

UPDATED GEOTECHNICAL INVESTIGATION REPORT

**WESTERN SPRINGS PINE
REMOVAL
LUC60321424**

**WESTERN SPRINGS PARK 859
GREAT NORTH ROAD GREY LYNN
AUCKLAND COUNCIL**

Reference: GH676.2

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ATTACHMENTS:

Overall Site Plan CLC Consulting Group Ltd drawing no. 21159-L101-D

Geoconsult Track cross section sketch.

1. INTRODUCTION

This report presents the findings of a geotechnical investigation carried out at Western Springs Park.

This report is in addition to two previous reports carried out by Geoconsult:

“Geotechnical Investigation Report; Western Springs Pine Removal; Western Springs Park 859 Great North Road; Greenscenz Limited”; ref. GH676, dated 01/06/16 and

“Additional Geotechnical Investigation Report; Western Springs Pine Removal LUC60321424; Western Springs Park 859 Great North Road Grey Lynn; Auckland Council”; ref. GH676.1, dated 17 October 2018.

The purpose of the first report was to provide recommendations for the proposed temporary forestry haul roads, landing areas and processing area.

The second report was prepared for Auckland Council to respond to Council’s Development Engineer’s further information requests and to address the slope stability concerns and other geotechnical matters raised by submitters to the resource consent application. Council’s Development Engineer’s further information requests were contained in the letter from Ashwita Murphy dated 5th September 2018 and were addressed within that report.

The first and second reports addressed a previous works design which involved an entrance track with one large processing area and two smaller landing areas, all designed for the transit of large, wheeled vehicles.

This current (third) report is at the direction of LUC60321424 Conditions of Consent, and in particular, condition 38A which reads:

“Prior to commencing work, the consent holder shall provide the Council’s Team Leader Monitoring (Central) with an updated version of the Geoconsult Ltd report dated 17/10/2018 and referenced GH676.1, taking into account the finalised Specification of Works and updated Overall Site Plan certified in accordance with condition 38. The updated report and recommendations shall be to the satisfaction of the Council’s Team Leader Monitoring (Central). The updated report and recommendations shall be provided to the CLG.”

Most matters addressed in the previous reports are not repeated here (site description, geology, subsoil conditions, slope stability, etc.), but information from those reports is used in this report where appropriate. This current report addresses the changes in the Overall Site Plan from previous plans as well as the “Western Springs Pine Tree Removal Specification of Works”.

The major change in scope from 2016/2018 to 2021, from a geotechnical point of view, is that the earthworks extent and volume associated with the access track and staging areas are significantly reduced from those previously proposed. This is due to the removal of earthworked staging areas and the access track is now designed only for tracked machinery. No wheeled vehicles will be using the access track. This has enabled the track and staging areas to avoid topsoil stripping, formal cut and filling operations and structural retaining. There is now no need for any of those items, as the tracked vehicles do not require the level of access track formation as would be required by wheeled vehicles. This means that the scale and extent of earthworks is measurably reduced, such that the surface water controls and vegetation recommendations made in our previous reports are all null & void – no longer required. Typical cut/fill cross sections were modelled to confirm the stability of the track and that retaining is not required for the temporary access track.

This report has been prepared for Auckland Council.

2. OVERALL SITE PLAN

We have been provided with a CLC Consulting Group Ltd "Overall site Plan" ref. 21159-L101-D, dated February 2021 (attached).

This updated overall site plan describes a site access track reduced in width and scale from previous proposals. It identifies a metalled stabilised access track from the lower stadium and staging area, up a moderately steep (1V:4H) slope to the first "landing/chipping" area. From there, the track continues via a cut and place formation, approximately 4m wide which continues along the contour through three more landing areas before culminating in a final landing area at the northern extent of the works. Landing Areas 1,2,3 and 5 are 10m wide and 19m long. Landing Area 4, which is located around a localised flat site, is 15m wide and 20m long. This area is shown to be an area "to be set aside for 15m wide vehicle manoeuvring if required." It is noted on the site plan that the staging areas are locations for the temporary storage and processing of felled material. Additional earthworks are not required at these staging locations which has contributed to the substantial reduction in earthworks and removing the need for retaining.

This proposal has resulted in a significant reduction in the amount of earthworks from previous schemes.

3. WORKS SPECIFICATION

We have been provided with a Kotahi Projects document "*Western Springs Pine Tree Removal Specification of Work*". The relevant section as it effects this report is "Earthworking", which discusses the access road, track for works and track reinstatement with continual stabilisation.

The access road is the southern-most entry to the site and climbs a moderately steep slope. The access track is for tracked machinery access. The proposal is to construct it with a geotextile roading fabric overlain with compacted crushed aggregate. Some minor vegetation will need to be removed. There may also be the need for minor, localised cutting for appropriate formation. There are no stability concerns with this proposal.

The main track will be formed by a cut and place method. Some vegetation will require removal, but the cut and place will be carried out from the surface and include existing topsoil. This will be appropriate as the only traffic will be tracked vehicles. For a 4m wide track with batters of 45°, cut and fill depths will be in the order of 0.45m to 1.0m for 1:1 batters, which is satisfactory for the short-term duration of the works. This proposal means there will be no requirement for retaining works.

Mulching will be used to provide immediate stabilisation during track construction, so that tracked vehicles will be riding on mulch instead of bare clay/soil and this gets replenished as conditions require. These operations will contribute to maintaining local track stability and overall slope stability.

For track reinstatement, it is proposed to replace the earth that was displaced in track construction and shape to suit original profiles, nominally compacted and stabilised with mulch chip and hay.

The staging and processing areas will require no earthworks and therefore no retaining. Wood chip dispersal will be alongside the track (both sides). Overall, this proposal has a far lower impact on the immediate environment than previous proposals.

4. CONCLUSIONS & RECOMMENDATIONS

This revised methodology of access and staging is superior to previous methodologies from a geotechnical viewpoint due to the need for wheeled vehicles being removed above the access track.

The proposed earthworks are much reduced in volume and area, less intrusive and temporary.

The proposed earthworks will be easier to reinstate and reinstate in a manner that returns the area to its original state. Progressive stabilisation will be used along the track areas.

The proposed earthworks are more favourable than previous schemes from stability, ground disturbance and dust generation points of view.

Our only recommendation is to shape the cut to place track so that it has a slight gradient back to the uphill side. (Which is incorporated in the specification of works).

In order to satisfy consent conditions 55 & 56, a geotechnical engineer should be engaged to observe the earthworks on site as they occur. Geoconsult have been engaged to observe earthworks operations (but not ESCP & culvert operations which will be done by others)

5. LIMITATIONS

The recommendations and opinions contained in this report are based on the subsoils encountered at discrete test locations. We have made assumptions about the nature of the ground conditions across the site based on this limited subsoil information and actual ground conditions may vary from those assumed in this report. If any variations from the assumed ground conditions are found to exist during construction the matter should be referred back to Geoconsult.

This report has been prepared solely for the benefit of Auckland Council as our client and their nominated agents. Geoconsult accepts no liability in respect to any matters arising from the use of the information given in this report by any other person or organisation or for any other purpose.

GEOCONSULT

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Signed:



Geotechnical Team Leader

Typical track cross section as proposed by Contractor:



