

Before an Independent Hearings Panel

The Proposed Waikato District Plan (Stage 1)

IN THE MATTER OF the Resource Management Act 1991 (**RMA**)

IN THE MATTER OF hearing submissions and further submissions on the Proposed
Waikato District Plan (Stage 1):
Topic 25 – Zone Extents

**HIGHLIGHTS PACKAGE
CHRISTOPHER JAMES EDWARDS ON BEHALF OF TATA VALLEY LIMITED
(GEOTECHNICAL)**

12 May 2021

BUDDLE FINDLAY

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1. SUMMARY OF EVIDENCE

- 1.1 My full name is Christopher James Edwards. I am a Senior Engineering Geologist at Lander Geotechnical Consultants Limited.
- 1.2 I provided geotechnical and geological evidence in relation to proposed rezoning sought by TaTa Valley Limited (TVL)¹ of land at 242 Bluff Road and 35 Trig Road, Pokeno (**the Site**).
- 1.3 I have been involved in the development of the Site and this related rezoning proposal since January 2018 and have undertaken preliminary geotechnical investigations and analyses within the Site.
- 1.4 Based on the geologic setting and our investigations to date, I consider the Site has the following key geotechnical constraints and risks:
- (a) Slope instability associated with soil movement is a risk for the various steep sided flanks that surround the low-lying central valley area.
 - (b) Compressible organic and/ or cohesive soils within the low-lying valley area (highlighted yellow in below **Figure 2**²) within the central portion of the Site and near other watercourses on site resulting in long term consolidation settlement, which is typical of recent alluvial deposits.
 - (c) Liquefaction of saturated fine granular soils and/or cyclic softening of saturated cohesive soils is a possible characteristic of the recent alluvial deposits situated within the low-lying portions of the Site.
 - (d) Lateral spread associated with seismic/ liquefaction events is a consideration for recent alluvial deposits situated near an unretained/free face (ie within proximity of the Waikato River bank directly adjacent the southern boundary of the site).

¹ Submitter 574 and further submitter 1340.

² Although this is the only figure in my summary, I have retained the figure numbering used in my primary evidence to describe the figure.

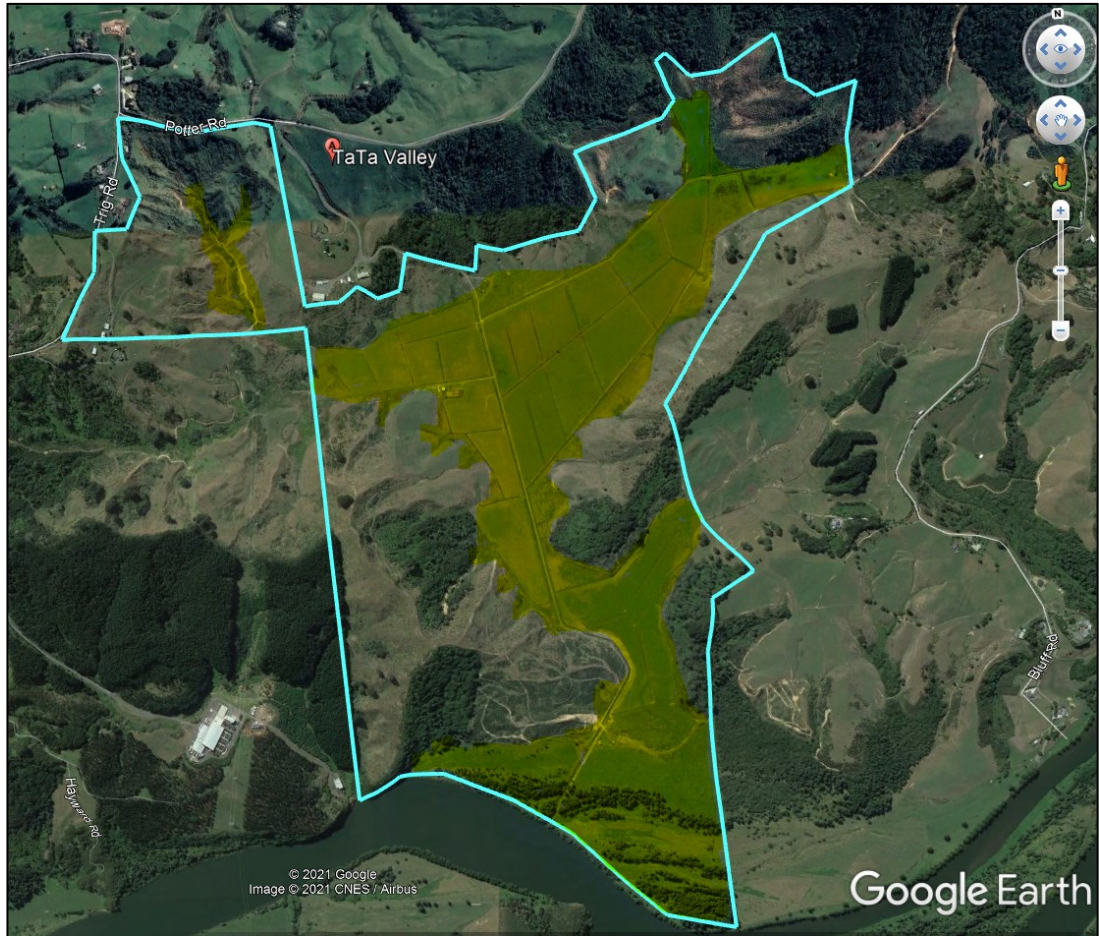


Figure 2: Plan showing approximate extent of 'low lying valley area', as highlighted in yellow

- 1.5 I have identified a number of potential geotechnical solutions to address these key constraints/risks including:
- (a) For areas with identified slope stability concerns (ie steep sided flanks that surround the low-lying valley area), conceptual earthworks solutions to address slope stability concerns include stability undercuts at the base of proposed fill batters, geogrid face tightening stabilisation of steep fill batters, erosion control of sensitive soil (volcanic ashes) cut batters with geotextile products and geotechnical drainage to control ground water levels.
 - (b) In addition to this, the design of building platforms within proximity of such slopes can be addressed with appropriate setbacks from slopes or engineering measures such as in-ground barrier pile walls/ retaining walls which are typically matters for resource and building consent.

- (c) Within the low-lying valley area (as shown in **Figure 2** above) within the central portion of the site, conceptual design solutions to address consolidation settlement/ liquefaction/ lateral spread concerns include:
 - (i) Ground improvement (eg undercutting of soft/organic alluvial deposits, replacement with engineered fills with geogrid reinforcement and preloading development areas to force expected settlements to occur prior to construction occurring); and/or
 - (ii) Specific engineer designed building platform foundations (ie piled foundation systems).

1.6 Once the development proposals for the Site are finalised at resource consent or building consent phase, further detailed geotechnical investigation and analysis will be required, ground models will need to be developed and final engineering solutions to the key geotechnical considerations will need to be made. In my opinion, there are practical engineering solutions or management approaches to appropriately address identified constraints at the time of resource or building consent.

1.7 Provided these prevailing/ perceived geotechnical issues are assessed and addressed during detailed site investigations for resource or building consents, the Site will be suitable for re-zoning to future resort/accommodation use generally in accordance with the TVL resort zone provisions.

Chris Edwards

12 May 2021