	160
350 - 400	16.7	6		160
400 - 450	16.7	6		160
450 - 500	16.7	6	17	160
500 - 550	25.0	5		119
550 - 600	16.7	5		160
600 - 650	16.7	5	17	160
650 - 700	25.0	5		119
700 - 750	16.7	6		160
750 - 800	16.7	6	17	160
800 - 850	16.7	6		160
850 - 900	16.7	6		160
900 - 950	25.0	4	15	119
950 - 1000	25.0	4		119
1000 - 1050	25.0	5		119
1050 - 1100	16.7	5	15	160
1100 - 1150	16.7	6		160
1150 - 1200	16.7	6		160
1200 - 1250	16.7	5	20	160
1250 - 1300	25.0	5		119
1300 - 1350	16.7	8		160
1350 - 1400	10.0	8	20	233
1400 - 1450	12.5	7		198
1450 - 1500	16.7	7		160
1500 - 1550	12.5	7	28	198
1550 - 1600	16.7	7		160
1600 - 1650	12.5	9		198
1650 - 1700	10.0	9	28	233
1700 - 1750	8.3	12		267
1750 - 1800	8.3	12		267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 338 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1600 *	Grey / brown Gravelly SAND with trace of silt. Dry. Loose. Gravel, subrounded to rounded, maximum particle size 19.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

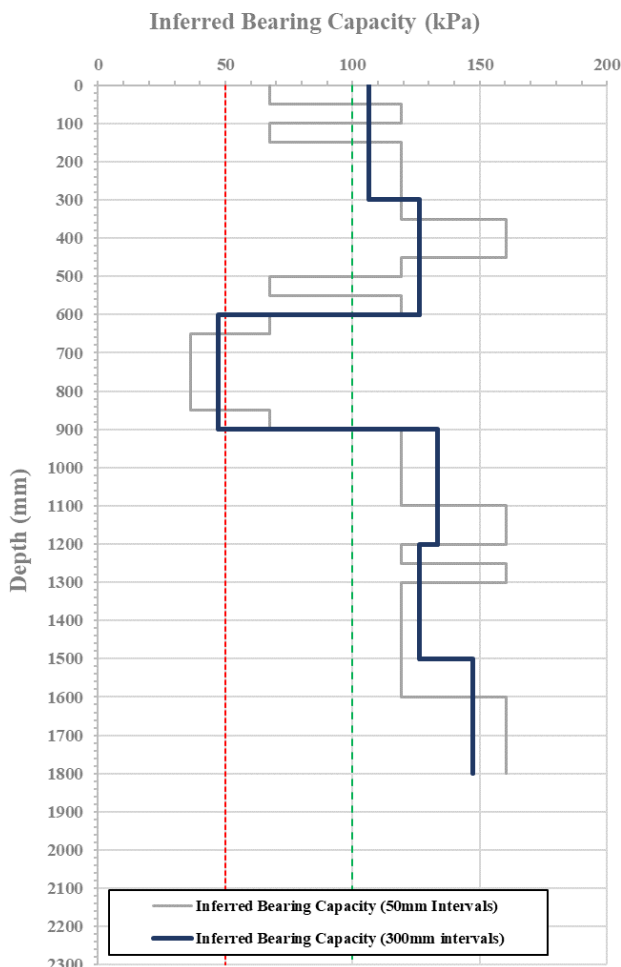
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 339 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	10	68
50 - 100	25.0	3		119
100 - 150	50.0	3		68
150 - 200	25.0	3		119
200 - 250	25.0	4	13	119
250 - 300	25.0	4		119
300 - 350	25.0	5		119
350 - 400	16.7	5		160
400 - 450	16.7	5	4	119
450 - 500	25.0	5		160
500 - 550	50.0	3		119
550 - 600	25.0	3		68
600 - 650	50.0	1.5	14	36
650 - 700	100.0			36
700 - 750	100.0			36
750 - 800	100.0			36
800 - 850	100.0	1.5	13	36
850 - 900	50.0			68
900 - 950	25.0			119
950 - 1000	25.0			119
1000 - 1050	25.0	4	16	119
1050 - 1100	25.0			119
1100 - 1150	16.7			160
1150 - 1200	16.7			160
1200 - 1250	25.0	5	13	119
1250 - 1300	16.7			160
1300 - 1350	25.0			119
1350 - 1400	25.0			119
1400 - 1450	25.0	4	16	119
1450 - 1500	25.0			119
1500 - 1550	25.0			119
1550 - 1600	25.0			119
1600 - 1650	16.7	6	16	160
1650 - 1700	16.7			160
1700 - 1750	16.7			160
1750 - 1800	16.7			160



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 339 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1500 *	Light yellowish brown Gravelly SAND with trace of / minor silt. Dry. Loose, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

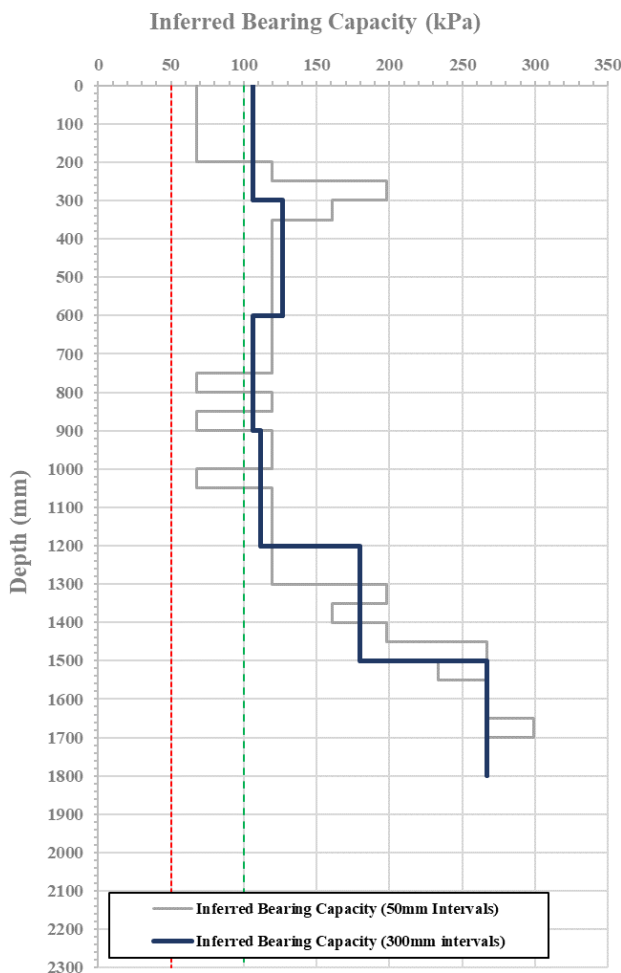
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 340 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	10	68
50 - 100	50.0	2		68
100 - 150	50.0	2		68
150 - 200	50.0	6	13	68
200 - 250	25.0			119
250 - 300	12.5	5	10	198
300 - 350	16.7			160
350 - 400	25.0			119
400 - 450	25.0	4	13	119
450 - 500	25.0			119
500 - 550	25.0	4	10	119
550 - 600	25.0			119
600 - 650	25.0	4	13	119
650 - 700	25.0			119
700 - 750	25.0	3	10	119
750 - 800	50.0			68
800 - 850	25.0	3	13	119
850 - 900	50.0			68
900 - 950	25.0	4	10	119
950 - 1000	25.0			119
1000 - 1050	50.0	3	11	68
1050 - 1100	25.0			119
1100 - 1150	25.0	4	13	119
1150 - 1200	25.0			119
1200 - 1250	25.0	4	10	119
1250 - 1300	25.0			119
1300 - 1350	12.5	7	21	198
1350 - 1400	16.7			160
1400 - 1450	12.5	10	13	198
1450 - 1500	8.3			267
1500 - 1550	10.0	11	36	233
1550 - 1600	8.3			267
1600 - 1650	8.3	13	10	267
1650 - 1700	7.1			299
1700 - 1750	8.3	12	13	267
1750 - 1800	8.3			267



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 340 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400 *	Light yellowish brown Gravelly SAND with trace of / minor silt. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

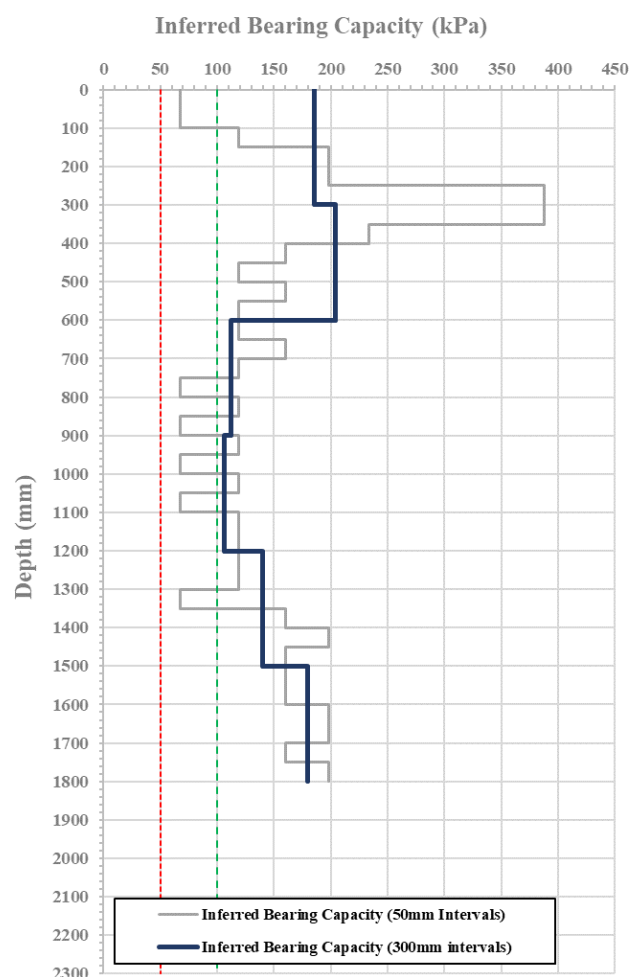
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 341 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	22	68
50 - 100	50.0			68
100 - 150	25.0	6		119
150 - 200	12.5	14	25	198
200 - 250	12.5			198
250 - 300	5.0	15	11	388
300 - 350	5.0			388
350 - 400	10.0			233
400 - 450	16.7	5	25	160
450 - 500	25.0			119
500 - 550	16.7	5	10	160
550 - 600	25.0			119
600 - 650	25.0	5	15	119
650 - 700	16.7			160
700 - 750	25.0	3	11	119
750 - 800	50.0			68
800 - 850	25.0	3	10	119
850 - 900	50.0			68
900 - 950	25.0	3	15	119
950 - 1000	50.0			68
1000 - 1050	25.0	3	21	119
1050 - 1100	50.0			68
1100 - 1150	25.0	4	15	119
1150 - 1200	25.0			119
1200 - 1250	25.0	4	15	119
1250 - 1300	25.0			119
1300 - 1350	50.0	4	21	68
1350 - 1400	16.7			160
1400 - 1450	12.5	7	15	198
1450 - 1500	16.7			160
1500 - 1550	16.7	6	21	160
1550 - 1600	16.7			160
1600 - 1650	12.5	8	15	198
1650 - 1700	12.5			198
1700 - 1750	16.7	7	15	160
1750 - 1800	12.5			198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 341 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1500 *	Light yellowish brown Gravelly SAND with trace of / minor silt. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



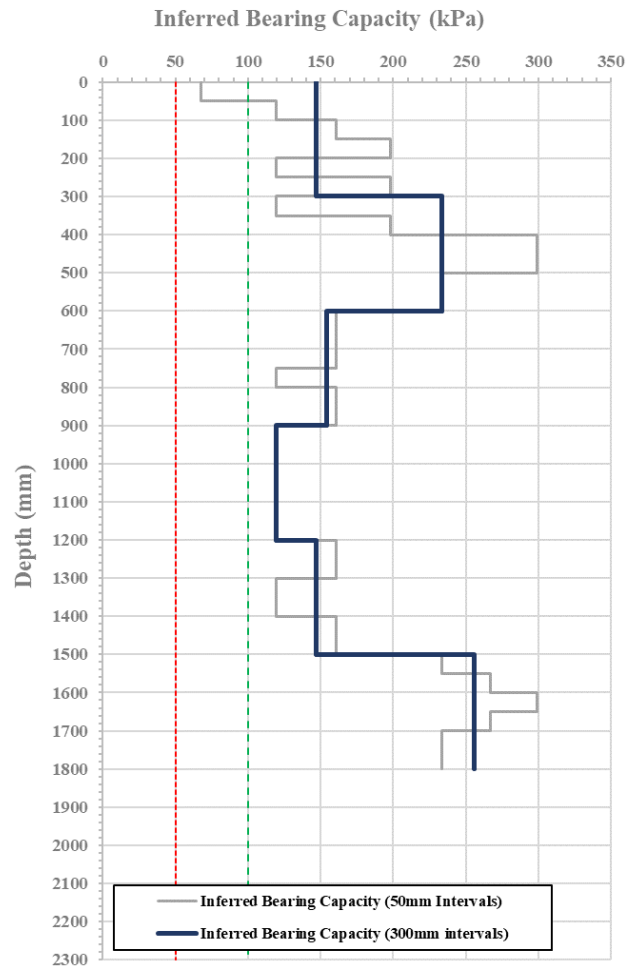
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 342 – See Page 127 for location plan					
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)	
		100 mm	300 mm		
0 - 50	50.0	3	16	68	
50 - 100	25.0	3		119	
100 - 150	16.7	7		160	
150 - 200	12.5	7		198	
200 - 250	25.0	6	16	119	
250 - 300	12.5	6		198	
300 - 350	25.0	6	30	119	
350 - 400	12.5	6		198	
400 - 450	7.1	14		299	
450 - 500	7.1	14		299	
500 - 550	10.0	10	12	233	
550 - 600	10.0			233	
600 - 650	16.7	6		17	160
650 - 700	16.7	6			160
700 - 750	16.7	5	160		
750 - 800	25.0	5	119		
800 - 850	16.7	6	16	160	
850 - 900	16.7	6		160	
900 - 950	25.0	4		119	
950 - 1000	25.0	4		119	
1000 - 1050	25.0	4	12	119	
1050 - 1100	25.0			119	
1100 - 1150	25.0			119	
1150 - 1200	25.0			119	
1200 - 1250	16.7	6	16	160	
1250 - 1300	16.7	6		160	
1300 - 1350	25.0	4		119	
1350 - 1400	25.0	4		119	
1400 - 1450	16.7	6	16	160	
1450 - 1500	16.7			160	
1500 - 1550	10.0	11		34	233
1550 - 1600	8.3				267
1600 - 1650	7.1	13	299		
1650 - 1700	8.3		267		
1700 - 1750	10.0	10	34	233	
1750 - 1800	10.0			233	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 342 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1200 *	Light greyish brown Gravelly Silty SAND. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 26.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

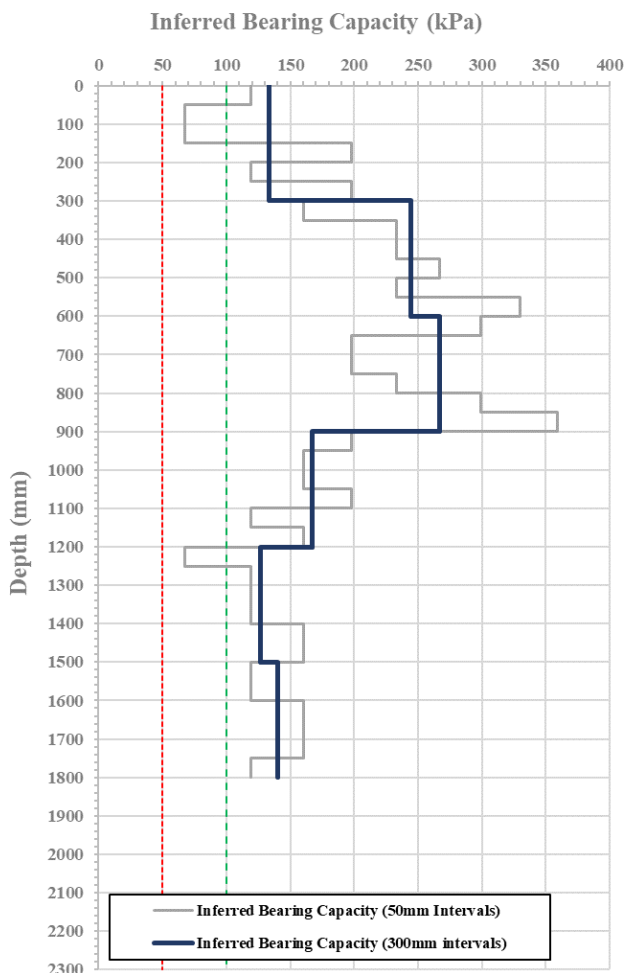
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 343 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	3	14	119
50 - 100	50.0	3		68
100 - 150	50.0	5		68
150 - 200	12.5	6	32	198
200 - 250	25.0			119
250 - 300	12.5	8	36	198
300 - 350	16.7			160
350 - 400	10.0			233
400 - 450	10.0	11	32	233
450 - 500	8.3			267
500 - 550	10.0	13	36	233
550 - 600	6.3			330
600 - 650	7.1	11	36	299
650 - 700	12.5			198
700 - 750	12.5	9	36	198
750 - 800	10.0			233
800 - 850	7.1	16	36	299
850 - 900	5.6			359
900 - 950	12.5	7	19	198
950 - 1000	16.7			160
1000 - 1050	16.7	7	19	160
1050 - 1100	12.5			198
1100 - 1150	25.0	5	13	119
1150 - 1200	16.7			160
1200 - 1250	50.0	3	13	68
1250 - 1300	25.0			119
1300 - 1350	25.0	4	13	119
1350 - 1400	25.0			119
1400 - 1450	16.7	6	15	160
1450 - 1500	16.7			160
1500 - 1550	25.0	4	15	119
1550 - 1600	25.0			119
1600 - 1650	16.7	6	15	160
1650 - 1700	16.7			160
1700 - 1750	16.7	5	15	160
1750 - 1800	25.0			119



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 343 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1000 *	Brown Silty Sandy GRAVEL with trace of cobbles. Dry. Loose. Gravel, angular to subrounded, maximum particle size 106.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

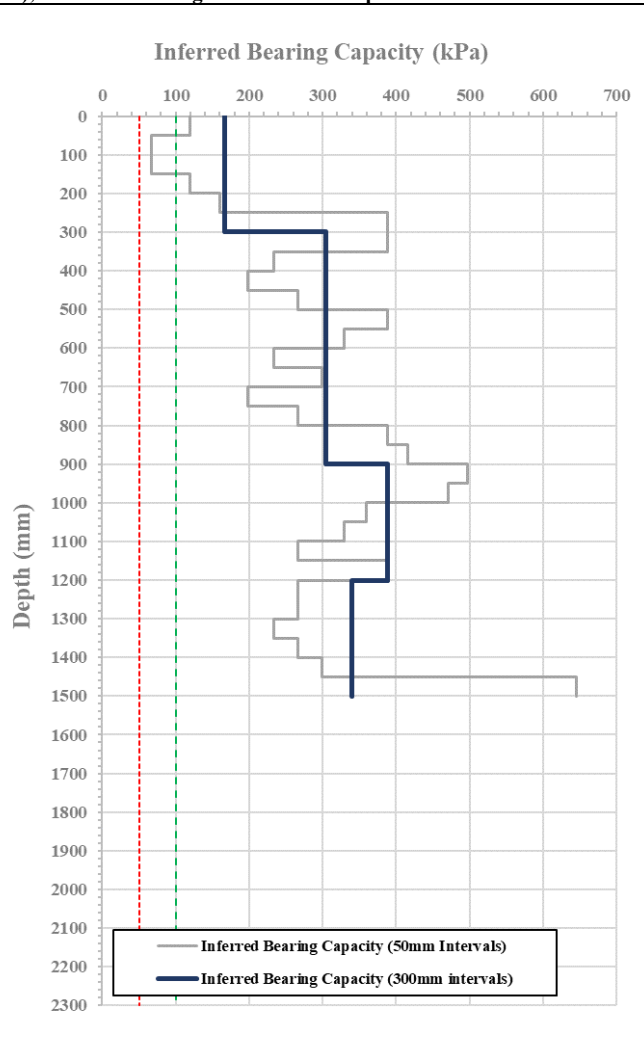
P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 344 – See Page 127 for location plan

Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	3		119
50 - 100	50.0			68
100 - 150	50.0	3	19	68
150 - 200	25.0			119
200 - 250	16.7	13		160
250 - 300	5.0			388
300 - 350	5.0	15		388
350 - 400	10.0			233
400 - 450	12.5	10	43	198
450 - 500	8.3			267
500 - 550	5.0	18		388
550 - 600	6.3			330
600 - 650	10.0	12		233
650 - 700	7.1			299
700 - 750	12.5	10	43	198
750 - 800	8.3			267
800 - 850	5.0	21		388
850 - 900	4.5			416
900 - 950	3.6	27		497
950 - 1000	3.8			471
1000 - 1050	5.6	17	60	359
1050 - 1100	6.3			330
1100 - 1150	8.3	16		267
1150 - 1200	5.0			388
1200 - 1250	8.3	12		267
1250 - 1300	8.3			267
1300 - 1350	10.0	11	50	233
1350 - 1400	8.3			267
1400 - 1450	7.1	27		299
1450 - 1500	2.5			645



Refusal

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 344 - See Page 127 for location plan

Depth (mm)	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; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

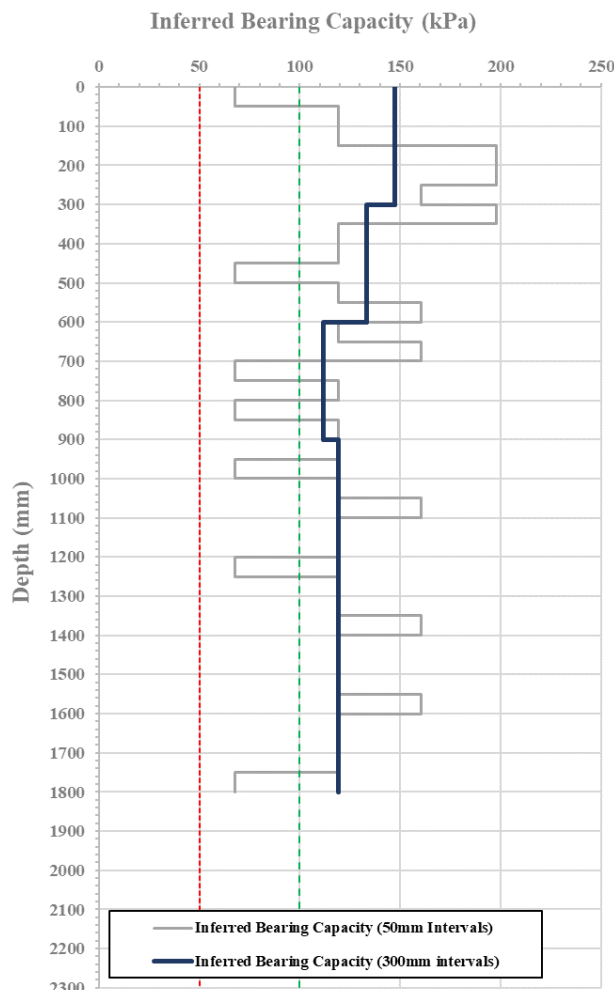
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 345 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	16	68
50 - 100	25.0	3		119
100 - 150	25.0	6		119
150 - 200	12.5	6	14	198
200 - 250	12.5	7		198
250 - 300	16.7	7		160
300 - 350	12.5	6	11	198
350 - 400	25.0	6		119
400 - 450	25.0	3		119
450 - 500	50.0	3	12	68
500 - 550	25.0	5		119
550 - 600	16.7	5		160
600 - 650	25.0	5	12	119
650 - 700	16.7	5		160
700 - 750	50.0	3		68
750 - 800	25.0	3	12	119
800 - 850	50.0	3		68
850 - 900	25.0	3		119
900 - 950	25.0	3	12	119
950 - 1000	50.0	3		68
1000 - 1050	25.0	5		119
1050 - 1100	16.7	5	12	160
1100 - 1150	25.0	4		119
1150 - 1200	25.0	4		119
1200 - 1250	50.0	3	12	68
1250 - 1300	25.0	3		119
1300 - 1350	25.0	5		119
1350 - 1400	16.7	5	12	160
1400 - 1450	25.0	4		119
1450 - 1500	25.0	4		119
1500 - 1550	25.0	5	12	119
1550 - 1600	16.7	5		160
1600 - 1650	25.0	4		119
1650 - 1700	25.0	4	12	119
1700 - 1750	25.0	3		119
1750 - 1800	50.0	3		68



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 345 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1400 *	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 346 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	20	68
50 - 100	25.0			119
100 - 150	16.7			160
150 - 200	12.5	7		198
200 - 250	12.5			198
250 - 300	8.3	10		267
300 - 350	3.6	30	≅ 94	497
350 - 400	3.1			548
400 - 450	3.3	28		523
450 - 500	3.8		471	
500 - 550	2.5		645	
Refusal				

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 346 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1100	Brown Silty Sandy GRAVEL with trace of cobbles. Dry. Loose. Gravel, angular to subrounded, maximum particle size 75.0mm; Sand, 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.

- Note:**
- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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:



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



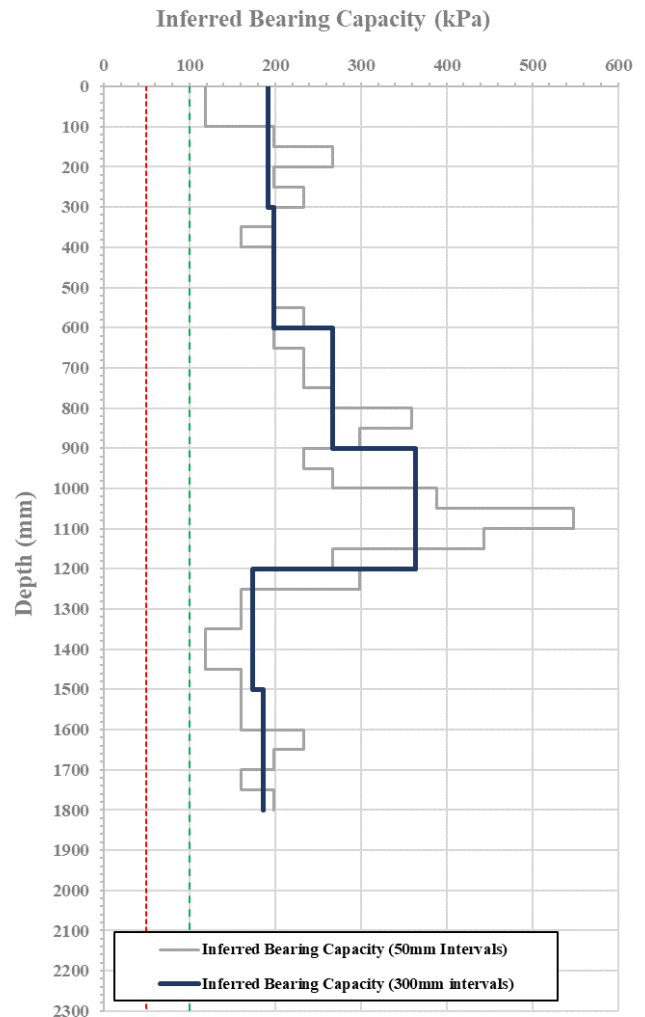
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 347 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	23	119
50 - 100	25.0	4		119
100 - 150	12.5	10		198
150 - 200	8.3	9	24	267
200 - 250	12.5			198
250 - 300	10.0	7	36	233
300 - 350	12.5			198
350 - 400	16.7			160
400 - 450	12.5	8	24	198
450 - 500	12.5			198
500 - 550	12.5	9	36	198
550 - 600	10.0			233
600 - 650	12.5	11	55	198
650 - 700	10.0			233
700 - 750	10.0			233
750 - 800	8.3	16	20	267
800 - 850	5.6			359
850 - 900	7.1	11	22	299
900 - 950	10.0			233
950 - 1000	8.3			267
1000 - 1050	5.0	26	20	388
1050 - 1100	3.1			548
1100 - 1150	4.2	18	22	444
1150 - 1200	8.3			267
1200 - 1250	7.1	10	20	299
1250 - 1300	16.7			160
1300 - 1350	16.7			160
1350 - 1400	25.0	5	22	119
1400 - 1450	25.0			119
1450 - 1500	16.7	6	22	160
1500 - 1550	16.7			160
1550 - 1600	16.7			160
1600 - 1650	10.0	9	22	233
1650 - 1700	12.5			198
1700 - 1750	16.7	7	22	160
1750 - 1800	12.5			198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 347 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1100	Brown Silty Sandy GRAVEL with trace of cobbles. Dry. Loose. Gravel, angular to subrounded, maximum particle size 75.0mm; Sand, fine to coarse; Silt, non-plastic.
1100 to 1550 *	Grey SAND with trace of / minor silt. Dry. Loose. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

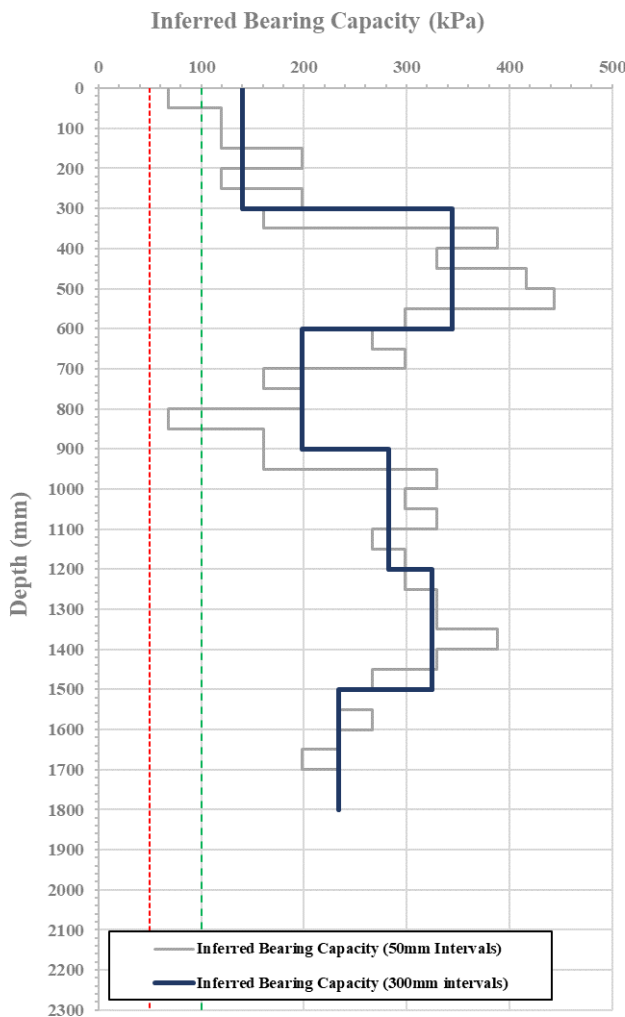
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 348 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	15	68
50 - 100	25.0	3		119
100 - 150	25.0	6		119
150 - 200	12.5	6	15	198
200 - 250	25.0	6		119
250 - 300	12.5	6	13	198
300 - 350	16.7	13		160
350 - 400	5.0	13	51	388
400 - 450	6.3	19		330
450 - 500	4.5	19		416
500 - 550	4.2	19	24	444
550 - 600	7.1	19		299
600 - 650	8.3	13	7	267
650 - 700	7.1	13		299
700 - 750	16.7	7		160
750 - 800	12.5	7	4	198
800 - 850	50.0	4		68
850 - 900	16.7	4	11	160
900 - 950	16.7	11		160
950 - 1000	6.3	11		330
1000 - 1050	7.1	15	39	299
1050 - 1100	6.3	15		330
1100 - 1150	8.3	13		267
1150 - 1200	7.1	13	47	299
1200 - 1250	7.1	15		299
1250 - 1300	6.3	15	18	330
1300 - 1350	6.3	18		330
1350 - 1400	5.0	18		388
1400 - 1450	6.3	14	14	330
1450 - 1500	8.3	14		267
1500 - 1550	10.0	11	30	233
1550 - 1600	8.3	11		267
1600 - 1650	10.0	9		233
1650 - 1700	12.5	9	10	198
1700 - 1750	10.0	10		233
1750 - 1800	10.0	10		233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 348 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1400 *	Brown Silty Sandy GRAVEL. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, slight plasticity.

* 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



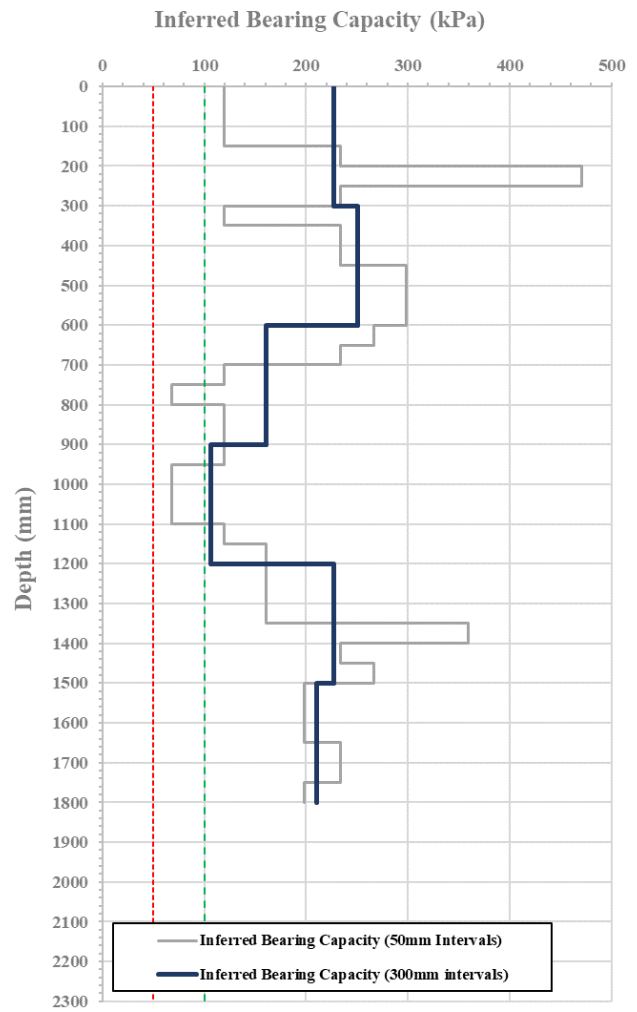
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 349 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	29	119
50 - 100	25.0	4		119
100 - 150	25.0	7		119
150 - 200	10.0	18	33	233
200 - 250	3.8			471
250 - 300	10.0	7	18	233
300 - 350	25.0			119
350 - 400	10.0			233
400 - 450	10.0	12	10	233
450 - 500	7.1			299
500 - 550	7.1	14	26	299
550 - 600	7.1			299
600 - 650	8.3	11	18	267
650 - 700	10.0			233
700 - 750	25.0	3	29	119
750 - 800	50.0			68
800 - 850	25.0	4	10	119
850 - 900	25.0			119
900 - 950	25.0	3	26	119
950 - 1000	50.0			68
1000 - 1050	50.0	2	29	68
1050 - 1100	50.0			68
1100 - 1150	25.0	5	18	119
1150 - 1200	16.7			160
1200 - 1250	16.7	6	29	160
1250 - 1300	16.7			160
1300 - 1350	16.7	12	26	160
1350 - 1400	5.6			359
1400 - 1450	10.0	11	18	233
1450 - 1500	8.3			267
1500 - 1550	12.5	8	29	198
1550 - 1600	12.5			198
1600 - 1650	12.5	9	26	198
1650 - 1700	10.0			233
1700 - 1750	10.0	9	18	233
1750 - 1800	12.5			198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 349 - See Page 127 for location plan	
Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1250 *	Brown Gravelly Silty SAND. Moist. Tightly packed / Loose. Gravel, subangular to subrounded, maximum particle size 53.0mm; Sand, fine to medium; 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 350 – See Page 127 for location plan				
Depth (mm)	Equivalent Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	18	68
50 - 100	25.0	3		119
100 - 150	16.7	6		160
150 - 200	16.7	6	29	160
200 - 250	16.7	9		160
250 - 300	8.3	9		267
300 - 350	16.7	8	38	160
350 - 400	10.0	8		233
400 - 450	16.7	9		160
450 - 500	8.3	9	13	267
500 - 550	10.0	12		233
550 - 600	7.1	12		299
600 - 650	7.1	16	22	299
650 - 700	5.6	16		359
700 - 750	8.3	12		267
750 - 800	8.3	12	6	267
800 - 850	10.0	10		233
850 - 900	10.0	10		233
900 - 950	25.0	3	13	119
950 - 1000	50.0	3		68
1000 - 1050	100.0	1		36
1050 - 1100	100.0	1	22	36
1100 - 1150	50.0	2		68
1150 - 1200	50.0	2		68
1200 - 1250	50.0	3	6	68
1250 - 1300	25.0	3		119
1300 - 1350	25.0	4		119
1350 - 1400	25.0	4	7	119
1400 - 1450	25.0	6		119
1450 - 1500	12.5	6		198
1500 - 1550	25.0	6	9	119
1550 - 1600	12.5	6		198
1600 - 1650	12.5	7		198
1650 - 1700	16.7	7	9	160
1700 - 1750	12.5	9		198
1750 - 1800	10.0	9		233

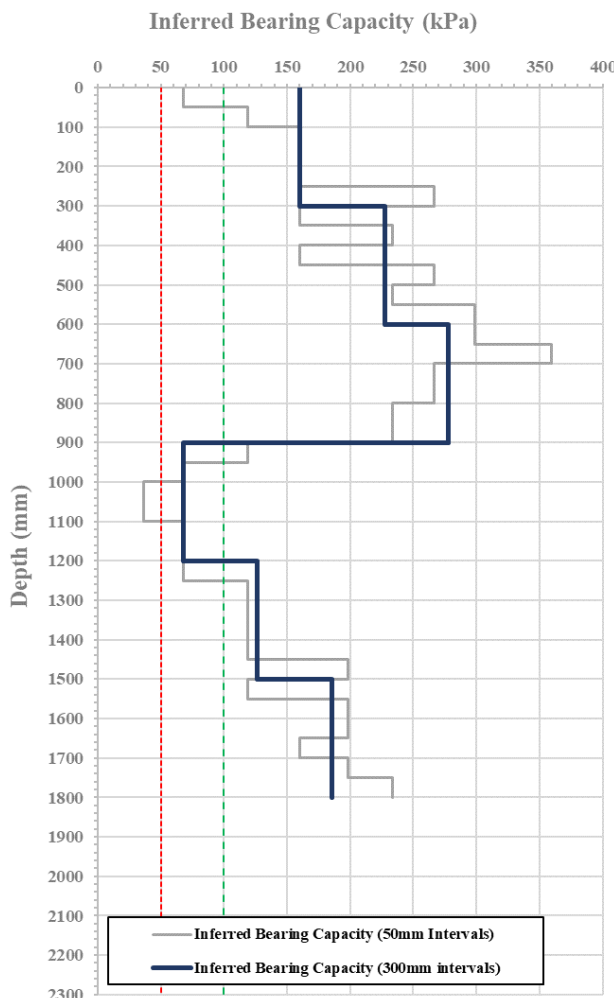
¹ Bearing capacity results stated above have been inferred from Fig 2 – Determination of allowable bearing pressure under small structures, M.J. Stockwell. The results are relative to the ground conditions at the time of test and will be heavily influenced if significant gravel fraction is present. The 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 350 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1300 *	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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

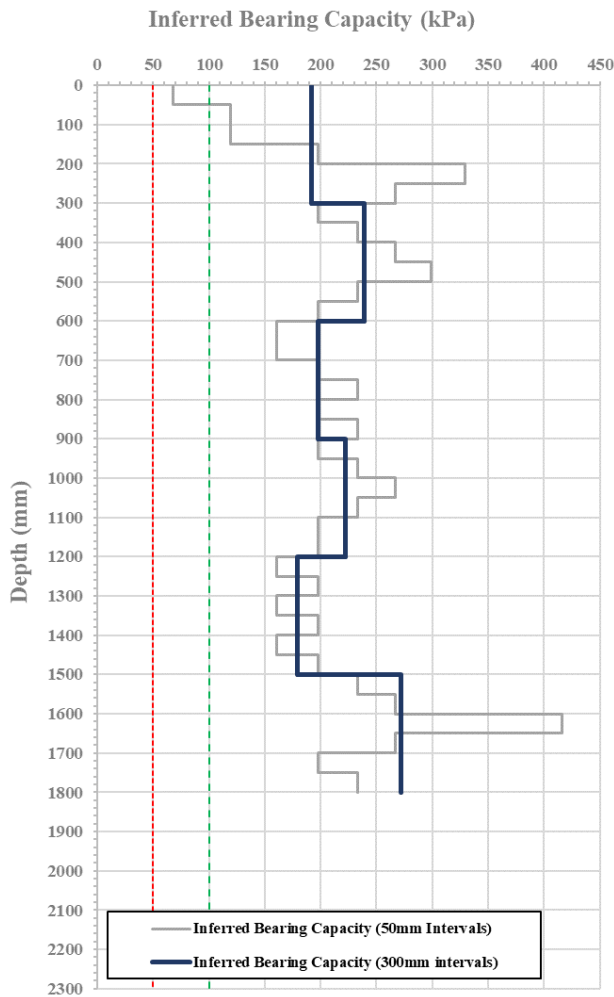
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 351 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	23	68
50 - 100	25.0	3		119
100 - 150	25.0	6		119
150 - 200	12.5	14	31	198
200 - 250	6.3			330
250 - 300	8.3	9	24	267
300 - 350	12.5			198
350 - 400	10.0			233
400 - 450	8.3	13	28	267
450 - 500	7.1			299
500 - 550	10.0	9	21	233
550 - 600	12.5			198
600 - 650	16.7	6	37	160
650 - 700	16.7			160
700 - 750	12.5	9	21	198
750 - 800	10.0			233
800 - 850	12.5	9	28	198
850 - 900	10.0			233
900 - 950	12.5	9	21	198
950 - 1000	10.0			233
1000 - 1050	8.3	11	37	267
1050 - 1100	10.0			233
1100 - 1150	12.5	8	21	198
1150 - 1200	12.5			198
1200 - 1250	16.7	7	21	160
1250 - 1300	12.5			198
1300 - 1350	16.7	7	37	160
1350 - 1400	12.5			198
1400 - 1450	16.7	7	21	160
1450 - 1500	12.5			198
1500 - 1550	10.0	11	37	233
1550 - 1600	8.3			267
1600 - 1650	4.5	17	21	416
1650 - 1700	8.3			267
1700 - 1750	12.5	9	37	198
1750 - 1800	10.0			233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 351 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 300	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
300 to 1100 *	Grey / brown Sandy GRAVEL with trace of / minor silt. Dry. Loose. Gravel, subangular to subrounded, maximum particle size 26.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

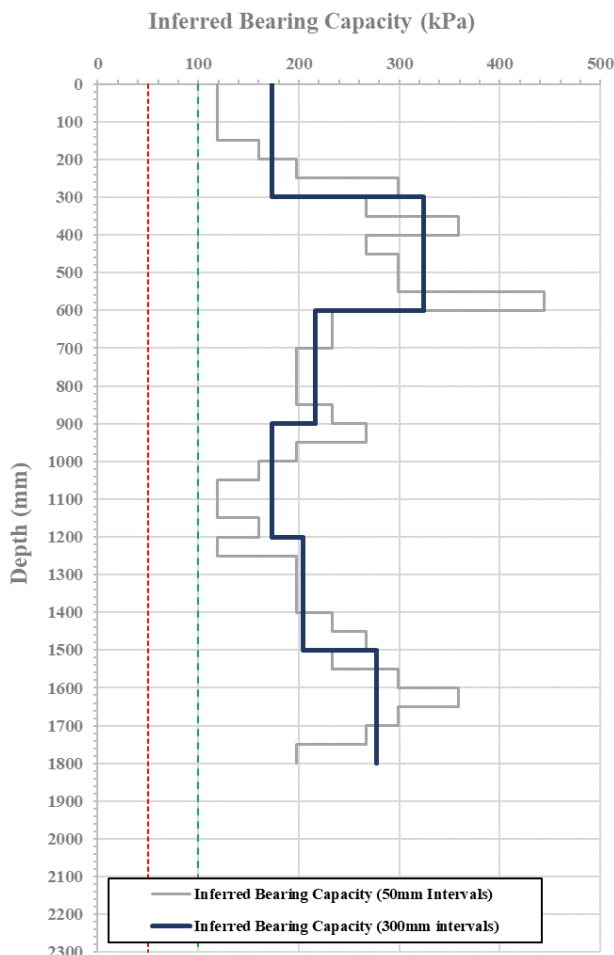
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 352 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	20	119
50 - 100	25.0	4		119
100 - 150	25.0	5		119
150 - 200	16.7	11	47	160
200 - 250	12.5			198
250 - 300	7.1			299
300 - 350	8.3	15	27	267
350 - 400	5.6			359
400 - 450	8.3			267
450 - 500	7.1	19	38	299
500 - 550	7.1			299
550 - 600	4.2			444
600 - 650	10.0	10	25	233
650 - 700	10.0			233
700 - 750	12.5			198
750 - 800	12.5	8	20	198
800 - 850	12.5			198
850 - 900	10.0			233
900 - 950	8.3	10	25	267
950 - 1000	12.5			198
1000 - 1050	16.7			160
1050 - 1100	25.0	5	38	119
1100 - 1150	25.0			119
1150 - 1200	16.7			160
1200 - 1250	25.0	6	25	119
1250 - 1300	12.5			198
1300 - 1350	12.5			198
1350 - 1400	12.5	8	20	198
1400 - 1450	10.0			233
1450 - 1500	8.3			267
1500 - 1550	10.0	12	38	233
1550 - 1600	7.1			299
1600 - 1650	5.6			359
1650 - 1700	7.1	16	25	299
1700 - 1750	8.3			267
1750 - 1800	12.5			198



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 352 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1450 *	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



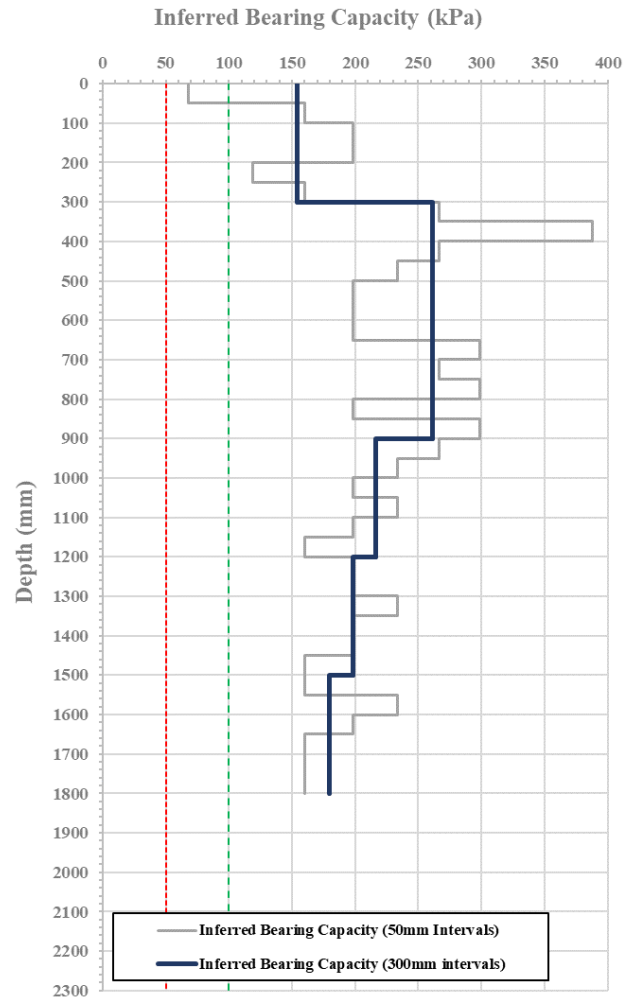
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 353 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	4	17	68
50 - 100	16.7	4		160
100 - 150	12.5	8		198
150 - 200	12.5	8	17	198
200 - 250	25.0	5		119
250 - 300	16.7	5	16	160
300 - 350	8.3	16		267
350 - 400	5.0	16	35	388
400 - 450	8.3	11		267
450 - 500	10.0	11		233
500 - 550	12.5	8	35	198
550 - 600	12.5	8		198
600 - 650	12.5	11	35	198
650 - 700	7.1	11		299
700 - 750	8.3	13		267
750 - 800	7.1	13	35	299
800 - 850	12.5	11		198
850 - 900	7.1	11	27	299
900 - 950	8.3	11		267
950 - 1000	10.0	11	27	233
1000 - 1050	12.5	9		198
1050 - 1100	10.0	9		233
1100 - 1150	12.5	7	24	198
1150 - 1200	16.7	7		160
1200 - 1250	12.5	8	24	198
1250 - 1300	12.5	8		198
1300 - 1350	10.0	9		233
1350 - 1400	12.5	9	24	198
1400 - 1450	12.5	9		198
1450 - 1500	16.7	7	21	160
1500 - 1550	16.7	7		160
1550 - 1600	10.0	8	21	233
1600 - 1650	12.5	8		198
1650 - 1700	16.7	7		160
1700 - 1750	16.7	6	21	160
1750 - 1800	16.7	6		160



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 353 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1400	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
1400 to 1500 *	Grey / brown SAND. Moist. Loose. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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

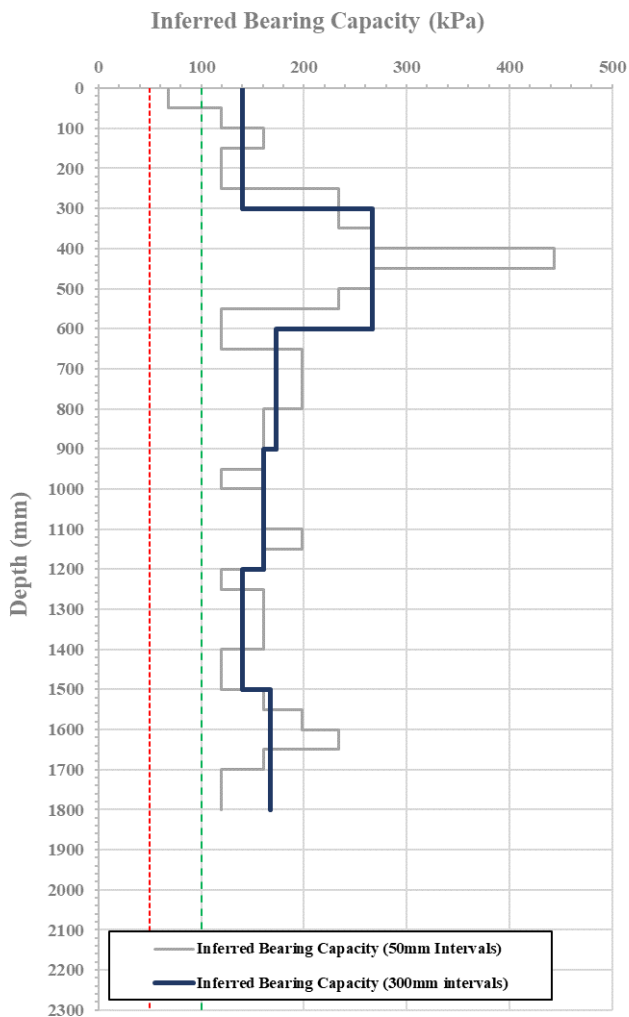
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 354 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	15	68
50 - 100	25.0	3		119
100 - 150	16.7	5		160
150 - 200	25.0	7	36	119
200 - 250	25.0	7		119
250 - 300	10.0	11		233
300 - 350	10.0	11	20	233
350 - 400	8.3	18		267
400 - 450	4.2	18		444
450 - 500	8.3	7	18	267
500 - 550	10.0	6		233
550 - 600	25.0	8		119
600 - 650	25.0	6	15	198
650 - 700	12.5	8		198
700 - 750	12.5	6		198
750 - 800	12.5	6	19	160
800 - 850	16.7	5		160
850 - 900	16.7	6		119
900 - 950	16.7	5	15	119
950 - 1000	25.0	6		160
1000 - 1050	16.7	7		160
1050 - 1100	16.7	5	19	160
1100 - 1150	12.5	6		198
1150 - 1200	16.7	7		160
1200 - 1250	25.0	5	15	119
1250 - 1300	16.7	6		160
1300 - 1350	16.7	6		160
1350 - 1400	16.7	4	19	160
1400 - 1450	25.0	4		119
1450 - 1500	25.0	7		119
1500 - 1550	16.7	8	15	160
1550 - 1600	12.5	8		198
1600 - 1650	10.0	4		233
1650 - 1700	16.7	4	19	160
1700 - 1750	25.0	4		119
1750 - 1800	25.0	4		119



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 354 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 800	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
800 to 1400 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Loose. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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

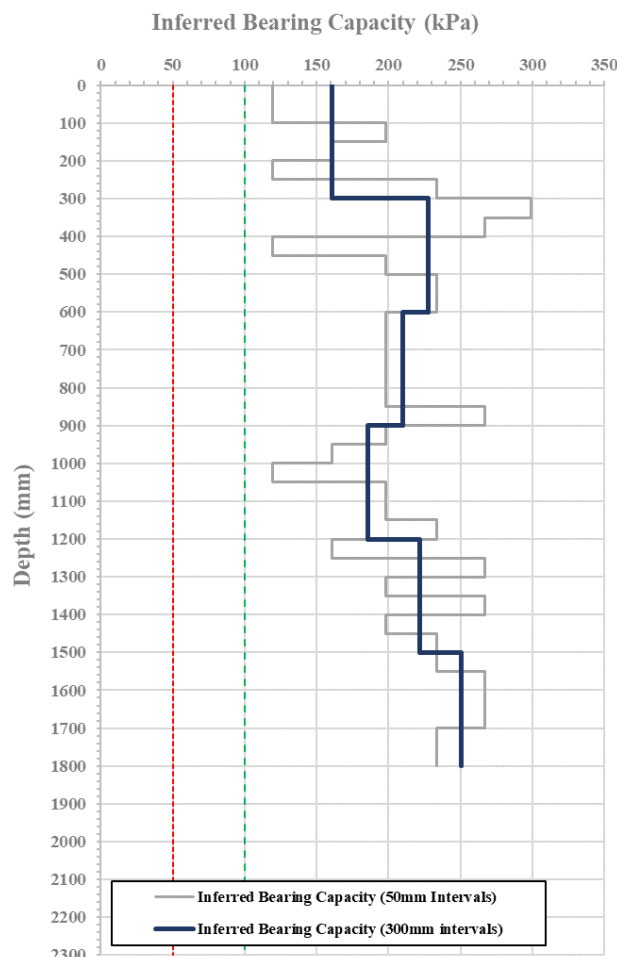
P: 03 4487644, W: www.centraltesting.co.nz, E: info@centraltesting.co.nz

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 355 – See Page 127 for location plan

Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	18	119
50 - 100	25.0	4		119
100 - 150	12.5	7		198
150 - 200	16.7	7		160
200 - 250	25.0	7	119	
250 - 300	10.0	7	233	
300 - 350	7.1	13	299	
350 - 400	8.3	13	267	
400 - 450	25.0	6	29	119
450 - 500	12.5	6		198
500 - 550	10.0	6		233
550 - 600	10.0	10	233	
600 - 650	12.5	8	26	198
650 - 700	12.5	8		198
700 - 750	12.5	8		198
750 - 800	12.5	8		198
800 - 850	12.5	10	198	
850 - 900	8.3	10	267	
900 - 950	12.5	7	22	198
950 - 1000	16.7	7		160
1000 - 1050	25.0	6		119
1050 - 1100	12.5	6	198	
1100 - 1150	12.5	9	198	
1150 - 1200	10.0	9	233	
1200 - 1250	16.7	9	28	160
1250 - 1300	8.3	9		267
1300 - 1350	12.5	10		198
1350 - 1400	8.3	10		267
1400 - 1450	12.5	9	198	
1450 - 1500	10.0	9	233	
1500 - 1550	10.0	11	233	
1550 - 1600	8.3	11	267	
1600 - 1650	8.3	12	33	267
1650 - 1700	8.3	12		267
1700 - 1750	10.0	10		233
1750 - 1800	10.0	10	233	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 355 - See Page 127 for location plan

Depth (mm)	Description
0 to 50	Topsoil & vegetation (organic matter).
50 to 1200	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, fine to coarse; Silt, non-plastic.
1200 to 1500 *	Grey / brown Gravelly SAND with trace of / minor silt. Moist. Loose. Gravel, subangular to subrounded, maximum particle size 37.5mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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:



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



Central Testing Services

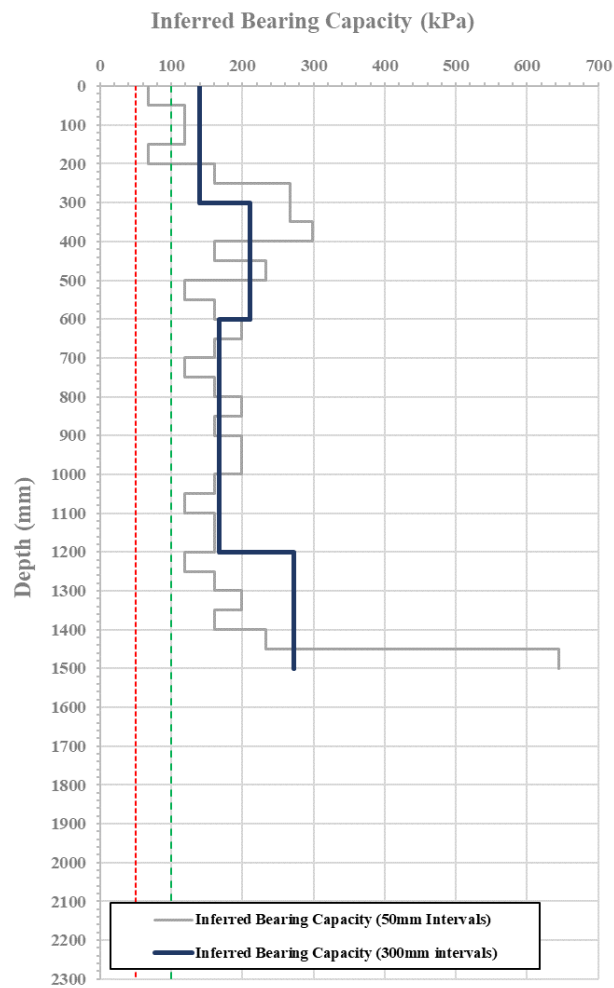
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooving Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 356 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	3	15	68
50 - 100	25.0	3		119
100 - 150	25.0	3		119
150 - 200	50.0	9	26	68
200 - 250	16.7			160
250 - 300	8.3	13	19	267
300 - 350	8.3			267
350 - 400	7.1			299
400 - 450	16.7	8	19	160
450 - 500	10.0			233
500 - 550	25.0	5	37	119
550 - 600	16.7			160
600 - 650	12.5	7	37	198
650 - 700	16.7			160
700 - 750	25.0	5	37	119
750 - 800	16.7			160
800 - 850	12.5	7	37	198
850 - 900	16.7			160
900 - 950	12.5	8	37	198
950 - 1000	12.5			198
1000 - 1050	16.7	5	37	160
1050 - 1100	25.0			119
1100 - 1150	16.7	6	37	160
1150 - 1200	16.7			160
1200 - 1250	25.0	5	37	119
1250 - 1300	16.7			160
1300 - 1350	12.5	7	37	198
1350 - 1400	16.7			160
1400 - 1450	10.0	25	37	233
1450 - 1500	2.5			645



Refusal

¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 356 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1500	Brown Silty Sandy GRAVEL. Dry. Loose. Gravel, angular to subrounded, maximum particle size 53.0mm; Sand, 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.

Note:

- The results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*

S



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



Central Testing Services

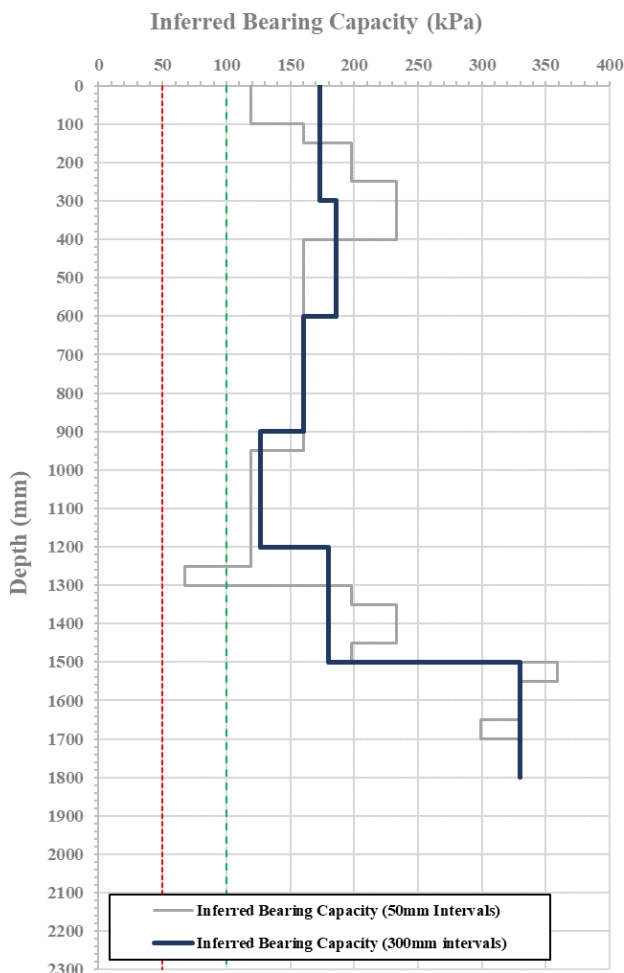
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 509 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	4	20	119
50 - 100	25.0	4		119
100 - 150	16.7	7		160
150 - 200	12.5	7		198
200 - 250	12.5	9	20	198
250 - 300	10.0			233
300 - 350	10.0	10	20	233
350 - 400	10.0			233
400 - 450	16.7	6	22	160
450 - 500	16.7			160
500 - 550	16.7	6	18	160
550 - 600	16.7			160
600 - 650	16.7	6	18	160
650 - 700	16.7			160
700 - 750	16.7	6	18	160
750 - 800	16.7			160
800 - 850	16.7	6	18	160
850 - 900	16.7			160
900 - 950	16.7	5	13	160
950 - 1000	25.0			119
1000 - 1050	25.0	4	13	119
1050 - 1100	25.0			119
1100 - 1150	25.0	4	13	119
1150 - 1200	25.0			119
1200 - 1250	25.0	3	21	119
1250 - 1300	50.0			68
1300 - 1350	12.5	9	21	198
1350 - 1400	10.0			233
1400 - 1450	10.0	9	21	233
1450 - 1500	12.5			198
1500 - 1550	5.6	17	48	359
1550 - 1600	6.3			330
1600 - 1650	6.3	15	48	330
1650 - 1700	7.1			299
1700 - 1750	6.3	16	48	330
1750 - 1800	6.3			330



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 509 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1500 *	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

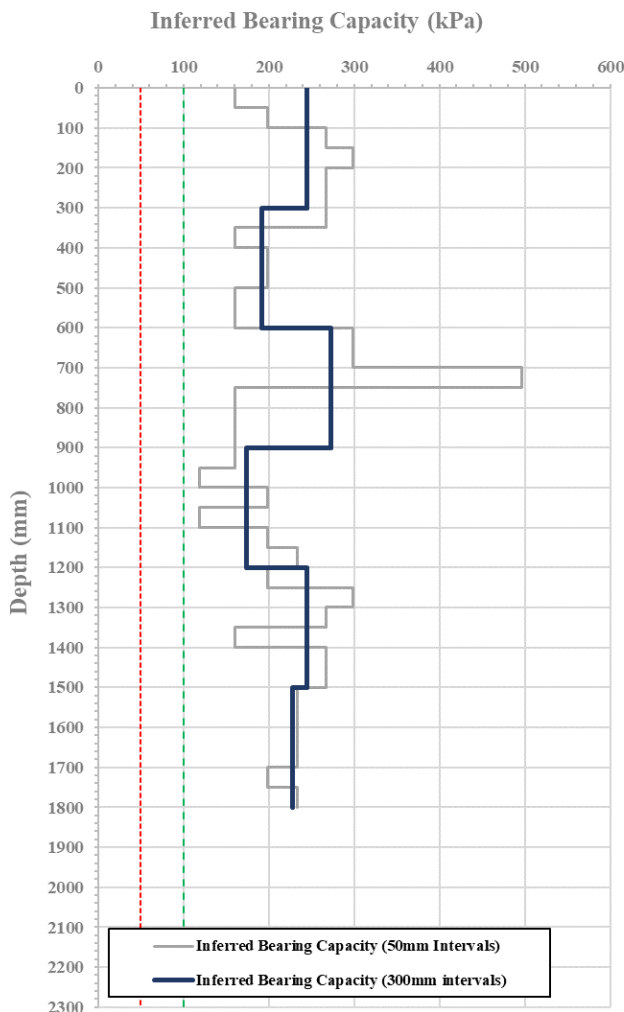
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 510 – See Page 127 for location plan					
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)	
		100 mm	300 mm		
0 - 50	16.7	7	32	160	
50 - 100	12.5	7		198	
100 - 150	8.3	13		267	
150 - 200	7.1	12	23	299	
200 - 250	8.3			267	
250 - 300	8.3			267	
300 - 350	8.3	9	37	267	
350 - 400	16.7	14		160	
400 - 450	12.5			198	
450 - 500	12.5		198		
500 - 550	16.7	6	20	160	
550 - 600	16.7			160	
600 - 650	7.1			299	
650 - 700	7.1	17	32	299	
700 - 750	3.6			497	
750 - 800	16.7			160	
800 - 850	16.7	6	29	160	
850 - 900	16.7			160	
900 - 950	16.7			160	
950 - 1000	25.0	5	20	119	
1000 - 1050	12.5			6	198
1050 - 1100	25.0				119
1100 - 1150	12.5	9	32		198
1150 - 1200	10.0			233	
1200 - 1250	12.5			198	
1250 - 1300	7.1	11	29	299	
1300 - 1350	8.3			9	267
1350 - 1400	16.7				160
1400 - 1450	8.3	12	20		267
1450 - 1500	8.3			267	
1500 - 1550	10.0			10	233
1550 - 1600	10.0	10	233		
1600 - 1650	10.0		9		233
1650 - 1700	10.0			9	233
1700 - 1750	12.5	198			
1750 - 1800	10.0			233	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 510 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1300	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1500 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

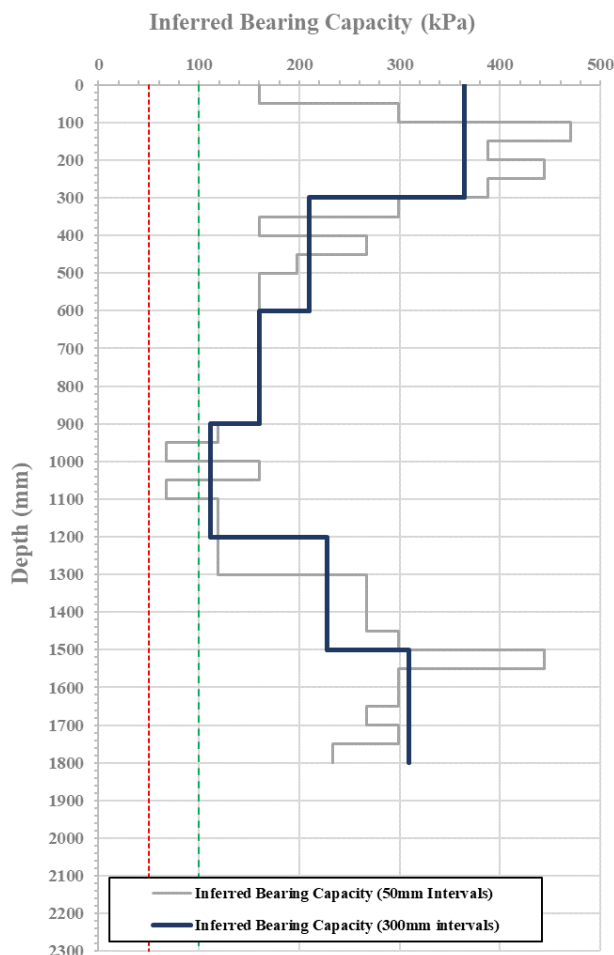
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 511 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	10	55	160
50 - 100	7.1			299
100 - 150	3.8	471		
150 - 200	5.0	388		
200 - 250	4.2	444		
250 - 300	5.0	22	388	
300 - 350	7.1	10	26	299
350 - 400	16.7			160
400 - 450	8.3	267		
450 - 500	12.5	198		
500 - 550	16.7	160		
550 - 600	16.7	6	18	160
600 - 650	16.7			160
650 - 700	16.7	160		
700 - 750	16.7	6		160
750 - 800	16.7	6		160
800 - 850	16.7	6	11	160
850 - 900	16.7			160
900 - 950	25.0	3		119
950 - 1000	50.0			68
1000 - 1050	16.7	4		160
1050 - 1100	50.0		68	
1100 - 1150	25.0	4	119	
1150 - 1200	25.0		119	
1200 - 1250	25.0	4	119	
1250 - 1300	25.0		119	
1300 - 1350	8.3	12	29	267
1350 - 1400	8.3			267
1400 - 1450	8.3	13		267
1450 - 1500	7.1			299
1500 - 1550	4.2	19		444
1550 - 1600	7.1		299	
1600 - 1650	7.1	13	44	299
1650 - 1700	8.3			267
1700 - 1750	7.1	12		299
1750 - 1800	10.0			233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 511 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1400	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1400 to 1550 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



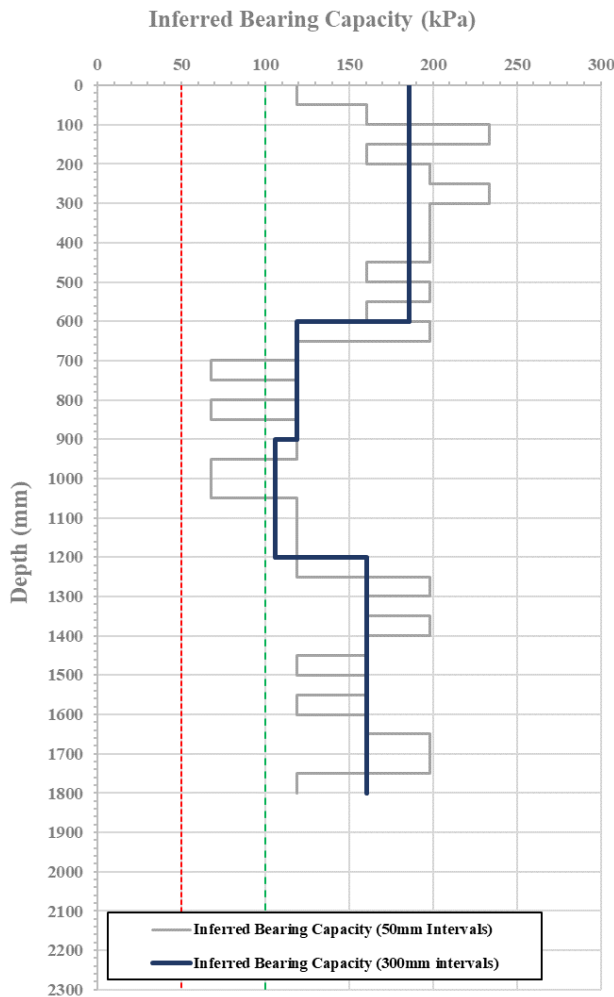
Test results indicated as not accredited are outside the scope of the laboratory's accreditation



TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 512 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	25.0	5	22	119
50 - 100	16.7	5		160
100 - 150	10.0	8		233
150 - 200	16.7	9	22	160
200 - 250	12.5			198
250 - 300	10.0	8	22	233
300 - 350	12.5			198
350 - 400	12.5			198
400 - 450	12.5	7	22	198
450 - 500	16.7			160
500 - 550	12.5	7	22	198
550 - 600	16.7			160
600 - 650	12.5	6	12	198
650 - 700	25.0			119
700 - 750	50.0	3	12	68
750 - 800	25.0			119
800 - 850	50.0	3	12	68
850 - 900	25.0			119
900 - 950	25.0	3	10	119
950 - 1000	50.0			68
1000 - 1050	50.0	3	10	68
1050 - 1100	25.0			119
1100 - 1150	25.0	4	18	119
1150 - 1200	25.0			119
1200 - 1250	25.0	6	18	119
1250 - 1300	12.5			198
1300 - 1350	16.7	7	18	160
1350 - 1400	12.5			198
1400 - 1450	16.7	5	18	160
1450 - 1500	25.0			119
1500 - 1550	16.7	5	18	160
1550 - 1600	25.0			119
1600 - 1650	16.7	7	18	160
1650 - 1700	12.5			198
1700 - 1750	12.5	6	18	198
1750 - 1800	25.0			119



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 512 - See Page 127 for location plan

Depth (mm)	Description
0 to 200	Topsoil & vegetation (organic matter).
200 to 1300	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1500 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

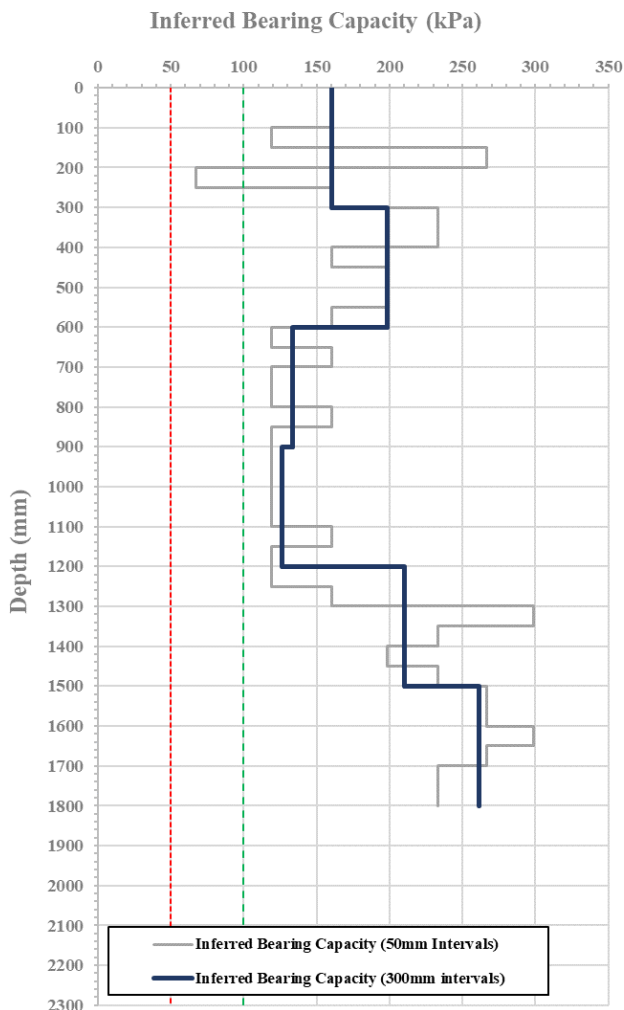
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 513 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	16.7	6	18	160
50 - 100	16.7			160
100 - 150	25.0			119
150 - 200	8.3	8	18	267
200 - 250	50.0			68
250 - 300	16.7	4	18	160
300 - 350	10.0			233
350 - 400	10.0	10	24	233
400 - 450	16.7			160
450 - 500	12.5	7	24	198
500 - 550	12.5			198
550 - 600	16.7	7	24	160
600 - 650	25.0			119
650 - 700	16.7	5	14	160
700 - 750	25.0			119
750 - 800	25.0	4	14	119
800 - 850	16.7			160
850 - 900	25.0	5	14	119
900 - 950	25.0			119
950 - 1000	25.0	4	13	119
1000 - 1050	25.0			119
1050 - 1100	25.0	4	13	119
1100 - 1150	16.7			160
1150 - 1200	25.0	5	26	119
1200 - 1250	25.0			119
1250 - 1300	16.7	5	26	160
1300 - 1350	7.1			299
1350 - 1400	10.0	12	35	233
1400 - 1450	12.5			198
1450 - 1500	10.0	9	35	233
1500 - 1550	8.3			267
1550 - 1600	8.3	12	35	267
1600 - 1650	7.1			299
1650 - 1700	8.3	13	35	267
1700 - 1750	10.0			233
1750 - 1800	10.0	10	35	233



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 513 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1200	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1200 to 1500 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



Central Testing Services

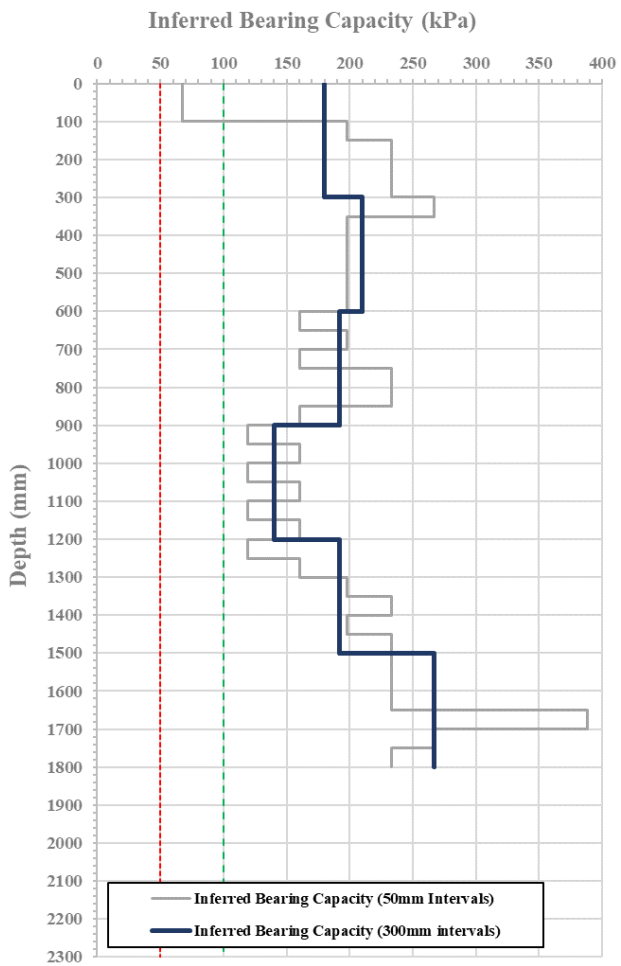
18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 514 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	21	68
50 - 100	50.0	2		68
100 - 150	12.5	9		198
150 - 200	10.0	10		233
200 - 250	10.0	10		233
250 - 300	10.0	10	233	
300 - 350	8.3	10	26	267
350 - 400	12.5	8		198
400 - 450	12.5	8		198
450 - 500	12.5	8		198
500 - 550	12.5	8		198
550 - 600	12.5	7	23	160
600 - 650	16.7	8		198
650 - 700	12.5	8		160
700 - 750	16.7	8		233
750 - 800	10.0	8		233
800 - 850	10.0	8	15	160
850 - 900	16.7	5		119
900 - 950	25.0	5		160
950 - 1000	16.7	5		119
1000 - 1050	25.0	5		160
1050 - 1100	16.7	5	23	119
1100 - 1150	25.0	5		160
1150 - 1200	16.7	5		119
1200 - 1250	25.0	5		160
1250 - 1300	16.7	9		198
1300 - 1350	12.5	9	36	233
1350 - 1400	10.0	9		233
1400 - 1450	12.5	10		198
1450 - 1500	10.0	15		233
1500 - 1550	10.0	11		233
1550 - 1600	10.0	15	233	
1600 - 1650	10.0	15	388	
1650 - 1700	5.0	11	267	
1700 - 1750	8.3	11	233	
1750 - 1800	10.0	11	233	



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 514 - See Page 127 for location plan

Depth (mm)	Description
0 to 150	Topsoil & vegetation (organic matter).
150 to 1400	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1400 to 1500 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
- 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: *[Signature]*



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



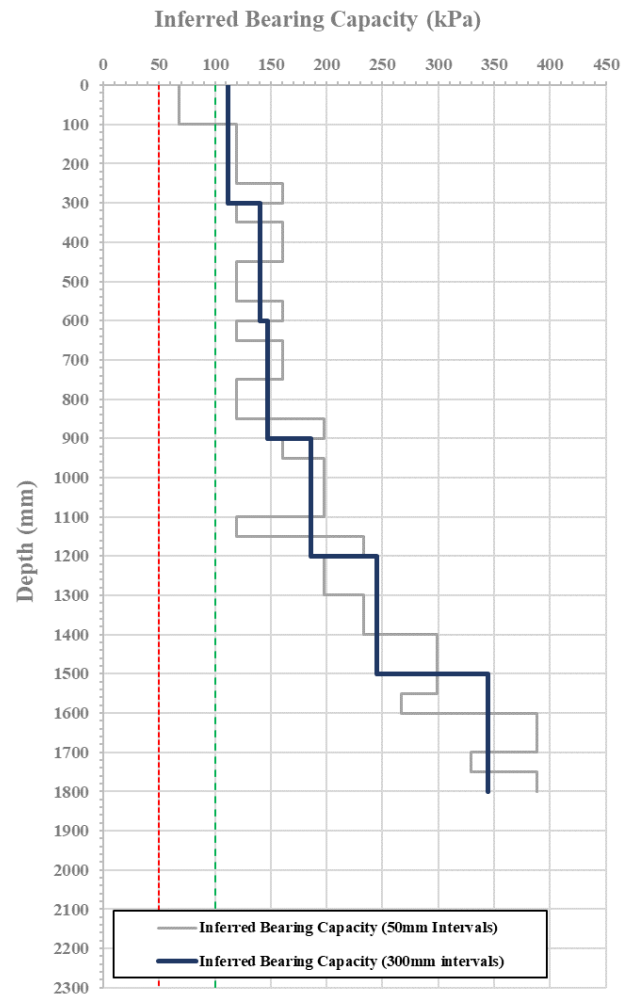
Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Woong Tree Subdivision, Cromwell		

SCALA PENETROMETER (NZS 4402:1988, Test 6.5.2); Lot 515 – See Page 127 for location plan				
Depth (mm)	Penetration (mm/blow)	Blows /		Inferred Allowable Bearing Capacity ¹ (kPa)
		100 mm	300 mm	
0 - 50	50.0	2	11	68
50 - 100	50.0	2		68
100 - 150	25.0	4		119
150 - 200	25.0	4		119
200 - 250	25.0	5		119
250 - 300	16.7	5	160	
300 - 350	25.0	5	15	119
350 - 400	16.7	5		160
400 - 450	16.7	5		160
450 - 500	25.0	5		119
500 - 550	25.0	5		119
550 - 600	16.7	5	16	160
600 - 650	25.0	5		119
650 - 700	16.7	5		160
700 - 750	16.7	5		160
750 - 800	25.0	5		119
800 - 850	25.0	6	22	119
850 - 900	12.5	6		198
900 - 950	16.7	7		160
950 - 1000	12.5	7		198
1000 - 1050	12.5	8		198
1050 - 1100	12.5	8	32	198
1100 - 1150	25.0	7		119
1150 - 1200	10.0	8		233
1200 - 1250	12.5	8		198
1250 - 1300	12.5	8		198
1300 - 1350	10.0	10	51	233
1350 - 1400	10.0	10		233
1400 - 1450	7.1	14		299
1450 - 1500	7.1	14		299
1500 - 1550	7.1	13		299
1550 - 1600	8.3	13	20	267
1600 - 1650	5.0	20		388
1650 - 1700	5.0	20		388
1700 - 1750	6.3	18		330
1750 - 1800	5.0	18		388



¹ 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.

FIELD LOG: NZ Geotechnical Society Guidelines 2005 (Not IANZ Accredited); Lot 515 - See Page 127 for location plan

Depth (mm)	Description
0 to 100	Topsoil & vegetation (organic matter).
100 to 1300	Grey / brown Gravelly SAND with minor silt. Moist. Tightly packed. Gravel, subangular to subrounded, maximum particle size 63.0mm; Sand, fine to coarse; Silt, non-plastic.
1300 to 1450 *	Light grey SAND with trace of / minor silt. Moist. Tightly packed. Sand, 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 results stated above are specific to the approximate test locations as recorded. CTS accepts no liability for any extrapolated use of this data.
 - 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: *[Signature]*



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

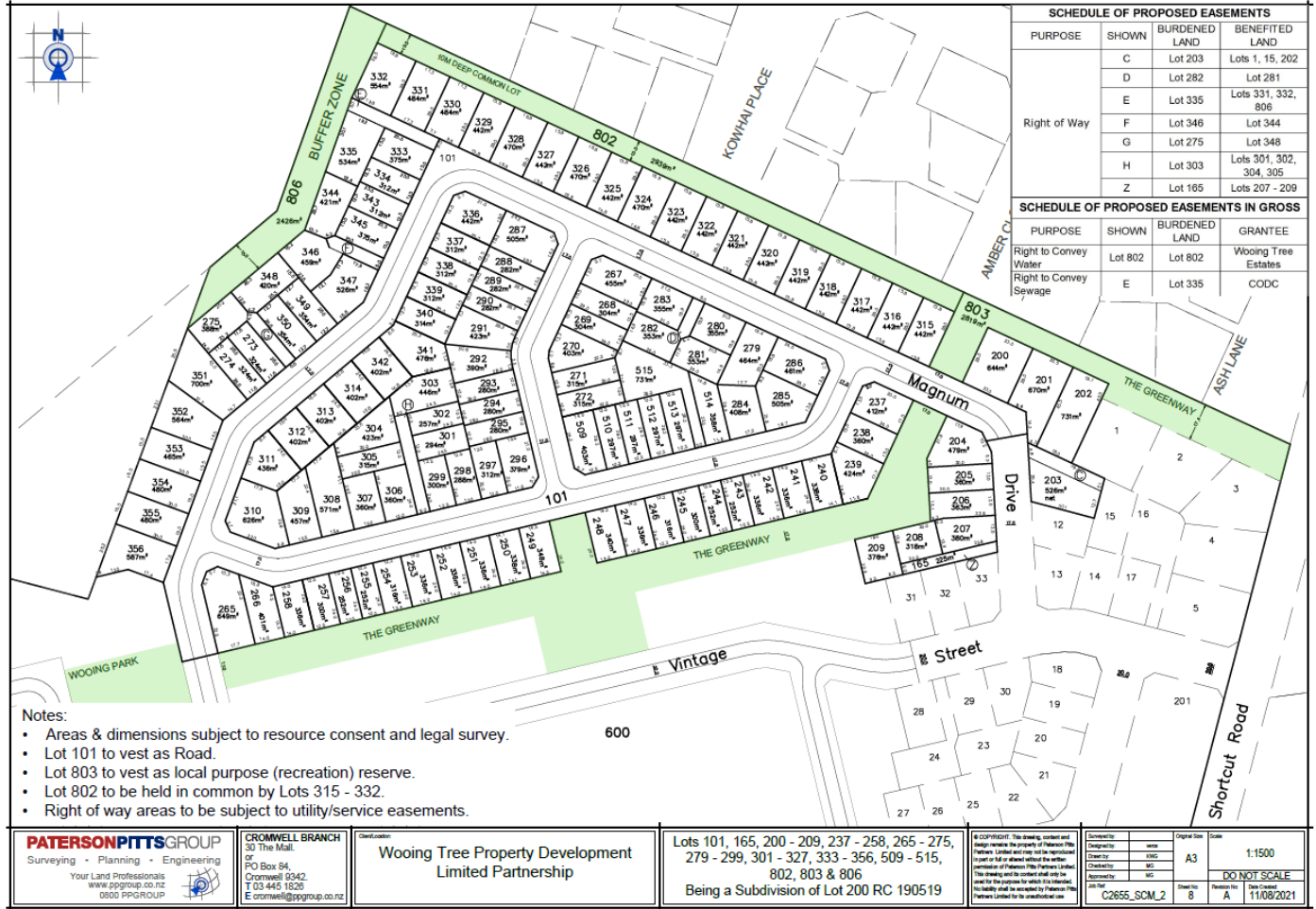


Central Testing Services

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

TEST REPORT – SCALA PENETROMETER RESULTS

Client Details:	Veros, stephenc@veros.co.nz	Attention:	S. Cornwall
Job Description:	Wooring Tree Subdivision, Cromwell		
Test Methods:	Scala Penetrometer - NZS 4402:1988, Test 6.5.2 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.
- 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:

Approved Signatory

A.P. Julius
Laboratory Manager



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."