4415
16 September 2022

Selwyn District Council
PO Box 90
Rolleston

GEOTECH
consulting ltd

Attention: Justine Ashley,

Dear Ms Ashley,

RE: Proposed District Plan
DPR-0436 PB & JC Nahkies
1359 Tramway Road, Dunsandel
Geotechnical Evidence Peer Review

Geotech Consulting has been asked to carry out a peer review on the geotechnically related evidence submitted in support of the re-zoning of land from that in the Proposed District Plan. The review is an assessment of the evidence presented and the appropriateness of the submitted land use for the site. Any information gaps are to be identified.

The geotechnical evidence submitted on behalf of PB & JC Nahkies is

- *Geotechnical Investigation Report*, Submission on the proposed Selwyn District Plan, 1359 Tramway Road, Dunsandel dated 29 October 2021, by Fraser Thomas Ltd, for Brent Nahkies
- Brief of evidence of Mason Reed, dated 28 July 2022, before the SDC hearings Panel

1. Geotechnical Investigation Report

1.1 Summary

The purpose of the Fraser Thomas report was to address the geotechnical suitability of the land for rezoning to Large Lot Residential use, with up to 35 lots of a minimum 5000 m^2 lot size (1.0). The subject site is a 19.4 hectare property (Lot 1 DP 74807 and Lot 1 DP 305456) of irregular shape with the railway and Main South Road to the northwest and Tramway Road to the southeast (1.0). It is essentially flat. A desk top review of available liquefaction (2.0) and geological mapping (4.0) demonstrates the general area is underlain with older deep gravel soils from a shallow depth, with little liquefaction potential

A visual inspection shows an area of depression, related to an old pit backfilled with gravel and some rubbish at the south corner (6.2). Site testing (6.3) was carried out with nineteen machine auger boreholes to between about 2m and 4m depth. The tests show about 0.2 – 0.4m of topsoil over sandy silt to between 0.4m and 0.7m across the northern part of the site, overlying sandy gravel extending to the base of the holes. The gravel is shallower and directly underlies the topsoil across the southern part. Ecan well logs from the area indicate the gravel extends to a considerable depth. The water table was recorded in the test pits at about 3 – 3.4m depth.

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Liquefaction is discussed in (8.0) with the conclusion that the depth to groundwater and predominantly gravel soils of considerable age make this hazard of very low risk with an equivalent TC1 Foundation Technical Category

Sections 9.0 and 10.0 discuss foundations. Shallow foundations to NZS3604 are considered suitable (9.1), subject to limited constraints due to the backfilled farm pit and the test pit holes themselves. There is additional discussion on service lines, earthworks and water disposal (11 – 13).

1.2 Comment

The report adequately characterizes the geotechnical conditions to demonstrate that the site is geotechnically suitable to support development. However, other than liquefaction, other natural hazards are not addressed.

2. Evidence of Mr Reed

Mr Reed's evidence summarises the findings of the geotechnical report. He concludes that the site is "in general" suitable and no unusual geotechnical problems are anticipated with residential development. The ground conditions and TC1 equivalent classification allow shallow foundations to be used in accordance with NZS3604.

3. Conclusion

The evidence submitted is sufficient to demonstrate that the land is geotechnically suitable for residential development, except that the full range of RMA section 106 hazards is not addressed (erosion, flooding, subsidence, falling debris etc). Knowledge of the general area suggests that these hazards will be non-existent or of tolerable level such that they do not present an obstacle for development, but this is not stated.

For completeness, it is suggested that the submitter either be requested to supply an assessment of sec 106 hazards, or that Mr Reed be asked to comment on this at the time he presents his evidence.

Yours faithfully
Geotech Consulting Limited

Ian McCahon