

BEFORE HEARING COMMISSIONERS IN THE WESTERN BAY OF PLENTY DISTRICT

UNDER THE

Resource Management Act 1991 (“Act”)

IN THE MATTER OF

RC13360L: an application for resource consent to authorise development works departures and the operation of industrial activities within part of the Te Puna Business Park prior to all pre-requisite requirements being met.

BETWEEN

**TE PUNA INDUSTRIAL
LIMITED**

Applicant

**AND WESTERN BAY OF
BAY OF PLENTY
DISTRICT COUNCIL**

Consent authority

SUPPLEMENTARY 42A EVIDENCE OF ROB TELFORD

Before a Hearing Panel: Rob van Voorthuysen (Chair), James Whetu (Commissioner) and Fraser Cambell (Commissioner)

INTRODUCTION

Background, qualifications and experience

1. My full name is Robert Benjamin Telford.
2. I am employed by Western Bay of Plenty District Council (**Council**) as a Senior Land Development Specialist.
3. I hold an Honours Degree in Geology and Geophysics from the University of Auckland.

4. I have more than 20 years' of geotechnical engineering and engineering geology experience. I have been in my current role since August 2023. Previously, I worked for several specialist geotechnical engineering consultancies and was an accredited Category 1 Geo-Professional prior to joining Council.
5. I have reviewed the geotechnical aspects of the application, on behalf of Council's Land Development Engineering Department.
6. I have not visited the site but am generally familiar with the existing activities occurring on the site. I am familiar with the surrounding properties, roading, infrastructure and local geological conditions.

Expert witness code of conduct

7. I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's 2023 Practice Note. While this is not an Environment Court hearing, I have read and agree to comply with that Code. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Purpose and scope of evidence

8. The purpose and scope of my evidence is to provide a response to the geotechnical reporting provided by WSP NZ Ltd and to the evidence submitted by Mr Rob Taylor.
9. My evidence relates to the geotechnical assessments and risks on and off the site; specifically seismic liquefaction, static settlement and slope stability.

EVIDENCE

Seismic Liquefaction

10. The investigation and analysis methods used by WSP to assess the seismic liquefaction risks are in accordance with the current NZ standards.
11. The assessment of low liquefaction risk at this site in a 1-25 year earthquake and high liquefaction risk in a 1-500 year earthquake are consistent with the site geology and other sites nearby.
12. The classification of this site as 'Technical Category 3', per the Canterbury Earthquake Rebuild guidelines, places it at the high end of the risk spectrum.
13. I agree with the comments of WSP and Mr Rob Taylor, in that the liquefaction risks should be manageable using accepted engineering practices applied during detailed design.

Static Settlement

14. The investigation and analysis methods used by WSP to assess static settlement risks are in accordance with accepted standards for a preliminary risk assessment. As stated by WSP and Mr Rob Taylor, further investigation, analysis and settlement monitoring are expected during the proposed detailed design and earthworks.
15. The assessment that the site will experience significant static settlement under building and earthworks loads is consistent with the underlying geology and observations on similar sites nearby.
16. The mitigation options proposed by WSP, such as pre-loading, are generally appropriate for this type of site and development. However, in my view the need for ongoing maintenance of services within the site as a result of long-term settlement should not be understated.
17. I am concerned that further detail has not been provided regarding potential settlement effects to Te Puna Station Road, particularly near the proposed intersection.

18. The settlement analyses presented by WSP may be underestimating the potential for settlement along the roadway, due to the inherent uncertainty of the methods used and some assumptions in the calculations.
19. While the proposed earthworks methodology and pre-loading for the intersection are feasible in theory, these will need to be carefully managed to avoid posing a nuisance to neighbours and/or a safety risk to road users.
20. As stated by WSP and Mr Rob Taylor, the proposed works are likely to result in an increased need for maintenance of Te Puna Station Road during and for some time (possibly years) after works have been completed.
21. The application reports do not discuss effects of settlement to the existing Council wastewater and water pipes, in-ground telecommunications and the overhead power line along Te Puna Station Road. These services may be sensitive to short and long term settlements.
22. While it is expected that Te Puna Station Road will be re-levelled to account for settlement, until this re-levelling has been completed settlement of the carriageway will increase the flooding risk to the road.

Slope Stability

23. The WSP stability assessment focuses on the slope within the site boundaries and below the existing dwelling. There are larger, similarly steep slopes a short distance beyond the site's south-western boundaries which may also pose a risk to the development. It's difficult to assess this risk because the drawings are not clear on what the activity below these slopes might be (e.g. 'other industrial yards').
24. The slope stability mitigation measures described by WSP can be effective, subject to appropriate design. Factors which might limit the effectiveness of specific options may include:
 - (a) The use of retaining walls or buttress fills for slopes beyond the site boundaries is subject to the approval of neighbouring landowners and requires easements and

access for the works and any maintenance.

- (b) Debris bunds and buttress fills usually require a significant width of ground at the toe of the slope (perhaps as much as 20m). Preliminary designs for these works have not been submitted and it is therefore not possible to gauge the effect this will have on the proposed development and area of useful land within the site.
- (c) Debris bunds and catchfences require access and easements for machinery to the area upslope of the barrier for the removal of debris and for occasional maintenance.

- 25. The stability assessment by WSP is based on limited geological data. I would expect further investigation and analyses during detailed design. These analyses will need to demonstrate that slopes above and beyond the site's boundaries will not be adversely affected by the proposed works.

Conclusion

- 26. In general, I consider that the level of geotechnical investigation, analysis and assessment undertaken within the site is appropriate for preliminary purposes.
- 27. Development of the site will remain somewhat challenging, with a high requirement for detailed design and specific engineering to account for settlement and liquefaction risks, and for ongoing maintenance.
- 28. I do not consider that some risks outside the site boundaries have been fully assessed, namely the effects of settlement to Te Puna Station Road and associated infrastructure, and the stability of slopes in neighbouring properties to the south-west of the site.

Rob Telford
8 July 2024