4415
17 November 2022

Selwyn District Council
PO Box 90
Rolleston

GEOTECH
consulting ltd

Attention: Justine Ashley,

Dear Ms Ashley,

RE: Proposed District Plan
DPR-0460 Marama Te Wai Ltd
West Coast Road – Halkett Road, West Melton
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 Marama Te Wai Ltd is

- *Geotechnical Investigation Report for proposed land use change, 1243 West Coast Road, West Melton*, dated 16 December 2020, by Landtech Consulting Ltd, for Marama Te Wai Ltd

The Brief of Evidence of Ivan Thomson, dated 5 August 2022 and submission (Aston Consultants, 11 December 2020) have also been viewed to provide context. The geotechnical report is for a large 49.8 ha area between West Coast Road to the south and Halketts Road to the north, made up of six greenfield titles and a number of rural residential titles along Shepherd Avenue on the east side. We have reviewed the report for the area in total.

1. Geotechnical report

The Landtech report was prepared in support of a land use change (1.1). The subject site is immediately west of the established West Melton township and is essentially flat land. A desk top review of available geological mapping (3.0), known active faults (3.1) and available data (4.0) demonstrates the general area is underlain with deep gravel soils from a shallow depth, liquefaction hazard is low and faulting is distant.

Site testing (5.0) has been done with eight excavated pits of 2.2 – 2.6m depth and associated scala penetrometer testing (Table 1). Topsoil varies at the test locations between 0.3m and 0.4m and directly overlies gravel in 3 of the 8 tests or overlies silt and sand to about 0.6m to 0.9m where the gravel is found (6.0). The water table depth is not explicitly defined, but Ecan well logs indicate a depth of 25 – 32m (4.0) and a depth of 27m is given in (7.0). Two soakage tests gave two significantly different results at locations identified as having different permeabilities (6.4)

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Liquefaction is assessed in (7.0) and considered to be unlikely given the deep gravels and low groundwater. An equivalent MBIE Foundation Technical category of TC1 has been assigned to the area.

Natural hazards are assessed in section 8.0 and found to be not present or negligible. Consequently, the report finds the site geotechnically suitable for residential development (8.0). The river deposits below surficial soils meet the criteria for "good ground" in NZS3604 but some weaker shallow soils may require specific foundation design (9.1). Shallow foundations are suitable.

2. Conclusion

The number of tests is relatively low given the size of area, but including the three well logs on the property, does meet the recommendations of the MBIE Guidance on subdivision investigations at plan change stage. The evidence submitted is sufficient to demonstrate that the land has a low liquefaction hazards, can be regarded as equivalent TC1 Foundation technical category, and is geotechnically suitable for residential development. No additional information is required.

Yours faithfully
Geotech Consulting Limited

Ian McCahon